ABSTRACTS

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European Renal Care Association

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Acknowledgement

We would like to acknowledge Cordelia Ashwanden as the Scientific Programme Co-ordinator and Anna Marti i Monros as the Journal Editor in preparing the Abstract Book.

Foreword

Dear Friends and Colleagues,

welcome to the 30th conference of the EDTNA/ERCA. We have entered the new millennium and, as in all our conferences, our aim is to further the progress of renal care in this new century by promoting new ideas and reinforcing best practice.

This conference will bring new ideas such as the Pre-conference Workshops, as well as an increase in interactive sessions. There will also be a certificate showing hours of attendance at certified sessions - this follows the trend of needing proof of learning.

Abstracts submitted each year continue to increase both in subject and number. The difficulty for the Scientific Programme Committee is finding room for all those abstracts worthy of presentation. Necessarily standards are constantly raised to ensure that our conference continues to deserve the reputation it has achieved – therefore if you did send an abstract which has not been accepted this time, please go on sending your work. We need you and your ideas; without your hard work there would not be a conference and we value all your contributions. It is only through sharing our know ledge and experience that our practice can advance.

The Abstract Book lists all selected abstracts submitted by members of our Association as well as those from our invited Guest Speakers. They are in alphabetical order to help you find the abstracts of the papers you will be hearing.

The programme has been compiled round the Conference Topics. Each session has contributions from various professionals who comprise our multi-disciplinary association. The Guest Speakers will be addressing an interesting range of subjects, which follow the Conference Theme. The oral presentation of posters is increasing every year and is a popular feature.

Your input is vital to the relevance of future conferences. Please remember to fill in all evaluation forms and let us know what you enjoyed and what you would like in the future.

Congratulations to all those who have had abstracts accepted. We welcome you and all the delegates to Nice, which is a wonderful city combining the best of the tourist sights with a wonderful climate. We hope that the new knowledge and stimulation received during the conference will inspire you and you will return to your units ready to share your experiences with your colleagues and contribute to the well-being of renal patients.

I would like to thank everyone who has contributed to this programme and look forward to seeing you in Nice.

Cordelia Ashwanden
Scientific Programme Co-ordinator

Vorwort

Liebe Freunde und Kollegen

Willkommen zur 30. EDTNA/ERCA - Konferenz. Wir haben das neue Jahrtausend erreicht und, wie auf allen unseren Konferenzen, ist das Ziel, die nephrologische Pflege in diesem Jahrhundert weiterzuentwickeln, indem wir neue Ideen fördern und die beste Praxis anzuwenden.

Diese Konferenz wird neue Ideen umsetzen, wie die Pre - Conference Workshops und mehr interaktive Veranstaltungen. Außerdem gibt es eine Bestätigung der Teilnahmezeit an bestimmten Vorträgen - dies folgt dem Trend des Nachweises von Fortbildungsmaßnahmen.

Die jedes Jahr eingesandten Abstracts steigen sowohl in der Zahl als auch im Themenumfang. Für das Komitee des wissenschaftlichen Programms besteht die Schwierigkeit, den veröffentlichungswürdigen Abstracts genug Raum zu geben. Die notwendigen Standards werden kontinuierlich angehoben um sicherzustellen, dass unsere Konferenz weiterhin ihren Ruf verdient, den sie sich erworben hat - haben sie also ein Abstract eingeschickt, das diesmal nicht akzeptiert worden ist, senden Sie uns bitte weiter Ihre Arbeiten. Wir brauchen Sie und Ihre Ideen; ohne ihre mühsame Arbeit gäbe es keine Konferenz und wir schätzen alle Ihre Beiträge. Nur indem wir unser Wissen und die Erfahrung teilen, kann unsere Praxis Fortschritte machen.

Das Abstractbuch enthält alle durch Mitglieder unseres Verbandes oder Gastredner eingesandten und angenommenen Abstracts. Sie sind alphabetisch geordnet um Ihnen beim Auffinden der Abstracts zu helfen, wenn Sie diese im Vortrag hören.

Das Programm wurde um die Themen der Konferenz herum errichtet. Teil jeder Veranstaltung sind Beiträge verschiedener Fachleute, die unserem multidisziplinären Verband beistehen. Die Gastredner werden eine interessante Themenauswahl abdecken, die dem Konferenzthema folgen. Die mündliche Posterpräsentation wird jedes Jahr ausgedehnt und findet viel Zuspruch.

Ihre Ideen sind lebenswichtig für die Bedeutung zukünftiger Konferenzen. Bitte denken Sie daran, die Bewertungsformulare auszufüllen und lassen Sie uns wissen, was Ihnen gefallen hat und wovon Sie in Zukunft gern mehr hätten.

Glückwünsche an alle, deren Abstract angenommen worden ist. Wir heißen Sie und alle anderen Teilnehmer in Nizza willkommen, einer wundervollen Stadt, die die touristischen Schönheiten mit einem herrlichen Klima verbindet. Wir hoffen, dass Sie das neugewonnene Wissen und die Anregungen durch die Konferenz inspirieren werden und mit der Bereitschaft in Ihre Zentren zurückkehren, die Erfahrungen mit den Kollegen zu teilen und zum Wohlbefinden der nephrologischen Patienten beizutragen.

Ich möchte allen danken, die zu diesem Programm ihren Beitrag geleistet haben und freue mich darauf, Sie in Nizza zu treffen.

Cordelia Ashwanden
Koordinatorin des wissenschaftlichen Programms

Avant-Propos

Chers amis et collègues,

Bienvenu à la 30e conférence de l'EDTNA/ERCA. Nous sommes entrés dans le nouveau millénaire et, comme dans toutes nos conférences, notre but, dans ce nouveau siècle, est de faire progresser les soins en néphrologie en encourageant de nouvelles idées et en améliorant la pratique quotidienne.

Cette conférence apportera de nouvelles idées telles que les ateliers pré - conférence, ainsi qu'une augmentation des sessions interactives. Il y aura aussi un certificat qui prouvera votre présence aux sessions certifiées (preuves de présence pour votre formation permanente).

Les résumés soumis chaque année continuent à augmenter tant en sujets qu'en nombre. La difficulté pour le comité du Programme Scientifique est de trouver de la place pour tous les abstracts dignes d'être présentés. Nous devons garder un niveau élevé pour être sur que notre conférence continue à mériter sa réputation, et par conséquent, si vous aviez envoyé un résumé qui n'a pas été accepté cette fois ci, continuez s'il vous plaît à nous envoyer vos travaux. Nous avons besoin de votre participation et de vos idées; sans votre travail, il n'y aurait pas de conférence et nous évaluons scrupuleusement toutes vos contributions. C'est seulement au travers du partage des connaissances et des expériences que notre pratique peut évoluer.

L'Abstract Book est le recueil de tous les abstracts sélectionnés parmi ceux qui ont été soumis par des membres de notre Association ainsi que ceux de nos invités. Ils sont en ordre alphabétique pour vous aider à retrouver facilement les résumés des communications que vous entendrez.

Le programme a été construit autour des sujets de la conférence. Chaque session comprend des contributions de plusieurs professionnels de notre association multidisciplinaire. Le speaker invité développera une palette intéressante de sujets tirée des thèmes de la conférence. La présentation orale de posters augmente chaque année et est très populaire.

Vos réactions sont vitales pour les futures conférences. N'oubliez donc pas, s'il vous plaît, de remplir tous les formulaires d'évaluation et faites nous savoir ce que vous avez apprécié et ce que vous aimeriez entendre comme sujet dans le futur.

Félicitations à tous ceux et celles qui ont eu leurs résumés acceptés. Nous vous accueillons ainsi que tous les délégués à Nice qui est une ville magique qui combine de superbes panoramas avec un climat merveilleux. Nous espérons que les nouvelles connaissances et l'émulation de la conférence vous inspirera et que vous reviendrez à vos unités prêtes à partager vos expériences avec vos collègues et contribuerez ainsi au bien être des patients insuffisants rénaux.

J'aimerais remercier tous ceux et celles qui ont contribués à ce programme et espère vous voir à Nice.

Cordelia Ashwanden
Coordinatrice du programme scientifique

Voorwoord

Beste vrienden en collega's,

welkom op de dertigste conferentie van EDTNA/ERCA. We bevinden ons in het nieuwe millennium, en zoals voor al onze conferenties, beogen we in deze nieuwe eeuw een gestage vooruitgang van onze nefrologische zorg door het promoten van nieuwe ideeën en door onze praktijk degelijk te onderbouwen.

Op deze conferentie zijn er vernieuwingen zoals de preconferentie workshops en een toename van interactieve sessies. Er zal ook een certificaat voorhanden zijn waarop aanwezigheidsuren kunnen aangeduid worden - dit in navolging van de trend om bewijs van onderwijs te leveren.

De ingestuurde abstracts nemen toe zowel qua onderwerp alsook qua aantal. De moeilijkheid voor het wetenschappelijk comité is een plaatsje voor al deze voordrachten te creëren. Noodzakelijke normen worden almaar scherper opdat onze conferentie de reputatie die ze verkregen heeft, kan blijven waarmaken - als je dan ook een abstract ingezonden hebt dat deze keer niet aanvaard werd, mag je de moed niet opgeven en moet je toch blijven insturen. We hebben jullie ideeën nodig; zonder jullie labeur zou er geen conferentie zijn en we waarderen jullie bijdrage. Het is slechts door het delen van onze kennis en ervaring dat onze praktijk er kan op vooruit gaan.

In het Abstractboek vinden jullie alle geselecteerde abstracts van onze leden alsook de abstracts van de uitgenodigde sprekers. Ze staan alfabetisch gerangschikt zodat jullie het abstract van je keuze gemakkelijk kunnen vinden.

Het programma is opgebouwd rond de thematiek van de conferentie. Iedere sessie bevat bijdragen van verscheidene professionelen die onze multidisciplinaire vereniging in het hart dragen. De gastsprekers zullen een waaier van onderwerpen rond het conferentiethema aansnijden. De orale presentatie van de posters zit in de lift en is zeer populair.

Uw inbreng is vitaal voor de relevantie van toekomstige conferenties. Gelieve alle evaluatieformulieren in te vullen; laat ons weten wat je fijn vond en wat je in de toekomst zou willen.

Proficiat voor al degenen wier abstract geselecteerd werd. We verwelkomen jullie en alle gedelegeerden in Nice, een wondermooie stad die een toeristische aanblik met een aangenaam klimaat combineert. We hopen dat de nieuwe kennis en stimuli die jullie tijdens de conferentie opgedaan hebben, inspirerend werken. Wanneer je dan terugkomt op de afdeling, zal het mededelen van je opgedane ervaringen een bijdrage betekenen voor het welzijn van de nefrologische patiënten.

Ik zou iedereen die een bijdrage geleverd heeft aan het programma willen bedanken en ik kijk er naar uit om jullie in Nice te ontmoeten.

Cordelia Ashwanden
Coördinatrice van het wetenschappelijk programma

Prólogo

Queridos Amigos y Colegas,

Bienvenidos a la trigésima conferencia de la EDTNA/ERCA. Hemos entrado en el nuevo milenio y, como en todas nuestras conferencias, nuestro objetivo es alentar el progreso del cuidado renal en este nuevo siglo promoviendo nuevas ideas y estimulando una mejor práctica.

Esta conferencia incluye nuevas ideas, como los seminarios que se celebrarán justo antes de la conferencia así como un mayor número de sesiones interactivas. Habrá, además, un certificado que especificará las horas de asistencia a sesiones específicas certificadas - esto sigue la tendencia de la necesidad de probar o demostrar el aprendizaje.

El número de resúmenes enviados continua aumentando cada año tanto en número como en temas. La dificultad para el Comité Científico Organizador es encontrar espacio físico para la presentación de todos los resúmenes que valen la pena ser presentados. Necesariamente, los criterios de aceptación aumentan constantemente para mantener la reputación ya conseguida, por lo tanto, si vuestro resumen no ha sido aceptado esta vez, por favor no os desaniméis y continuad enviando vuestro trabajo. No olvides que necesitamos vuestras aportaciones, sin vuestra colaboración no habría conferencia y vuestro trabajo es muy apreciado. Sólo compartiendo nuestro trabajo, experiencia y conocimiento es posible avanzar.

En el libro de resúmenes aparecen todos los trabajos seleccionados enviados por nuestros miembros además de los correspondientes a nuestros conferenciantes invitados. Los trabajos aparecen ordenados alfabéticamente para facilitar la localización de los resúmenes presentados.

El programa ha sido desarrollado de acuerdo a los temas de la conferencia. Cada sesión contiene contribuciones de diferentes profesionales dado el carácter multidisciplinario de nuestra asociación. Los conferenciantes invitados contribuirán con un amplio programa de temas. Una característica popular de nuestra conferencia es el aumento año tras año de la presentación oral de posters.

Vuestra aportación es de vital importancia para el futuro de nuestra conferencia. Por favor, no olvidéis rellenar todos los formularios de evaluación, haciéndonos saber aquello que habéis disfrutado y vuestras expectativas para futuras conferencias.

Nuestra enhorabuena a quienes han conseguido la aceptación de sus resúmenes. Les damos la bienvenida a todos los participantes y delegados a Niza, hermosa ciudad que combina preciosas vistas turísticas con un clima acogedor. Esperamos que la conferencia aporte nuevos estímulos y conocimientos, que éstos sean compartidos y que contribuyan al bienestar de los pacientes renales.

Quiero agradecer a todos los que han contribuido con el programa y espero verlos en Niza.

Cordelia Ashwanden
Coordinadora del Programa Científico

Prefazione

Egregi Colleghi ed Amici,

Benvenuti alla 30a conferenza dell'EDTNA/ERCA. Siamo entrati nel nuovo millennio e, come in tutte le nostre conferenze, il nostro obiettivo è il progresso dell'assistenza nefrologica in questo nuovo secolo attraverso la promozione di nuove idee ed il sostegno al miglioramento della pratica.

Questa conferenza è portatrice di nuove idee come i Workshop pre-conferenza ed un maggior numero di sessioni interattive. Ci sarà anche una certificazione attestante le ore di effettiva partecipazione alle sessioni, come conseguenza della crescente richiesta di certificare la formazione.

Gli abstract sottoposti stanno aumentando di anno in anno, sia come numero che come argomenti. La difficoltà per il Comitato del Programma Scientifico è quella di trovare posto per tutti gli abstract che valgono la presentazione. Necessariamente gli standard di accettazione sono costantemente elevati per assicurare che la nostra conferenza mantenga la buona reputazione di cui gode. Perciò se voi avete inviato degli abstract che non sono stati approvati quest'anno, non disperate e continuate a mandarceli. Abbiamo bisogno delle vostre idee; senza il vostro duro lavoro non ci sarebbe la conferenza e per noi, tutti i vostri contributi hanno un grande valore. E' solo attraverso la condivisione delle conoscenze e delle esperienze che la nostra pratica professionale può migliorare.

Il Libro degli Abstract elenca tutti gli abstract selezionati sottoposti sia dai soci che dai Relatori Ospiti. Sono presentati in ordine alfabetico per facilitare la consultazione e la ricerca della presentazione che andrete a seguire.

Il programma è stato concepito intorno al Tema della Conferenza. Ogni sessione ha contributi provenienti da diversi professionisti dell'area multidisciplinare della nostra associazione. I Relatori Ospiti affronteranno un ampia gamma di argomenti connessi con il Tema della Conferenza. Le presentazioni orali dei poster aumentano di anno in anno con grande successo.

I vostri contributi sono di vitale importanza per le future conferenze. Non dimenticate di compilare le schede di valutazione per farci sapere cosa avete gradito e cosa vorreste in futuro.

Congratulazioni a tutti coloro che hanno avuto un abstract accettato. Diamo il benvenuto a voi e a tutti i delegati a Nizza che é una magnifica città dove il meglio del turismo si combina con un clima eccezionalmente favorevole. Ci auguriamo che le nuove conoscenze e gli stimoli che riceverete durante la conferenza vi siano di ispirazione per tornare nei vostri servizi pronti a condividere tutto questo con i vostri colleghi contribuendo così al benessere dei vostri pazienti.

Ringrazio sentitamente quanti hanno contribuito alla formulazione del programma e spero di incontrare tutti a Nizza.

Cordelia Ashwanden
Co-ordinatore del Programma Scientifico

Πρόλογος

Αγαπητοί φίλοι και Συνάδελφοι,

Καλωσορίσατε στο 30ό Συνέδριο της EDTNA/ERCA. Περάσαμε το κατώφλι της νέας χιλιετίας και, όπως σε όλα τα συνέδριά μας, ο στόχος μας είναι να προωθήσουμε την ανάπτυξη της νεφρολογικής φροντίδας τον καινούργιο αιώνα, προάγοντας νέες ιδέες και ενισχύοντας την καλύτερη πρακτική.
Αυτό το συνέδριο έχει να παρουσιάσει νέες ιδέες όπως τα Προσυνεδριακά Εργαστήρια, όπως επίσης και μία αύξηση των παρουσιάσεων μεγάλης συμμετοχής. Επίσης, στο συνέδριο αυτό θα δοθεί ένα πιστοποιητικό, το οποίο θα επιβεβαιώνει τις ώρες παρακολούθησης των συνεδρίων - ακολουθώντας έτσι τη σύγχρονη τάση τεκμηρίωσης της μάθησης.
Οι περιλήψεις που υποβάλλονται κάθε χρόνο συνεχίζουν να αυξάνονται τόσο στα θέματα τους όσο και στον αριθμό τους. Η δυσκολία για την Επιτροπή του Επιστημονικού Προγράμματος είναι να προγραμματίσει όλες αυτές τις περιλήψεις που αξίζει να παρουσιαστούν. Τα αναγκαία κριτήρια βέτσινται συνεχώς για να διασφαλίσουμε ότι το συνέδριό μας δίκαια συνεχίζει να αποδομήσει τη φήμη που έως σήμερα έχει κερδίσει - επομένως εάν έχεις στείλει μία περίληψη που δεν έγινε αυτή τη φορά αποδεκτή, παρακαλώ να συνεχίσεις να μας στέλνεις τις εργασίες σου. Χρειαζόμαστε και εσένα και τις ιδέες σου χωρίς τη σκληρή προσπάθειά σου δεν θα υπάρχει συνέδριο και όλες οι συνεισφορές αποτελούν μία για εμάς. Μόνο μέσα από την ανταλλαγή γνώσεων και εμπειριών μπορεί να αναβαθμιστεί η πρακτική μας.
Στο Βιβλίο Περιλήψεων θα βρεις όλες τις επιλεγμένες περιλήψεις που έχουν υποβληθεί από μέλη της Ένωσης μας, καθώς επίσης και από τους προσκεκλημένους Επιστημονικούς Ομιλητές. Οι περιλήψεις τοποθετούνται με αλφαβητική σειρά, έτσι ώστε να είναι πιο εύκολο σε σένα να βρεις τις περιλήψεις των παρουσιάσεων που θα επιλέξεις να παρακολουθήσεις.
Το πρόγραμμα έχει συνταχθεί με βάση τις Θεματικές Ενότητες του Συνεδρίου. Σε κάθε συνέδριο έχουν συνεισφέρει διάφοροι επαγγελματίες που, απαρτίζουν τη διεπιστημονική μας ένωση. Οι Επίσημοι Ομιλητές θα αναφερθούν σε ιδιαίτερα ενδιαφέροντα θέματα, σχετικά πάντα με το θέμα του Συνεδρίου. Η προφορική παρουσίαση των poster αυξάνεται κάθε χρόνο και αποτελεί ένα δημοφιλή τρόπο παρουσίασης. Η παρουσία σου και η γνώμη σου έχει καθοριστική σημασία για τα επόμενα συνέδρια. Παρακαλώ, μην διστάσεις να συμπληρώνεις όλες τις δυνατές αξιολόγησης και συμπέρασμα μας για τα θέματα τα οποία βρήκες ενδιαφέροντα και για αυτά που θα ήθελες να ακούσεις στο μέλλον.
Υποχρεωτήρια σε όλους αυτούς των οποίων οι περιλήψεις έγιναν αποδεκτές. Καλωσορίζουμε όλους εσάς και τους εκπροσώπους σας στη Νίκαια, μια όμορφη πόλη που συνδυάζει τα καλύτερα αξιοθέατα με ένα υπέροχο κλίμα.
Ελπίζουμε πως η νέα γνώση και τα ερεθίσματα που θα λάβεις στη διάρκεια του συνεδρίου να αποτελέσουν πηγή έμπνευσης για εσένα και θα επιστρέψεις στη μονάδα σου έτοιμος να μοιραστείς τις εμπειρίες σου με τους συνεδρόμους σου, ενσωματώνοντας στην πράξη ζωής των νεφροπαθών.
Θα ήθελα να ευχαριστήσω όλους όσους συνέβαλαν σε αυτό το πρόγραμμα και ανυπομονώ να σας δω στη Νίκαια.

Cordelia Ashwanden
Συντονιστής Επιστημονικού Προγράμματος

Guest Speakers

J.	Auer	United Kingdom
M.	Ammor	France
D.	Borniche	France
G.	Brunori	Italy
M.	Chanas	France
R.	Dingwall	United Kingdom
T.	Garrett	United Kingdom
Z.	Gavish	Israel
J.	Geoghegan	United Kingdom
R.	Gokal	United Kingdom
J.	Guillaud	France
J.	Hurst	United Kingdom
M.	Jadoul	Belgium
H.	Dulku Kaur	United Kingdom
J.	Van Manen	The Netherlands
I.	Morgan	United Kingdom
K.-P.	Muthig	Germany
C.	Nagel	The Netherlands
D.	Ouzan	France
P.	Painter	USA
J.	Palmero Dacruz	Spain
S.	Perrin	United Kingdom
L.	Plant	United Kingdom
R.	Ponikvar	Slovenia
I.	Santala	Finland
J.	Vanuytsel	Belgium
P.	Wiener	Czech Republic
P.	Ziroyannis	Greece

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Technicians' Special Interest Group

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Conference Opening Ceremony · Saturday, 22 September 2001

Guest Speaker: Richard Dingwall, UK "The Journey of Discovery" (Hall: Apollon)

Scientific Programme
Sunday, 23 September 2001

	Apollon Translation	Athena Translation	Clio/Thalie	Hermès	Erato
9:00	CORPORATE EDUCATION SESSION **AMGEN** Improving patient outcomes in chronic kidney disease *Chair: Gemma Bircher* Achieving excellence in patient outcomes – meeting the challenge **J.P. van Waeleghem** New choice in the treatment of renal anaemia - What is in it for the patient? **D. Mapes** Clinical experience with erythropoiesis stimulating protein **B. Zablyar**	**Transplantation** Transplantation: Improving the Quality of Life **Dr. M AMMOR (F)** *Chair: Ursula Elfrich Mirjana Calic* 179 Skin cancer surveillance post transplantation: establishing a nurse-led clinic **Reece** 190 Reduced rate of rejection and infection in live donor transplant recipients with use of interleukin-2 (IL-2) blocker **Trevitt** 47 Immunabsorption of anti HLA antibodies on protein A in hyperimmunized recipients waiting for transplantation **Kinobiarhou**	**Care of staff** Involvement of staff in running of renal units **Jacqueline GEOGHEGAN (UK)** *Chair: Lynn Denning Ros Tibbles* 185 Recruitment and retention - a clinical trainer is vital! **Stapleton** 119 Is team working approach a reality within the haemodialysis units? **Martinez Martinez** 164 Rising to the challenge of effective leadership **Maclean**	Oral/Poster Presentations (1) **Advanced Dialysis Techniques** *Chair: Alois Gorke Roland Visser* 91 Vascular access care a nurse's responsibility **Wittgruberová** 106 Haemodialysis one year after the civil war **Spatzker** 113 Isolated ultrafiltration, single or double needle technique? **Gago** 140 Flexible control of prescribing in a specialist unit **D'Arcy** 198 Sodium and ultrafiltration profiling in haemodialysis - does it work? **O'Sullivan** 201 Effect of dialysate temperature on haemodynamic stability; intervention by nurses **Kerckhoffs** 214 Measurement of the inferior caval vein diameter (ICVD) by dialysis nurses **van Rijbroek** 221 Vascular access blood flow rate and efficiency of haemodialysis **Pereira**	Business Meeting **SIG Technicians** *Chair: Aase Riemann*
10:30	**Coffee**	**Coffee**	**Coffee**	**Coffee**	**Coffee**

	Apollon Translation	Athena Translation	Clio/Thalie	Hermès	Erato
11:00	**Quality of Life** **Liam PLANT (UK)** Quality of Life for the renal patient **Juliet AUER (UK)** Dialysis: the implications for the family **Sue PERRIN (UK)** Advanced Directives: Is it really the patients choice? *Chair: Richard Dingwall Gianina Veres*	CORPORATE EDUCATION SESSION **HOSPAL** Practical use of Physio dialysis – automatic control of intra dialytic blood volume *Chair: Althea Mahon* Basics **A. Kneppel** Decision and programming in Physio Dialysis **A.C. Lundin** How to handle alarm situations **N. Vervaat** Advantages of Physio systems **A. Loescher**	**Nutritional issues** Assessing Nutritional Status: shared responsibility **Christa NAGEL (NL)** *Chair: Gavin James Liljana Gaber* 178 Mid-arm circumference measurement - pre or post dialysis? **Ratan** 143 Clinical effectiveness of dietary interventions **Green** 128 Interdisciplinary communication for the diabetic renal patient **Attrill**	**Advances in Computer On-Line support** Distance learning: Development in Renal Education **Judith HURST (UK)** *Chair: André Stragier Jean-Yves de Vos* 165 Computerised nursing records - what are the benefits? **Mallinder** 45 The renal nurse and the Internet: a new challenge **Gogosis** 144 Initiating an integrated approach towards nursing documentation **Hallen**	**Toetstheater** *Chair: Marion Lammers* Come and relieve your stress by joining us!
12:30	L A N G U A G E F O R U M S				
	L U N C H				

Scientific Programme
Sunday, 23 September 2001

	Apollon Translation	Athena Translation	Clio/Thalie	Hermès	Erato
14:00	**Education** . Educating the renal staff to care for those with visual impairment **Pavel WIENER (CZ)** *Chair: Doris Bahnmüller* *Jitka Pancírová* 145 Communication with the learning disabled patient on dialysis - implications for nursing staff **Hallett** 10 Long-term follow-up of a programme for persistent life-style changes in patients with ESRD **Bergström** 22 Pre-dialysis Education **Zecca**	CORPORATE EDUCATION SESSION **F. HOFFMANN-LA ROCHE** Improving the Nurse/ Patient Relationship: a multi-faceted approach *Chair: Helen Noble*	Discussion Group **Quality of Life ? or life?** *Chair: Cordelia Ashwanden* *Jean Hooper* **- Richard Dingwall** **- Sue Perrin** **- Juliet Auer** **- Liam Plant** **- Patricia Painter**	**Infections and Catheter care** *Chair: Georgia Thanasa* *Heather Jayasekera* 86 Not another line infection! **Lloyd** 81 Causative micro-organism in diabetic and non-diabetic peritonitis patients **Ünal** 5 Local Treatment of Permanent Catheters infected with Pseudomonas aeruginosa **Djebli** 114 Analysis of a vascular access protocol of surveillance **Gago** 85 Determination of arteriovenous cannulation approach differences between the institutions and nurses **Yürügen** 217 MRSA - learn to rule it **Teschauer**	Education Workshop How to use the EDTNA/ ERCA guidelines to help provide education in your unit. **Ursula Elfrich** *Chair: Deirdre Cunningham* 182 Transition to specialist practice: an ethnographic study of Omani nephrology nurses **Sedgewick** 159 Shared outcomes - health care assistants and haemo-dialysis nurses **MacDonald**
15:30	**Tea**	**Tea**	**Tea**	**Tea**	**Tea**

A N N U A L G E N E R A L M E E T I N G

16:00

EDTNA/ERCA

ANNUAL GENERAL MEETING

2001

Chair: Nicola Thomas, EDTNA/ERCA President

Agenda

Welcome by the President and Appointment of Scrutineers
Approval of the 2000 AGM Minutes
Presidents Activities and Progress Report
Approval of 2000 Financial Report
Results of Executive Committee Votes
Introduction of new Executive Committee
Education and Research Board Activities – Professional Development Task Force
Lifetime and Honorary Members
Association Objectives 2001
Future Conferences
Introduction to The Hague Conference 2002
Any other Business
Date and Venue for next AGM

Scientific Programme
Monday, 24 September 2001

	Apollon Translation	Athena Translation	Clio/Thalie	Hermès	Erato
9:00	**International Forum** *Chair: Nicola Thomas* *Rob Mutsaers* EDTNA/ERCA European Practice database **Jean-Yves de Vos** **Gerard Boekhoff** **Birsen Yürügen** **Jean-Pierre van Waeleghem** **Mirjana Calic**	CORPORATE EDUCATION SESSION **GAMBRO** Quality Dialysis: Self care dialysis at home. *Chair: M.C. Casal Garcia* Randi Ipsen Sweden Tony Goovaerts, Belgium Menno Kooistra, The Netherlands Ingrid Ledebo, Sweden	**Research and Development Session 1** *Chair: Maurice Harrington* *Christa Tast* Research Programme update **Liz Lindley** Peritoneal Access – techniques and problems **Ram Gokal** The CRP Post-Insertion Catheter Care Project **Monique Elseviers**	**Audit and Standards** Audit – using Standards in Practice **Iris Santala (FL)** *Chair: Ulla Winge* *Hedwig Maud Celosse* 163 Using clinical audit to reduce the incidence of automated peritoneal dialysis peritonitis **Mallinder** 207 Serum albumin in dialysis patients is method-dependent: BCG overestimates and BCP underestimates **Ten Brinke** 72 Effect of integrated education on nurses' knowledge about haemodialysis vascular access **Gelmez**	Business Meeting **SIG Transplantation** *Chair: Aase Riemann*
10:30	**Coffee**	**Coffee**	**Coffee**	**Coffee**	**Coffee**

	Apollon Translation	Athena Translation	Clio/Thalie	Hermès	Erato
11:00	**Quality of Life** The importance of exercise in End Stage Renal Failure **Patricia PAINTER (USA)** *Chair: Gemma Bircher* *Marie Williams* 177 Improvement in quality of life of dialysis patients during a 6 month period of aerobic exercise training **Pugh-Clarke** 64 Hydrochinesiology and the nephropathic patient **Zancani** 21 Exercise: Pep up your Life **Goh**	**Diabetes** Care of the patient with Diabetic Nephropathy in Haemodialysis **Johan VANUYTSEL (B)** *Chair: Paul Van Malderen* *Vedrana Zugic* 44 A study of diabetic patients' responses to glucose containing dialysate versus glucose free dialysate **Doutsiou** 19 Different reaction of fluid shifts in haemodialysis between diabetic and non-diabetic patients **Nenaydenko** 166 The role of the renal diabetes nurse specialist (RDNS), a luxury or an essential player? **Marchant**	**Research and Development Session 2** Hepatitis C – Epidemiology, prevention and treatment **Dr Michel JADOUL (B)** *Chair: Georgia Thanasa* *Lizzi Lindley* Management of Hepatitis C in US, Europe and Japan Isolation and Seroconversion in Spain **Anna Marti i Monros** The CRP Project on Epidemiology of Hepatitis C **Heather Jayasekera and Alessandra Zampieron**	Oral/Poster Presentations (2) **Peritoneal Dialysis** *Chair: Alois Gorke* *Franz Techert* 67 Factors influencing the development of hypervolemia in CAPD patients **Albaz** 73 PET performance in automated peritoneal dialysis **Kaya** 124 Phosphorus circadian rhythm in peritoneal dialysis **Reyero-Lopez** 104 Continuing PD after herniotomy (HT) **Tast** 75 Multiple frequency bio-impedance analysis in peritoneal dialysis patients **Kirikci** 79 A new methodological approach in rapid diagnosis of peritonitis in continuous ambulatory PD patients **Sanlidag**	**Patient Centred Care** *Chair: Hedwig Maud* *Celosse* *Birsen Yürügen* 1 Patients already started on dialysis treatment profit by education **Lückerath** 16 The first step from dependence to independence **Imtanes** 83 The evaluation and comparison of awareness in patients undergoing haemodialysis and CAPD **Yildirim** 96 The results of our 5 year experience in pre and post-transplant education **Calic** 141 A research study examining haemodialysis patients' views on their desire to be involved **Forman** 12 Bridging the Gap **Barrie**
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	L U N C H				

Scientific Programme
Monday, 24 September 2001

	Apollon Translation	Athena Translation	Clio/Thalie	Hermès	Erato
14:00	**Vascular Access** Vascular Access: The role of the Radiologists **Dr. Julio PALMERO DACRUZ (ES)** *Chair: Anna Marti i Monros, Katarina Hemminger* 191 The role of the nurse in vascular access **Waterhouse** 27 Routine monitoring of vascular access for haemo-dialysis using a dilution ultra-sound technique **Geminard** 28 The vascular permanent abords in chronic haemo-dialysis patients and their complications **Ghazouani**	CORPORATE EDUCATION SESSION **BAXTER** Playing your role... A planned start within an Integrated Care approach *Chair: Doris Bahnmüller*	**Quality of Care** The diversities and needs of the Asian renal population **Harvinder DULKU (UK)** *Chair: M.A. Alonso Perez, Hans Kamps* 26 Immediate and delayed memory recall patterns of chronic haemodialyis adult Hispanic patients **Harum** 184 Nurse practitioner clinics: a new development in the renal transplant department **Smith** 155 Simply donors - continuing the care **Jenkins**	**Technical Workshop** **Quality of Water** EDTNA/ERCA Guidelines for the use of Carbon filters in the Preparation of water for Haemodialysis **Ian MORGAN (UK)** *Chair: Lizzi Lindley, Monique Elseviers* 107 The influence of bacteriae in dialysis water and the level of pyrogens **Traeger** 205 Chemical additives in new R.O. systems **Gietman** 102 Routine disinfecting of the total dialysis fluid system - methods and results **Gorke**	Business Meeting **SIG Social Workers** *Chair: Richard Dingwall*
15:30	**Tea**	**Tea**	**Tea**	**Tea**	**Tea**

	Apollon Translation	Athena Translation	Clio/Thalie	Hermès	Erato
16:00	**Peritoneal Dialysis** PD – current problems and future developments **Dr. Ram GOKAL (UK)** *Chair: Gemma Bircher, Jef Struyven* 60 Compliance in automated peritoneal dialysis (APD) **Rivetti** 82 Efficacy and tolerance of increased fill volume in our patients **Yardim** 66 Causes of Late Leaks in Peritoneal Dialysis Patients **Albaz**	**Quality of Life** Future developments: Renal replacement in France **Didier BORNICHE (F)** *Chair: Rainer Bühler, Luc Vonckx* 20 Daily Haemodialysis: Fit for Life **Goh** 63 Patient Flow Analysis (PFA) and referrals: how 1150 ESRD patients started dialy-sis during 1998-1999 **Paris** 110 Evaluation of the blood recirculation in catheters for haemodialysis and its relation with blood circuit pressions **Crespo**	**Nurse Education** Continuing nursing education: Future prospective **Dr. Panos ZIROYANNIS (GR)** *Chair: Lynn Denning, Anastasia Laskari* 183 Innovation in nephrology nursing education in the Middle East **Sedgewick** 161 A collaborative approach to education **Mahon** 181 Integrated educational programme to support renal high dependency care **Robinson**	**Quality of Life and Social Care** *Chair: Deirdre Cunningham, Sanja Premate-Halilovic* 2 Living on dialysis: the client discourse in the renal context **Polaschek** 169 Research into older dialysis patients' experience of care **Meyer** 188 Establishing the role of renal counsellor in response to patient demand **Tibbles** 8 Perceived Health, Self-Management and Social Support of Dialysis Patients **Toljamo** 208 Changes in employment status during the first year of dialysis treatment and its determinants **Houweling** 89 Subjective and objective evaluation of quality of life (QOL) in patients treated by peritoneal dialysis **Nermutova**	Oral/Poster Presentations (3) **Education** *Chair: Alois Gorke, Ray Trevitt* 13 Parachutists - Out of the blue **Dahan** 156 Pregnancy and haemo-dialysis - a case study **Campbell** 62 Residual Renal Function: Its influence on different parameters of Renal Replace-ment Treatment **Taratufolo** 150 Hand decontamination: what interventions improve compliance **Hinkin** 174 Adapting practice to manage an increasing disabled and frail elderly clientele in our haemodialysis unit **Noble** 153 Pre-dialysis anaemia management programme - resource utilisation and clinical outcomes **Jarvis** 210 Research priorities for nursing in a dialysis centre **Litjens** 40 How to optimise efficacy of regular on-lin haemo-diafiltration **Van Malderen**

Scientific Programme
Tuesday, 25 September 2001

	Apollon Translation	Athena Translation	Clio/Thalie	Hermès	Erato
9:00	**Haemodialysis** Diet or dialysis in the elderly **Dr. Giullano BRUNORI (IT)** *Chair:* *Althea Mahon* *Alessandra Zampieron* 43 Haemodialysis in the elderly **Christopoulou** 41 The dialysis diet and fluid non-compliance questionnaire (DDFQ) **Vlaminck** 112 Psychological involvement of the nurses in front of a terminally sick haemodialysis patient **De Miguel Sanchez**	CORPORATE EDUCATION SESSION **FRESENIUS MEDICAL CARE** How to improve dialysis therapy: Recent technological developments *Chair: Rob Mutsaers* The importance of dialysis membranes on filter performance, biocompatibility and safety; new developments. **S K Bowry** One year clinical experiences with the new class ofdialysers: conditions andhandling aspects duringhaemodiafiltration (HDF). **F Techert** High-efficiency treatment modalities: technical requirements for modern high-flux dialysis andhaemodiafiltration. **Th Roy** Variations of dialysis dose and dialylsis dose optimationby on-line clearance measurement (OCM) at each dialysis treatment: experiences of a dialysis centre. **Th Weinreich**	**Quality of Care** Quality of Care: The variations between dialysis units **Jeannette VAN MANEN (NL)** *Chair: Aase Riemann* *Judith Hurst* 206 Quality control in dialysis **Voss** 186 Do demographic variables affect the timing of referral to the nephrologist? **Steel** 137 Inequalities in health: a comparative analysis of the impact of health care systems in Germany and the U.K. **Bühler**	**Pre-Dialysis Education** A workshop to discuss the value of predialysis education. - **Juliet AUER** - **Richard DINGWALL**	**Taetstheater** *Chair: Marion Lammers* Come and relieve your stress by joining us!
10:30	**Coffee**	**Coffee**	**Coffee**	**Coffee**	**Coffee**

	Apollon Translation	Athena Translation	Clio/Thalie	Hermès	Erato
11:00	**Quality and Economics** Quality management systems **Dr. Klaus Peter MUTHIG (D)** *Chair: Christa Tast* *M.A. Alonso Perez* 57 In vitro comparison between GIT (Glucose Infusion Test) and Transonic device **De Vincenzi** 38 Trisodium Citrate 5% vs. Heparin 5000 IU/ml lock in permanent dialysis catheters:a comparative study **Van Brussel** 108 Home training experience in peritoneal dialysis patients **Castro Notario**	**Paediatric and advanced dialysis techniques** Continuous haemofiltration and plasmaphoresis in newborns and infants **Dr. Rafael PONIKVAR (SL)** *Chair: M.C. Casal Garcia* *Jitka Pancírová* 39 Treatment of critically ill patients in intensive care with slow, low efficiency on-line haemodiafiltration **Van Malderen** 15 Pity **Gabay** 30 Continuous Renal Replacement Therapies **Martins Moreira**	**Staff Support** Support and development of nursing managers in hospital wards **Zehava GAVISH (IL)** *Chair: Nicola Thomas* *Elisheva Milo* 157 Recruitment and retention of registered staff in renal units - do practice development nurses have an impact? **Jones** 37 Setting of standards in haemodialysis care: the peer review experience **Theelen** 160 An international link to developing nursing practice in Egypt, using action learning **MacDonald**	Oral/Poster Presentations (4) **Quality of Life** *Chair: Alois Gorke* *Lynn Denning* 220 Project concerning the psychological nursing in a haemodialysis department **Roesen/Larsen** 209 Social work should be outreaching **Vos** 7 Coping Mechanisms and Quality of Life of Dialysis Patients **Timonen** 195 Chronic renal failure, paternalism and the law **Woodcock** 148 Illness - a family affair. A systematic approach to understanding and caring for patients with chronic renal failure **Harvey** 14 The correction of anaemia by EPO and IV iron in octogenarians with CRF and CHF improves both conditions **Dov** 117 Acute haemolysis in haemodialysis: a problem not to be forgotten **Moret Gil**	Business Meeting **SIG Dietitians** *Chair: Gavin James* *Helena Jackson*
12:30	**Lunch**	**Lunch**	**Lunch**	**Lunch**	**Lunch**

Scientific Programme
Tuesday, 25 September 2001

	Apollon Translation	Athena Translation	Clio/Thalie	Hermès	Erato
14:00 (NB 1 hour only)	**Infection Control** Viral Hepatitis: The implications for the Renal Patient **Dr. Denis OUZAN (FR) and Dr. Monique CHANAS (FR)** *Chair: Maurice Harrington, Dominique Nègre* 32 Hepatitis B vaccination, Engerix B or HB Vax II, 3 years of comparative study **De Clerck** 93 The role of a satellite dialysis centre in Hepatitis B and C prevention **Kovarikova**	**Advanced Practice** The importance of drugs in renal care **Tim GARRETT (UK)** *Chair: Maria Saraiva, António Filipe Cristóvão* 129 Managing changes in responsibility for prescribing specialist medicines **Barnes** 135 An evaluation of pharmacist recommendations on patient outcomes in a CAPD clinic **Brady**	Nutrition Workshop *Chair: Marianne Vennegoor, Christa Nagel* 158 The effect of peritoneal protein losses upon nutritional status in CAPD patients **Kalra** 17 KT/V and quality-of-life improvement to dialysis patients with obesity **Khatib** 170 The use of a blood volume monitor to detect inadequately high dry weight **Morgan**	**Anaemia** *Chair: Tony Gooverts, Ursula Elfrich* 176 A study of factors affecting anaemia one year post renal transplant **Perrin** 61 Anaemia correction in uremic patients on Regular Dialytic Treatment **Taratufolo** 103 Bloodloss in haemodialysis (HD) patients (pts) is equal to loss of iron: aspects of measurement **Gorke**	Oral/Poster Presentations (5) **Staff Issues** *Chair: Ronald Visser, John Sedgewick* 142 Professional recognition for renal technicians in the 21st century **Forrest** 168 Can dialysis assistants replace nurses: results of a national survey **McManus** 196 Trainee NVQ level III staff's experiences on a haemodialysis unit **Woods** 101 The development of evaluation criteria for new staff in haemodialysis **Bahnmüller** 154 In-service access to innovative clinical support and academic supervision - evaluation of the effects on staff **Jayasekera**

15.10 Finish 16.00

C L O S I N G C E R E M O N Y

CLOSING CEREMONY

Patient-centred care: the growing challenge

Dr. Jean GUILLAUD (FR)

The Patient's Perspective

Presentation of Manuscript and Poster Scholarships

Care of the patient with diabetic nephropathy in haemodialysis

Dr Johan Vanuytsel, Ronse, Belgium.

As compared with non-diabetic patients, management of the patient with diabetic nephropathy (DN) in haemodialysis is substantially different. Some specific problems are not always well recognised by the medical and nursing staff, leaving the patient in discomfort.
Hypotension during haemodialysis is more prevalent in patients with DN (ischaemic heart disease, diabetic cardiomyopathy, autonomic diabetic neuropathy, hypoalbuminaemia...). Interdialytic weight gain is higher in this group of patients (glycaemic control, restdiuresis ...). More patients with DN continue to require antihypertensive medications (disturbed reaction of the renin-angiotensin-aldosteron system).
Almost all patients with DN have retinopathy: optimal blood pressure control and caution with anticoagulant therapies is warranted.
Dietary requirements are different and malnutrition often present. Low bone turnover afflicts in patients with DN and aluminum-containing phosphate binders should not be given to these patients.
Problems with vascular access occur more often: e.g. steal syndrome, ischaemic mononeuropathies.
Concerning peripheral vascular disease, prevention and education are crucial.
Some patients become invalids because of peripheral (sensorimotor) neuropathy. Autonomic neuropathy expressed as gastropathy, cystopathy, and orthostatic hypotension, is a frequently overlooked highly prevalent disorder impeding life quality in the diabetic.
All these complications can give way to coping failure and psychosocial problems.
Mechanisms leading to these specific complications will be discussed briefly, as well as possible treatment strategies. Better understanding of potential problems can lead to better awareness and recognition, better management of the patient with DN in haemodialysis and improved patient comfort.

Continuing nursing education: future prospective

Panos N. Ziroyanis,
Department of Nephrology, State General Hospital of Athens, Greece.

Continuing education (CE) is a moral obligation of the nurses and the doctors to constantly update their knowledge, This procedure starts with their graduation and lasts for a lifetime. Education as a function of the CE, refers to self-education rather than continuing instruction.
Our time is known for its great social and economical changes, which are due to the emerging development of technology and information science.
The increasing dominance of technology has influenced people's lives in all the western world. Its use affects the practice of medicine and nursing as well as the parameters that determine the nurse - patient relationship. We therefore find ourselves today before a new order, with an unknown outcome, concerning the future of medicine, of doctors and nurses.
During recent years, medical care, within the so called "modern" health systems, is being judged as insufficient. This fact has been troubling the public organizations as well as society itself. Within this frame of reference, new means of covering the basic needs for provided medical care have been developed, such as the education of nurses and doctors, according to current social demands and based on the holistic approach to the patient.
Today, many different organizations from all over the world acknowledge that CE can't keep up with the new doctor - nursing problems of the society. As a result, CE doesn't cover the medical needs of the population.
The basic issues which concern Medicine and Nursing are the following:

1) What kind of problems will doctors and nurses have to face in the foreseeable future.?
2) What is their duty towards society?
3) Does their education live up to the requirements of their new working conditions?

The nurse is challenged to respond to this evolution and comply with the demands of CE.

The diversities and needs of the Asian renal population

Harvinder Kaur Dulku,
Hammersmith Hospital NHS Trust, London, United Kingdom.

For many patients with chronic renal failure, renal transplantation is the best treatment option potentially improving their life expectancy and quality. In general there are four times more people waiting for a kidney than there are organs donated. However the situation Is much worse for members of the ethnic minorities. In the United Kingdom only 11% of patients receiving a cadaveric kidney transplant were from the ethnic minorities, although these groups currently represent 35% of patients on the transplant list.
There were around 6,284 people in the year 2000 waiting for a kidney. 1,487 received a cadaveric transplant and 336 received live donor transplants. Over 90% kidneys donated came from the Caucasians. In Hammersmith Hospital NHS Trust, there are currently 257 patients on the kidney transplant list of whom 52% are from the Asian and Afro-Caribbean communities.
In 1995 a renal transplant liaison nurse post was established to increase knowledge and awareness of transplantation in the Asian community with the hope that this might increase cadaveric and live donation. The awareness campaign is done through the local English, Asian papers/magazines, Asian press groups, radio, T.V, G.P surgeries and practice nurses, schools, Asian organisations and associations, temples (Hindu and Sikh), Mosques.
In conclusion an intensive personalised programme to encourage live donation has identified appropriate donors for the Asian chronic renal failure patients. Data correlated from outcomes of the awareness campaign will assist in the long-term goals.

Advance directives: is it really the patient's choice?

Sue Perrin,
Institute of Nephrology and Transplantation, Manchester, United Kingdom.

Over the last few years there have been positive moves to give patients more control in the management of their renal disease. Difficulties can arise when the wishes of the patient are not considered to be in their best interests for example, if they decide to opt for the 'no treatment' choice. They may also choose to write an advance directive, which some staff may have difficulty complying with.
The purpose of this paper is to examine some of the complex issues surrounding advance directives. To look at the legal and ethical implications created by such directives. This will be achieved by examining case law; including advice given by professional bodies such as the BMA (British Medical Association) and the UKCC (United Kingdom Central Council). It will also discuss how much choice patients have in making end of life decisions.
All members of staff need to know how to act in accordance with the wishes of the patient, even if those wishes conflict with what staff perceive to be in the patient's best interests. Guidelines are required to help in these situations such as those already devised by some Health Authority Trusts. Clear communication must take place between all staff caring for the patient and their relatives.
Dealing with end of life decisions is difficult for patients and their families. The wishes of the patients must be respected. A forum of openness must be encouraged to allow staff and patients to voice both their wishes and concerns.

Assessing nutritional status: shared responsibility

Crista Nagel, Dialyse Centrum Groningen, The Netherlands.

Malnutrition is a very common thing amongst dialysis patients inducing a higher comorbidity and mortality. Loss of appetite, uremic symptoms, dialysis itself as a catabolic factor and the fluid sodium and potassium restrictions in the diet are some examples that often contribute to a suboptimal nutritional intake. Dietary intervention may help dialysis patients to get a better nutritional status. But dietitians are not in all European countries part of the renal team, one of the conclusions of the research of the Dietary Advice Project of the EDTNA's Research Board. European Nutritional Guidelines are available right now and will help the renal staff how to take care of patients in order to prevent them from getting malnurished.

But even if you have a renal team that includes a dietitian there will still be patients that are at risk for getting malnurished. Dietitians who have a large number of patients or who are working in more units than in renal will not always be able to recognise patients at risk in time. It is important that every member of the renal team is aware of the importance of a good nutritional status of the patients. Other members of the staff in the renal unit can help detect patients who are at risk for getting malnurished by using checklists, protocols, graphics, SGA-scores, computer programmes and internal guidelines, If every single member of the renal team is alert to any change in weight and/or food intake and refers the patient to the dietitian, the patient will benefit of it.

The importance of renal drugs

Tim Garrett
Kings College Hospital, London, United Kingdom.

Renal patients present a particular pharmaceutical challenge. This is due to a number of factors including the large number of medications prescribed to this patient group in addition to alterations in drug pharmacokinetics. These issues represent a clear financial burden and also confer a higher risk of drug related problems including drug related admissions compared with other populations.

The considerable variety in drug treatments prescribed to our patients is reflected in their information needs. These range from prospective counselling for patients approaching end stage renal failure to the management of chronic renal failure and transplant recipients.

Essentially we face an extensively diverse range of treatments for a population often with a number of co-morbidities, each of which with its own drug management strategies, It is therefore hardly surprising that this ever-increasing number of prescribed medications in addition to strict dietary and fluid restrictions contributes to patients becoming confused and disillusioned with drug therapy resulting in widespread non-adherence.

The value of regular review of a patient's medication, has been clearly described and is of obvious importance to renal patients. Regular review not only offers financial advantages but has also been shown to decrease the risk for drug related problems.

It is the responsibility of all health care professionals to not only undertake regular review of our patient's medication as a specific priority, but also to simplify regimens to fit into patient's lifestyles and provide clear and consistent information that is easily understood. Perhaps by developing this approach we can improve compliance and associated biochemical and therapeutic responses.

Hepatitis C – epidemiology, prevention and treatment

Prof. M. Jadoul, M.D., Department of Nephrology., Cliniques Universitaires St. Luc, Université catholique de Louvain, Brussels, Belgium.

The epidemiology of hepatitis C virus (HCV) infection in haemodialysis (HD) has changed substantially over the last decade. We recently compared, in HD units from 9 EDTA countries (1-14 units per country) the 1991-1994 prevalence with the 1999 prevalence in the same units. The prevalence of anti-HCV (+) dropped from 17.9 to 12.5 % ($p<0.001$). This likely reflects the lower incidence of seroconversion in recent years, presumably due to both blood donors screening and better prevention of nosocomial transmission. Still, the prevalence of anti-HCV (+) in patients (re)starting dialysis in 1998 in the same units reached 3,7 %. Thus, HCV will persist in HD units for decades.

Seroconversions for HCV still do occur in HD units, mainly dare to nosocomial transmission. The epidemiological evidence as well as molecular virology reports point to a major role for contaminated hands and shared articles as vectors of HCV. The role of the internal contamination of haemodialysis monitors appears less important. A recent study has demonstrated that understaffing of HD units increases the risk of seroconversion, most likely as a result of poorer hygienic precautions. The lively debate on the isolation of anti-HCV (+) HD patients is still ongoing. The author believes that the potential drawbacks of isolation exceed the benefits.

Therapeutic regimens for HCV infected non-uremic patients have improved recently, the combination of interferon-α and ribavirin is significantly more effective than interferon-α alone. Unfortunately, standard ribavirin regimens cause severe anaemia in HD patients, thus further pharmacokinetic studies are needed in HD patients. Whether. modified Interferon-α (e.g. pegylated interferon) is more effective in hepatitis C is currently investigated.

Guidelines for the use of carbon filters in the preparation of water for haemodialysis

Jan Morgan, Chair of the European Dialysis and Transplant Nurses Association/ European Renal Care Association (EDTNA/ERCA), Technicians Special Interest Group.

The EDTNA/ERCA Collaborative Research Programme highlighted the need for Water Treatment guidelines[1]. At the 2000 EDTNA/ERCA Annual Conference it was proposed to extend the scope beyond microbiology to other aspects of water quality, and that the control of Chlorine and Chloramine should the next topic for guidelines.

Chlorine and Chloramine are oxidising compounds that are added to municipal water supplies as disinfecting agents, Their presence has been linked with acute haemolysis[2] as well as resistance to erythropoetin[3], in haemodialysis patients. Filtration with activated carbon has been a long established method of removal.

The aim of these guidelines (currently in draft form) is to draw upon current data and provide practical advice for renal staff when designing and monitoring water treatment systems. The guidelines cover granular activated carbon filter beds as well as disposable cartridge filters. They include advice on choosing carbon material, contact time, and testing for chlorine levels. This should allow the user to achieve the European Pharmacopoeia limit for total chlorine, which is currently not more than 0,1 milligrams/litre[4].

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3) S Fluck, W McKane, T Cairns, V Fairchild, A Lawrence, J Lee, D Murrey. M Polpitiye, A Palmer & D Taube, Chloramine-induced. haemolysis presenting as erythropoietin resistance- Nephrol Dial Transplant, 1999 Jul-5 14(7):1687-97.
4) Monograph 1167:1997 (corrected 2000) Haemodialysis solutions, concentrated, water for dilution. European Pharmacopoeia Supplement 2001.

Practical use of physio dialysis

Hospal

Symptomatic intradialytic hypotension greatly contributes to overall patient morbidity and not only limits fluid removal during dialysis session but also increases the need for nurse interventions.
Several therapeutic procedures have been employed to treat intradialytic hypotension (bicarbonate dialysate, sodium modelling, dialysate temperature, ...). Physio dialysis uses automatic control of intradialytic blood volume as a biofeedback system, offering the possibility to monitor some physiological parameters. This is achieved by the variation of UF rate and dialysate conductivity in response to the intradialytic changes in blood volume.
Three nurses from Germany, The Netherlands and Sweden will present their experience mainly focused on the practical use: who takes the decision to treat the patient with a biofeedback therapy? How do they define the prescription? What are the concrete actions to correct alarms? Finally they will discuss the positive impact on patient well-being using a biofeedback therapy and obviously the practical benefits for the nurses.

Improving the nurse-patient relationship: a multi-faceted approach

F. Hoffmann-La Roche

Aim: The Corporate Education Session will provide practical strategies for overcoming several specific barriers in nurses' daily relationships with patients (e.g. aggression, depression, controlling behaviours). The session will provide the latest information about best practice – as it affects nurses – in dialysis care. New case studies and strategies will be presented.
Methodology: The session will be led by a moderator, who will present two video case studies covering various patient-nurse communication issues in renal disease patients. One case study will address problems associated with an elderly, recently diagnosed chronic renal insufficiency patient, who is distressed by her new condition and has strong beliefs regarding the way she would like to lead her life. The other case study deals with an aggressive and frustrated haemodialysis patient who suffers from complications of the primary cause of his renal disease, diabetes mellitus. Communication strategies for recognising and overcoming such nurse-patient communication barriers will be discussed. The audience will be asked to express their views about various aspects of each case study using voting pads, and a panel of nurses and nephrologists will address the comments of the audience. The latest developments in renal disease will be discussed, with special consideration given to predialysis patients and patients with diabetic nephropathy. The European Best Practice Guidelines, as related to the dialysis nurse, will be considered, and the nurses on the panel will recount their experiences and advice for putting strategies into practice.
Conclusions: Optimal treatment of patients with renal disease should include early identification of the disease and treatment of associated co-morbidities. Early treatment of anaemia and other modifiable risk factors, adequate levels of dialysis, and a multidisciplinary approach, responding to both the medical and the social needs of the patient are needed.

Achieving excellence in patient outcomes-meeting the challenges

Amgen

Modern renal practice is increasingly aided by the development of clinical practice guidelines based on evidence from large international studies and clinical trial programs. Clinical practice guidelines provide a basis for the optimization of renal care, and have the potential to improve the treatment and outcomes for patients with chronic renal failure worldwide. Participants of this precongress workshop will learn the importance of evaluating the current care and movement towards optimal outcomes through the use of best practice guidelines.

Improving patient outcomes in chronic kidney disease

Amgen

The optimization of renal care includes the establishment of clinical practice guidelines and the development of new therapies for the treatment of patients with chronic kidney disease. Darbepoetin alfa has been designed and developed to treat anemia, such as that which occurs in patients with chronic renal failure. Clinical trials suggest that darbepoetin alfa is as effective as the available recombinant human erythropoietins, and allows less frequent administration. This session will summarize recent international renal care initiatives and describe the success and patient benefits in the clinical use of darbepoetin alfa.

Playing your role... a "planned start" within an integrated care approach

Baxter

Surprisingly, data shows that many pre-ESRD patients are known to their clinic, yet they still start dialysis treatment with an acute access. Still today, 1 in 3 ESRD patients is a late referral. This session proposes a highly innovative look at the importance of the nurse's role during the pre-dialysis stage. It aims to motivate and to help you look into the practices at your own centre.
This session will take you away from the traditional slide presentation format allowing you to experience a unique performance, given by professional actors. The sketches spotlight the importance of helping patients to receive a planned start to dialysis. This means allowing enough time for the patient to adjust to the impact of renal failure, to receive therapy education and to receive a permanent access. This is an educational, theatrical experience that is refreshingly different.

How to improve dialysis therapy: Recent technological developments

Fresenius Medical Care

A number of approaches are available to improve the dialysis treatment provided to patients with kidney failure. While the effects of aspects such as the length of the dialysis session, blood and dialysis flow rates, time of referral of patient to dialysis, different treatment modalities (e.g. HDF) etc have been well-documented in relation to dialysis therapy improvement, the benefits of technological improvements are not well recognised.This session deals with recently-developed technological approaches to further improve dialysis therapies - covering several features of the entire treatment procedure.The methodology for this concept includes, firstly, the improvement of dialyser performance through a combination of a new membrane development and innovative dialyser design-related features. Thereafter, the practical advantages and clinical benefits of the new developments will be presented followed by a review of the efficacy of high flux dialysis and haemodiafiltration and the technical refinements that are associated with these treatment modes. Finally, the features and advantages of a specific online tool that enables the physician to monitor the effectiveness of dialysis will be described.
Conclusions: The session is intended to provide insight into the efforts and technical advances being made to ensure a better quality of life is achieved for patients on end-stage renal disease.

Quality dialysis – Self-care at home

Gambro

It seems evident that an increased dose of dialysis means better patient outcome. At the same time, the lack of capacity to treat new patients and shortage of trained staff is becoming an increasing problem in dialysis units around the world. This may in turn have an impact on treatment quality. Home-based self-care dialysis opens up possibilities for improved forms of therapy with extended treatment time and frequency, which are more difficult to realize in a center setting. When used with care, self-care dialysis usually leads to better outcome than center dialysis. In addition, utilization of self-care dialysis, be it with either PD or HD, carry a minimum of the cost for staff and overhead. Therefore, it appears desirable for both patients and society to revive and extend the use of home-based self-care dialysis. But how can this be done and what is required to make this an attractive alternative to both patients and dialysis professionals?

Learning objectives
The aim of this session is to provide the current level of knowledge on the various forms of self-care dialysis and to answer questions like:
– What are the reasons for the limited utilization of self-care dialysis?
– What are the main obstacles to implement a self-care dialysis program?
– How many papients would actually be able to benefit from self-care dialysis
and is self-care dialysis a feasible option for the future?

Fluid – the right amount? 001

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Problem: Fluid Overload in ESRD patients on dialysis.
Purpose: To educate both existing and new ESRD patients, family and friends about the importance of fluid balance.
Design: By taking a multi-disciplinary team approach to the problem educational material and teaching aids were agreed and introduced. A pictorial leaflet showing the 'risk of constant fluid overload' has been produced including helpful hints. For patients 1/2 Ltr water jugs, smaller drinking glasses and a poster for each bed area depicting fluid balance. Eventually the aim would be to produce a fluid pack for each patient to be given out when on dialysis.
Findings: Quarterly audit reports have shown an improvement in fluid balance both among new and existing patients.
Conclusion: Early evaluation suggest that following implementation dialysis patients understanding and compliance have been improved. A small number of patients continually are non-compliant with fluid balance and need regular reinforcement and education. This is ongoing for all the members of the multi-disciplinary team and is to be regularly audited and updated.
Relevance: Gross fluid overload in dialysis patients leading to respiratory and cardiac complications is a continuing problem in renal units. We decided to take a multi-disciplinary approach to tackle this longstanding issue of educating patients regarding fluid balance.

A collaborative approach to education 161

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With the current economic constraints found in NHS teaching hospitals, it is necessary for creative and innovative strategies for staff development and education to be established. In an effort to provide development programmes to both novice and more experienced nephrology nurses, we have undertaken to provide combined teaching programmes between two of the largest renal units in London.
The outcome of this collaborative approach has been to establish stronger links with each other and to maximise the impact of our two Practice Development Teams. By offering joint programmes, we have not only provided education in a more cost effective manner, but we have also been able to strengthen the relationship between the two nephrology units. Our staff members have benefited from sharing experiences with their colleagues in the other hospital and from exposure to a greater variety of speakers.
The content of this presentation will include an outline of the implementation of this strategy, programmes for novice and experienced nephrology nurses, evaluations completed by the participants and a brief analysis of the cost-saving realised as a result of this joint initiative.
Although this initiative is relatively recent, we hope that it will be just the beginning of many more shared projects.

An international link to developing nursing practice in Egypt, using action learning 160

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In 1996 the Faculty of Health signed a memorandum of co-operation with an Egyptian Hospital. The purpose of the link was to explore and facilitate opportunities for change and development in nursing practice, with a specific focus on education, quality, standards and the image of nursing in hospital settings. The first of three annual visits to the haemodialysis unit took place in 1998 and aimed to:

- review current nursing practice in the dialysis unit
- assess clinical nursing standards, guidelines and procedures used
- explore the feasibility of a renal course led by the renal nurses.

The first visit revealed a paucity of standards, procedures, or nursing documentation of any kind, apart from the haemodialysis treatment sheet. The nurses appeared to have the underpinning theoretical knowledge but had been unable to apply this in the clinical arena. To the nursing staff, a greater financial input to the dialysis unit appeared to be the only solution. However basic and essential nursing standards had been neglected and the focus of what nursing brought to the patients experience of health care, had been lost.
An action learning approach helped to develope and design record sheets for nursing assessment and care. By piloting these and redesigning them the essence of nursing care began to be more clearly defmed. The emphasis in care delivery graduated away from dialysis management and moved to holistic patient centered care. By the third visit the nurses confidence in their professional work had led them to design a short renal course to offer to other units in the city.

Shared outcomes – health care assistants and haemodialysis nurses 159

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In 1999 an initiative to manage the reconfiguration of renal services across a conurbation undertook an audit of current opportunities in renal education and research. Results were circulated with proposed recommendations and comments received were collated in the final document. Two recommendations were made:

- A foundations haemodialysis module offered to all new haemodialysis nursing staff across three main dialysis centres and six satellite services.
- To provide and co-ordinate the NVQ Level 3 Dialysis support worker, to unqualified staff.

The Education and Training Consortia founded this initiative, with the appointment of three 0.5 wte education practitioners in the clinical areas. In attempting to address both these recommendations, concerns were raised that the haemodialysis module was not accredited and had no formal recognition outside of the renal units in which it functioned. It became apparent that the main aim was to produce a skilled workforce with basic but essential skills in dialysis management and patient care. The underpinning knowledge and competency skills both groups of staff required were indeed the same. Therefore it was decided to place both groups of staff through the nationally recognised course and offer a shared learning approach to all staff across the region. A regular 6-week programme was offered, as was ongoing support to collate evidence. The presentation will share the evaluation of this programme and the change in culture brought about with shared learning between two groups of professionals.

Patients already on dialysis treatment profit by education – and are much better motivated to take part 001

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Patients in the stage of pre-ESRD often refuse to take part in educational programmes. To reach these patients, we started a 10 hours education programme for those in their first 6 months of treatment.
Aim of the present study is to demonstrate the relationship between improvement of the patients' knowledge and their weight gain, laboratory findings and the patients' estimated quality of life.
For a period of half a year we compared 19 participants in this programme (=eg) with 12 patients who had not taken part (= cg). We constructed a curriculum as well as education materials and tested the acquired state of knowledge. Laboratory findings - serum potassium, serum phosphate and total protein - were taken for both groups and correlated by Mann-Whitney-U-test. Weight gains were watched and compared by t-test. To check the acceptance of the programme a six-step Likert scaled feedback questionnaire was to be filled in by the participants. All patients had been asked for quality of life by KDQOL.
Outcomes show the benefits of the programme: participating patients had better laboratory findings, were well fed, felt healthier and less stressed. They coped better and were more satisfied with their lives.

The results of our 5 year experience in pre- and posttransplant education 096

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The goal of this article is to present to you our positive experience in pre- and posttransplant planned patient (pt) education. We have been performing transplantations (TXs) in our centre since 1996. We have transplanted kidneys in 408 pts, 284 of which were cadaveric and 124 living related donor TXs. 28 of our transplanted pts are children, the youngest one was 8 and the oldest was 65 years old at the time of the TX. 249 of the transplanted pts were male and 159 female. TX candidates as well as the transplanted pts were involved in our multi aspect education programme. We learned through the process of education itself that thorough planning is necessary to achieve the wanted results. Therefore we designed a protocol of how to conduct an education programme. We begin educating our pts before the start of the substitute therapy. At that particular time we inform our pts about TX as a treatment option; on the tests they will have to do before it and on the positive as well as negative points of the TX. When we place our pts on the WL we educate them about what they can do for themselves to remain suitable for a TX. After the TX we involve them actively in their treatment; teach them about the drugs, their characteristics, side effects and how to avoid them. We involved 155 pts in our education programme, which resulted in lowering of the number of unwanted pregnancies, lowering the PTDM and overweight side effects as well as motivation of pts in regulating their blood pressure.

Effect of integrated education on nurses' knowledge about haemodialysis vascular access 072

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The success of haemodialysis (HD) depends on access to the circulation: preservation of the access site should be a primary goal of patient care. Little research on nursing interventions related to vascular access exists. Access care varies from center to center and there are often no written protocols for guidance. The aims of our study were to measure nurses' knowledge about vascular access, to determine the effect of integrated education on nurses' knowledge, to draw correlations between nurses' knowledge and certain socio-demographic factors, to provide using of the standardized vascular access surveillance techniques in all centers. The study population included 114 HD nurses from different dialysis centers throughout the whole of the country. The study consisted of pretest, education and intervention and then post-test. Chi-square test paired sample t-test, variance test were used for analysis. The fundamental principles of vascular access should be used to help train future dialysis staff members in order to improve the quality of care. We must continue to gain knowledge in this important area through nursing research and education.

The renal nurse and the internet: a new challenge 045

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The internet, this dramatically growing new means of information interchange that forms a new reality, is actually a worldwide network of computers connected to each other.
Two thirds of internet users are found to use the World Wide Web in order to gain information about health issues. At the same breath, thousands of health professionals use the internet to collect information as well as to communicate with each other.
It is therefore an important need and quite a challenge for the renal nurse to learn how to use the internet and its services (www, e-mail, Search Engines, Usenet, Listservs, and Databases). It is through them that the nurses can get information about the latest updates concerning their profession, to communicate with other professionals from all over the world, to ask their questions and get certain answers.
Selectively using some almost random samples of this web information, we came across an awesome plethora of data concerning the renal nursery. It's worth saying that by simply entering the terms "renal nurse" into a famous search engine (http://www.google.com), 47.800 results regarding this sector returned.
Using information in a proper and organized way, renal nurses can advance their profession, the patient's treatment and education as well.
It is now certain that in the recently forthcoming years, the renal nurse who will also be an experienced internet user will be the pioneer in the new age of nursing research.

Is team working approach a reality within the haemodialysis units? 119

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In order to find out working methods of different nephrology nursing groups a questionnaire with 50 questions was developed and circulated to a group of 700 nephrology nurses during a National Congress, we got answers from 557 delegates.
The questionnaire was focused mainly on approach and perceptions regarding team working and tasks developed by registered nurses (RN) and "auxiliary" nurses (AN) within haemodialysis units. From the 557 delegates answering the questionnaire 68,6% were from large public hospitals and 31,2% from private satellite dialysis units, regarding the gender distribution 53,3% were males and 46,7% were females.
The 557 answers have been statistically analysed using the SPSS program, and the following results conclusions were founded:

- 93,4% of RN feel that AN need specific education due to monitors complexity, patients peculiarities and decisions taken.
- 94,2% of RN feel that team work is important although in many cases they have problems when defining it.
- Regarding good atmosphere and dialog between physicians, RN and AN: 71,5% answered yes while 28,5 answered no.
- As foreseen a lot of tasks were found to be done by RN and AN: dialysis connection and disconnection, catheter manipulation and wound care.

From the questionnaire conclusions, and from our experience, we feel that team working should be a must within the Nephrology Department, and more precisely within the dialysis units, where most of the task are performed by different nursing grades.

Patient flow analysis (PFA) and referrals: how 1150 ESRD patients started dialysis during 1998-1999 063

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The purpose of this study is to describe the method of referral, through PFA, of patients that have started dialysis during 1998-1999. PFA is a tool for clarifying the existing pattern of patient inflow. When information about patients is fed into the PFA computer program, the software produces a flowchart distinguishing three different patient categories: 1. Early referral, patients entering the healthcare system long before their first dialysis treatment. 2. Known but acute started patients known to the clinic but unexpectedly lost to follow-up. 3. Unknown and acute started patients late entering the nephrology clinic in acute need of dialysis.
1.150 patients coming from 14 different centers have been evaluated as regard as their referral pattern during the years 1998-1999.
Early referral patients: 53%. Known but acute started patients: 26%. Unknown and acute started patients: 22%.
Started dialysis with acute access: 36%.
As regard as modality choice the eligibility to PD treatment was: early referral:78%. Known but acute started patients: 65.5 %. Unknown and acute started patients: 50%.
The patient who actually started a PD treatment (between the ones considered eligible) was: Early referral: 50%. Known but acute started and unknown : 16%.
Conclusion: An early referral associated to a predialysis educational program gives patients enough time to adapt to the situation and to choose a therapy that suits their lifestyle. This study shows that when patients have been effectively educated, 50% of these choose home therapy (PD).

Integrated educational programme to support renal high dependency care 181

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The renal service within our hospital has since 1998 recognised the need to provide specialist services for patients with acute uraemic emergencies. At this time a 2 bedded renal high dependency area was opened. This area has already expanded to 3 beds and will soon see further expansion to 6 beds. In order to provide the appropriate nursing care to these acutely sick patients we also recognised the need to provide training and development opportunities for our nursing staff.
In 2000 a government led national initiative reported and made recommendations for critical care delivery. These recommendations included training packages which are designed to enhance core skills and competencies and called for integration across hospital services.
The renal service has recently collaborated with all critical care areas across the Trust to provide an intensive competency based training programme for nursing staff. This training course lasted six weeks and included theoretical sessions and clinical placements. Partnerships have been developed across many critical care areas, with the theoretical course content being facilitated by all members of the multi-disciplinary team from a variety of specialist critical care areas. Course assessment included the completion of clinical based competencies, workbooks and the formulation of a course portfolio. This presentation will describe the course content and assessment procedure and discuss the evaluation of the course along with our thoughts for the future training and development of our renal high dependency care nursing staff.

Transition to specialist practice: an ethnographic study of Omani nephrology nurses 182

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Extensive research has documented the role of the specialist nurse and hastended to adopt a Western perspective. No research exists examining the role of the specialist muslim nephrology nurse within the Middle East. This study examined the transition to specialist practice following a programme of specialist preparation in a group of 8 Middle Eastern nephrology nurses. Using a mini-ethnographic design, transition to nephrology nurse was explored. Data was collected over a period of 1-year using critical incident technique, ethnographic interviewing (Spradley 1979) and focus group meetings. Analysis led to the development of 7 themes central to the role of the nephrology nurse, including proving oneself, pathfinder, agents of change, being valued, competence, technical expert and providing cultural care.
This study highlights the significant difficulties faced by these nurses as they attempt to develop and redefine a new professional identity as a nephrology nurse. This study is important in that these nurses are viewed as the pathfinders in developing practice standards and quality care across the country. The research highlights common issues raised in previous western research on role socialisation and professional identity but also unique cultural factors which impact upon their initial transition to their role. The growth of nephrology nursing within the Middle East is gathering momentum and the central role of the muslim nephrology nurse in providing care to their own patient group will significantly shape the quality of nephrology care in the Middle East.

Innovation in nephrology nursing education in the Middle East

183

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The incidence of ESRD within the Middle East continues to grow with over 50% of patients having ESRD due to diabetes mellitus or hypertension. Since the development of renal services in 1983 1300 patients have been treated. Twelve dialysis centres exist serving a patient population of approximately 410 dialysis patients. In 1996 the Gulf Cooperation Council recommended the development of specialisation in nursing education. Support from the World Health Organisation in the form of external consultants from the UK and the USA established the educational framework for the nephrology programme. The Ministry of Health has developed increasing opportunities for nationals to pursue careers in Nursing.
Developing nephrology services to meet the complex needs of the expanding nephrology patient group led to the development of the first nephrology nursing programme within the Middle East. This programme is unique in that it provides the opportunity for muslim nurses to specialise and develop advanced clinical skills and knowledge in nephrology care.
Since the programme commenced in 1997 approximately 80 nurses have embarked upon the programme. This paper examines the impact of the year long programme in meeting the challenging and complex needs of patients with ESRD within the Middle East. The future for nephrology nursing education within the Middle East is critically discussed. The growth in specialisation is seen as an attractive career for nationals wishing to expand and develop their careers and provide care, which is reflective of their unique patient group.

Recruitment and retention – a clinical trainer is vital!

185

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Improving the quality of working life for NHS staff is one of the Government's key strategic aims. Flexibility and innovation in the delivery of effective training and education has proved vital to be successful in the recruitment and retention of nurses. It is recognised that the majority of learning takes place within the working environment through experience and reflection. As traditional family life and career patterns change, nurses are looking for a greater balance between work responsibilities and other demands that are placed upon them. The educational and professional development opportunities on offer have become a major attraction for nurses both 'old and new' when considering their future career. In an effort to meet the needs of the service, part-time shifts, term time contracts and annualised hours have been embraced. The renal directorate has recruited and developed a number of nurses who have had a break in practice or who have completed a return to nursing course. The clinical trainer who both supports and educates nurses new to the directorate in their clinical area was introduced in January 2000. A model of professional development was devised to formalise rotation throughout the directorate. Individual nurses have been able to regain their confidence, maximising their previous nursing experience through training and development programmes that have been tailored to their individual needs. An evaluation of the role of the clinical trainer has identified and justified the need for individualised training and support. It has provided both the nurse and the ward manager with a link to facilitate a pathway for training issues.

MRSA - learn to rule it

217

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The methicillin-resistant staphylococcus aureus is not longer a problem only of hospitals. More and more we have to face it in ambulant dialysis units, too. If you want to succeed in fighting MRSA its necessary to co-ordinate the efforts of many different groups of people. Here comes in a standardized list of steps that we have worked out to prevent MRSA from spreading and finally to eliminate it. This standard contains: the information of all the involved persons (the patient, its relatives, nurses, taxi-drivers and others), the hygienic aspects during the treatment of the infected patient within the dialysis unit, the steps of decontamination and their verification. Until now this standard has helped us to protect nurses and patients from MRSA-contamination and allowed us to cure three patients from MRSA-colonisation. Using it has helped us to decrease fear of MRSA by giving you information about it and is a tool to manage MRSA in your dialysis unit.

The evaluation and comparison of awareness in patients undergoing haemodialysis and CAPD

083

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The compliance of end stage renal disease patients with the treatment is one of the factors affecting their prognosis. It is expected that a patient with increasing awareness will also have increased compliance. In this study it was aimed to determine whether there is a difference between the level of knowledge about disease and treatment methods between patients undergoing haemodialysis (HD) and CAPD.
Thus, 10 CAPD (mean age: 38 ±14; 6 male, 4 female; mean treatment duration 5 ± 1 month) and 20 HD (mean age: 41 ± 15; 11 male, 9 female; mean treatment duration 28 ± 11 months) were given a questionnaire prepared according to the technique. 8 out of HD patients (40%) and 9 out of CAPD patients (90%) thought they were given enough information while determining the treatment regimen ($p<0.05$). 13 out of HD patients (65%) and all of CAPD patients (100%) had enough information about the uses of diet performed and restriction of water and salt ($p<0.05$). When our patients were asked about the way they choose for reaching the information, 63% preferred an interview with the healthcare team with their families, 12% preferred to be alone, 18% preferred to be with other patients also and 6% wanted books and brochures.
Results indicated that the level of awareness of CAPD patients were higher than HD patients though they had a shorter duration of replacement treatment. Compared to HD, CAPD is a way of treatment requiring active participation. Thus the healthcare team spends more time for the education of the patient. The difference may be related with this. As a conclusion we can suggest that end stage renal disease patients require special educational programs.

Predialysis education

022

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Introduction: Frequently the patients with end stage renal disease ignore main features over their illness and treatment in spite of receiving information from nephrologist doctor.
The patients feel anxiety and fear at beginning of the haemodialysis regular design.
The health team have developed an educational program dedicated to the patient and his family with the intention to arrive at a better adaptation to the treatment.
Material and methods: Retrospective design over twenty two patients who have come into haemodialysis regular design from October 1998 to October 2000 under the educational program.
The average time of training in the pre-dialysis step for each patient and his family was about seven hours.
Results: During the first three months of follow up, after beginning haemodialysis treatment, the patients seem to have greater trust and quiet, establishing a positive initial chain between the patient, his family and the health team.
We remark a better performance of the diet, net profit in the interdialysis period and medical prescriptions.
Conclusion: The results obtained inspire us to inform our initial experience and to design a prospective, multicentric, clinical investigation, today in progress.

Long-term follow-up of a programme for persistent life-style changes in patients (pts) with end-stage renal disease (ESRD)

010

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Many ESRD pts are poorly rehabilitated and have a low quality of life due to medical problems, physical incapacity, inadequate nutrition, emotional disturbances and social problems. The treatment interferes with the social life of the pts which may further contribute to creating fear and anxiety. We have introduced a 2 week educational programme for predialysis, dialysis and transplanted renal pts at a boarding school. Relatives and friends may participate on weekends. The programme includes lectures about psychology, mental relaxation and nutrition and exercise training. Three months later there is a follow-up meeting. Between the start in 1996 and 1999 a total of 163 pts have participated in 9 courses. One to four years after the course the pts were asked to fill in a form regarding their subjective experience how the programme has influenced various quality of life aspects on a visual analogue scale (VAS) of 1 ("not at all") to 10 ("very much"). The questionnaire were given to 140 pts. 23/163 patients have died. 105/140 responded. Among the parameters evaluated the course had the greatest influence on nutrition (VAS-score 7.6±2.3), physical activity (7.4±2.3) and emotional wellbeing (6.8±2.3). This long-term follow-up demonstrates that persistent positive changes of lifestyle and an improvement of quality of life were possible according to the pts subjective assessment. These results have encouraged a continuation and further development of the programme.

Haemodialysis

Bridging the gap

012

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Many new patients "crash land" into our hemodialysis (HD) unit, some suddenly, through the emergency room and some even after receiving teaching at the predialysis clinic. Most are frightened and tense at the time of their first dialysis treatment. They are at different levels of acceptance and seem to have little knowledge of the basics of their illness and its treatment. Our assumption is that there is a real need to "bridge the gap" between the predialysis clinic and the HD unit.
Method: observation of 3 predialysis clinics, interviews with both predialysis and HD nurses and questionnaires given to HD patients.
Discussion: Nurses claimed that although patients were taught about their disease and its treatment, understaffing and overpopulated predialysis and HD units might be the reason for "missing" some patients. Patients stated that the first few HD treatments are very traumatic. They wrote of "forgetting" everything they learned because of shock, confusion or denial, claiming not to have understood many things they were taught.
The above led us to the conclusion-that our assumption is correct and we therefore wrote up a protocol, for a nurse who would "bridge the gap" between predialysis and haemodialysis. This nurse would: be in contact with the predialysis staff and receive patients shortly before the planned onset of dialysis; assess where the patient is lacking in knowledge and make sure this knowledge is provided; take him through the HD unit and have him meet the staff and other patients; accompany him through the first 3 HD treatments at least; explain the unit's schedule and define his and our areas of responsibility.
Thus the new patient would feel more secure. His knowledge of his disease and its treatment would be improved and his level of compliance and motivation would be raised. "Seeing someone he knows" would lessen the amount of tension, stress and fear and encourage a more open, trustful relationship with the HD staff

Haemodialysis in the elderly

043

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During the last decade the number of patients starting renal replacement therapy has increased for all ages, but the increase for patients over 65 years old has been particularly dramatic.We studied 76 patients having End Stage Renal Disease (ESRD), from totally 309 patents offering haemodialysis since 1990. We found that 52 of them (68.4%) were over 65 years old [40 Male (76.9%), 12 Female (23.1 %)]
The main causes of ESRD were nephrosclerosis (34.6 %), diabetes mellitus (17.3%), hypertension (19.2%), polycystic kidney disease (5.8%), undefined causes (23.1%).
Elderly patients manifested intradialytic complications more often, such as hypotensive episodes(28.8%) and arrythmias (23.1%), due to their haemodynamic instability.
Polypharmacy is a big deal for dialysis patients, especially elderly ones. Each patient was taking 9.1 PO and 1.9 IV medications on average , per day. Most of them (84.6%) required recombinant human erythropoietin.
The most common comorbid factors we observed in this population, were cardiovascular diseases (36.5%), neurological problems, respiratory failure, bone disease, malignancy (17.3%), depression, malnutrition, infections (30.8%). Deaths were often associated with more than one of morbid factors. Survival and the quality of life in the elderly patients on haemodialysis are frequently acceptable. The 1, 3 and 5 years patient survival rates during 1990-2000 were 63.4%, 56.1 % and 26.8%.
We believe that if there are no extra contra-indications, elderly patients can benefit from haemodialysis, taking into consideration that we should adapt the therapy to the geriatric special needs.

Hepatitis-B vaccination, Engerix™-B or H-B-VAX II®, 3 years of comparative study (1997-2001) 032

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The aim of the study was to determine if we could show a difference between two existing vaccines Engerix™-B or H-B-VAX II®. For 3 years we vaccinated new dialysis patients at random with the vaccines.
We used dose 40 ❍g of each vaccine (one dose H-B-VAX II®, 2 doses Engerix™-B) Vaccination scheme: 1st injection after hepatitis status control, 2nd inject 1 month later, 3rd injection 6 months after the first injection.
Patients: 66 (37 male - 29 female) [drop out (25) 4 patients were antibody positive in the first control, 12 died, 4 were transplanted, 3 currently in study, 2 for other reasons].
Results: 41 patients completed the study (male 20 - female 21), Mean age: 70 (25-88). After the first vaccination no patients reached a protecting level of 10 MIU/ml. After the second injection 2 in each group achieved a surface antibody reaction above 10 MIU/ml. The third vaccination resulted in a positive reaction of 6 patients in the Engerix™-B group and 4 in the H-B-VAX II®group. Only 10 of 41 (25 %) patients achieved more then 10 MIU/ml surface antibodies after three injections. Costs: Engerix™-B: (administered at dialysis) 40.6 r ,H-B-VAX II®: 66.46 r.
Conclusion: There is no significant difference between the two products regarding seroconversion after vaccination. The cost is 61 % higher using H-B-VAX II®. Therefore, Engerix™-B is preferable to H-B-VAX II®.
Follow-up: Patients who stayed negative after the first set of vaccinations will be vaccinated with the other product to see if they will seroconvert.

Evaluation of the blood recirculation in catheters for haemodialysis and its relation with blood circuit pressures 110

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Venous catheters constitute an effective vascular access for haemodialysis (HD). However, they are not exempt from complications and their duration is limited. In addition to blood flow, recirculation (REC%) is an important factor that influences the adequacy of HD.
The purpose of the present study was to evaluate REC % in dual lumen catheters and its possible influence on the drop in arterial pressure and the venous pressure during the HD performance.
25 well-functioning dual lumen catheters were studied. REC % was calculated using a thermodilution method with a blood temperature monitor, connected to a HD monitor. After setting a constant blood flow rate at 250 ml/min, we determined: the real blood flow, the drop in arterial pressure, and the venous pressure. The catheters evaluated were: 15 temporal catheters and 10 tunnelized catheters. 18 catheters were placed in the jugular vein and 7 in the right subclavia vein. REC %, real blood flow, drop in arterial pressure, and venous pressure are presented in the next table (mean±SD).

Catheters	Tunnelized	Temporal	P
Real blood flow	222 ± 7	236 ± 7	P<0.01
Venous pressure	137 ± 56	120 ± 36	NS
Arterial pressure	-185 ± 39	-119 ± 45	P<0.01
REC %	8.9 ± 3.3	5.2 ± 2.3	P<0.01

A positive correlation was found between the increasing of REC % and the increase in negative arterial. pressure ($r = 0.6$, $p<0.05$). We found no relation between REC % and venous pressure.
We conclude that the REC % increases when the arterial pressure becomes more negative in dual lumen. At a some fixed blood flow, the REC % in temporal catheters is lower than in tunnelized catheters during HD performance.

In vitro comparison between GIT (glucose infusion test) and transonic device 057

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GIT is a new method to measure the vascular access recirculation based on the glucose increase in the arterial bloodline after a venous glucose bolus. The protocol of GIT includes a basal blood sample (A) from the arterial port, a 5 ml bolus of glucosate 20% into the venous chamber (time 0) followed by a second sample (B) withdrawal in 4 sec from the previous port. The time of sample B is crucial and depends on the blood pump rate (from 16 to 20 sec with Q_B of 200 ml/min, 13 to 17 sec with Q_B of 300 ml/min, 9 to 13 sec with Q_B of 400 ml/min). The blood glucose level is determined at the bedside on A and B by a glucometer (Profil, Lifescan, USA) and the recirculation percentage is calculated from the regression equation $R\% = (B-A)/20$.
To further validate this new method we performed a comparison between GIT and the ultrasound method of transonic (TR) in a modified dialysis circuit reproducing the phenomenon of recirculation in vitro. The arterial blood line of a standard dialysis device was connected to an outdated human blood bag while the venous line to a drainage bag. A short bypass line (priming = 0.5 ml) with a peristaltic pump (BL 705, BELLCO, Mirandola Italy) linked the ends of the venous and arterial lines determining the artificial recirculation (AR). This appropriate circuit gave known percentages of recirculation and a bench validation for GIT. We repeated consecutively five tests for GIT and TR at different AR (from 0 to 20%; n = 40). The correlation between R_{GIT} and AR was very high ($R_{GIT} = 0.99AR + 0.3$; $r = 0.98$; $n = 40$). Both specificity (AR = 0%) and sensitivity (AR > 0%) were 100%. TR failed (no results) 7/40 tests all at AR under 10%; these tests were excluded from the analysis. The correlation between R_{TR} and AR was good, but with more dispersion of the data ($R_{TR} = AR - 1.3$; $r = 0.93$; $n = 33$). TR didn't recognize 3 AR of 5% (91 % overall sensitivity, 30/33), while the specificity was 100% (no false positive). From the correlation between R_{TR} and (B-A) values we can derive the regression equation $R_{TR} = 0.05(B-A) - 1.5$ ($r = 0.93$) very similar to the previous one.
In conclusion, GIT showed a better in vitro performance compared to TR. It will be necessary to confirm these preliminary data comparing the two methods in a wide population of haemodialysis patients.

Local treatment of Permanent Catheters infected with Pseudomonas aeruginosa 005

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Once an infection with Pseudomonas aeruginosa is detected, tunnelized catheters have a limited life span. Because the infected Biofilm adheres to the catheter in the sub cutaneous pathway, no disinfection or sterilisation is usually possible and the catheter must be removed before serious complications can develop. Considering the difficulties incurred in finding vascular access in some hemodialysis patients, the removal of an infected catheter may lead to a series of complications associated with the insertion of a new catheter. We tried a local treatment with a hypertonique saline solution (with air drying time between the three applications), associated with an application to the orifice of honey which was followed by a dry sterile dressing. The titer of infection was lowered, and an acceptable level of colonisation was achieved, decreasing the risk of bacteraemia. Neither antibiotic therapy nor any disinfectant was used concurrently with the local treatment. No systemic or local complications were observed with this treatment. A mean time of 94 days was gained with this method which permitted the confection and maturation of arterio-venous shunts. In conclusion, in a small subgroup of patients with very limited vascular access, a local treatment of Pseudomonas aeruginosa infected permanent catheters allowed a prolonged use of these catheters.

Psychological involvement of the nurses in front of a terminally sick haemodialysis patient

112

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Introduction: There are always more terminally sick patients (TSP) in haemodialysis (HD). The personnel that assist them wonder if they are sufficiently qualified to assist them and if these TSP need care different from the other chronic dialysis patients. The reason for this survey is to study if the care and dialysis of these TSP psychologically affects the infirmary personnel who look after them during HD.
Aim of the study: To study if the medical and psychological management of TSP in HD rebounds psychologically on the infirmary personnel. Material and methods: An inquiry has been carried out in 4 hospitals and 5 extra-hospital haemodyalisis centers to 76 graduates in infirmary (mean age: 41 years), with professional experience in dialysis of more than 10 years. The survey consisted of 17 questions, answer: (yes/no), that they make reference on the psychological affectation of the infirmary, education necessity and need of support from specialized team. Results: 70% of the nurses are psychologically affected dialysising and caring for the TSP. 90% of the nurses believe that the TSP need infirmary care different from the chronic patients in dialysis. 99% of the nurses would want to receive education and psychological support from specialised team. Conclusions: A) To treat TSP rebounds psychologically on the nursing personnel that assist and dialyse them. B) The TSP need more attention and specialised support than a normal patient in chronic haemodyalisis. C) The dialysis nurses need specialised education and psychological support to attend correctly these patients.

A study of diabetic patients' response to glucose containing dialysate versus glucose free dialysate

044

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Glucose containing dialysate is used either for nutritional purposes or in order to avoid hypoglucaemic symptoms. We studied the diabetic patients' tolerance to dialysis sessions with glucose containing dialysate in comparison to sessions with glucose free dialysate. The 14 diabetic patients of our Unit (5 male, 9 female) with mean age 63.8 years ±11.8 and time on dialysis 43 months ±48, received 6 sessions with dialysate containing 100mg glucose/dl (Phase A) and 6 with glucose free dialysate (Phase B). Dialysates were alike in both composition and cost. Serum glucose levels were recorded pre and post dialysis. Blood pressure, pulse, body weight variations, number and severity of hypotensive episodes on both Phases of our study were also recorded.
Results: We observed: 1) no significant change in body weight and vital signs (blood pressure and pulse) on both phases, 2) significant decrease of serum glucose levels pre and post dialysis in Phase B (from 143mg/dl ±45 to 104.7mg/dl ±34, $p<0.05$). Seven patients were recorded with serum glucose <100mg/dl, 3) four hypotensive episodes were recorded in 3 subjects in Phase A. While, in Phase B nine hypotensive episodes were observed in the same 3 subjects ($p<0.05$).
In conclusion the use of glucose free dialysate induces hypoglucaemic incidents, which might be latent. It may, also, aggravate hypotensive incidents in patients that are prone to them. Therefore, use of glucose containing dialysate is recommended in order to improve the dialysis tolerance.

A research study examining haemodialysis patients views on their desire to be involved in the decision making of resuscitation orders

141

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Recent studies have suggested that the survival rate following a cardiac arrest for a patient with renal failure is as low as 1%. In light of these statistics a research study was proposed to examine patients views on their desire to be involved in the decision making of resuscitation orders.
An 18 point questionnaire was developed as the research tool. The sample group used in the study were patients attending outpatient haemodialysis at a satellite unit at a London teaching hospital. 112 patients were eligible to participate. The patients ranged from 23-78 in age. Each patient was given a questionnaire to complete and return in a sealed envelope. The researcher was made available to deal with any questions or concerns that were raised from the questionnaire. It was the aim of the research to also examine any correlation that existed between the patients social circumstances, duration of treatment, previous transplant or prior knowledge or experience of resuscitation.
The results from this study will be presented. It is planned that the results of this research will challenge the way in which resuscitation orders are made. It is hoped that this will reflect a more open and participative relationship between patients and the healthcare professionals that are responsible for their care.

Analysis of a vascular access protocol of surveillance

114

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Complications arising from vascular access (VA) are major causes of morbidity in haemodialysis (HD) patients. The nurses are the main health care personnel of the VA. The purposes of this study were: 1. Obtaining information of the different types of VA and the rate of thrombosis in a outpatient HD unit. 2. To evaluate a vascular access protocol of surveillance of VA dysfunction with an active participation of nurses. This protocol consists of early assessment by angiography (AG) or vascular surgeon (VS) of VA with two main indications: 1.Venous pressure higher than 120 or 200 mm Hg at a flow rate of 300 ml/min in a native (N) VA or graft (G)VA respectively. 2. The flow rate of AV was lower than 300 ml/min. We analysed 193 VA (not including catheters) in 155 patients dialyzed in our unit during a 5-year period (1996-2000). In 69.4% (134/193) of HD patients an NVA was used. The radiocephalic VA was used in 51.3% (99/193) of patients. The mean age of patients with NVA was 58.7 (SD: 14.9)years vs 63.4 (SD: 13.2) for patients with GVA ($p<0.003$). The total number of thrombosis was 64: 0,20 episodes per patient per year at risk. Sixty eight VA in accordance with the protocol required a preventive assessment: 54 by AG and 14 by VS. The indications for preventive assessment were: low level flow of VA 47% (32/68), elevated venous pressure of VA 35,2 %(24/68). Fifty nine (86,7%) of preventive evaluation of VA were pathologic and 9 non pathologic. Forty six of 59 (77,9%) of pathologic VA (32 NVA; 14 GVA) were repaired and 13 cases required a new VA. Thirty two of VA needed angiographic percutaneous dilation and 13 surgery intervention. The median of function of VA before and after angiographic or surgery intervention were 21,5 months vs 55,9 months respectively ($p<0.01$). In conclusion: 1. The number of thrombosis was low. 2. Permanent surveillance of VA is necessary to prevent dysfunction.
3. Nurse's role is determinant for prolong survival function.

The vascular permanent abords in chronic haemodialysis patients and their complications 028

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Goal: Study the survival of the arteriovenous fistula (AVF) in chronic haemodialysis patients and analyze their precocious and late complications in order to prevent them.
Materials and methods: Authors report a retrospective structural survey on 1006 vascular abords (985 AVF and 21 grafts) achieved at 757 uremic patients, discovered in the department of nephrology CHU Monastir during a period of 19 years between the first January 1980 and December 31,1998. We have taken the files of the fistulas, analyzed their attended referring to several parameters (age, sex, initial nephropathy, type of AVF) and monitored the different complications.
Results: The immediate permeability of all the vascular abords has been 96.75 %, whereas, the rate of permeability at 1 year, 2 years, 3 years and 5 years were respectively : 83.45%, 58.01%, 48.94%, 40.97%. The precocious complications of direct abords were: immediate failure: 3.04%, thrombosis 2,33%, infections 0,71%, haematoma 1,20%. Late complications were: thrombosis 10.1%, infections 3.04%, aneurysm 1.5%, oedema: 1.21%. The total cumulated rate of complications of the fistulas using a graft was 69.2 % for the venous autogreffes and 75 % for the Goretex.

Conclusion: Diabetic patients have less immediate permeability rate than non diabetics. Late thrombosis were more frequent in diabetics.

Daily haemodialysis: fit for life 020

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The impact of patients with severe fluid overload resulting in frequent hospitalizations and emergency dialysis lead to a team of Registered Nurses to initiate the Daily Haemodialysis Program. The effects of a supervised daily haemodialysis were studied in 6 patients.
Prior to starting daily haemodialysis, patients were assessed by the Nephrologist. The weekly dialysis duration remained unchanged but was divided equally into six treatments per week. There was no change in their prescription treatment such as dialyzer type, blood and dialysate flow rates. The Registered Nurses were responsible for the planning and follow-up of the patient care including expected outcomes. A 2-D echo, Biostat urea kinetics, Transonic access flows and quality of life questionnaire was completed before and after the study.
The patient questionnaire demonstrated improvement in their quality of life. There were also improved nutritional status, lower serum phosphorus levels, softer and smoother skin with lighter complexion. Haemodynamically the patients were stable with improvement in uremic and dialysis related symptoms. There were no vascular access problems. The expense of the daily dialysis treatment increased but the total cost per patient decreased. The extra workload.of daily haemodialysis was absorbed by the staff.
The daily haemodialysis study has positive outcomes. These have led us to expand the daily haemodialysis program in our unit.

Exercise: pep up your life 021

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At the initiative of a group of nurses a pilot study of an exercise program was developed between the Haemodialysis Unit and the Cardiac Rehabilitation Center.
Ten patients were enrolled and tested with a Chung Protocol on a treadmill. The 12 weeks supervised exercise program consisted of 60 minutes twice weekly of treadmill and ergometric bicycle (half hour each). The exercise program was supervised by a haemodialysis nurse, a physiotherapist from the Cardiac Rehabilitation Center and a nephrologist.
After the completion of 12 weeks' training, patients had the opportunity to exercise during their first hour of each haemodialysis treatment, using a recumbent stationary bicycle in the haemodialysis unit.
Benefits included increased aerobic exercise capacity by 18%, a major improvement in quality of life and well-being and, when patients exercised during their haemodialysis treatment, a statistically significant improvement in blood purification and leg blood flow.
An exercise program should become part of the process of rehabilitation in every dialysis unit. Nurses and physicians can educate their patients and, with the assistance of a physiotherapist, encourage supervised aerobic exercise. Moreover, patients can exercise during their treatment. Intradialytic exercise. is practical, safe and beneficial for them.

Immediate and delayed memory recall patterns of chronic haemodialysis adult hispanic patients 026

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Education in chronic haemodialysis (HD) patients is a central part of quality care. Memory may be affected by timing of education sessions, demographic/socioeconomic factors in addition to metabolic state. Specific needs of Hispanic HD patients have not been identified. The purpose of this study was to examine the immediate and delayed memory recall patterns in Hispanic HD patients at three intervals (before, during, and after HD) on one treatment day to develop recommendations for the most effective time to administer patient education. Institution review board approval was obtained. Patients volunteered and gave written consent. A random group of five words was chosen from a group of 15 simple words and presented to each patient on large laminated cards in their native language of Spanish or English by the same researcher. Immediate and delayed (within 5-10 minutes.) recall were recorded as number of words correctly remembered. 62 patients participated; 61% male; 32% diabetic; mean age 63.2±13.2 SD years, age range 30-85; mean Kt/V 1.5±0.2 SD. Education levels completed: 2% none, 36% elementary, 27% high school, 35% college. Analysis of variance, regression analysis, and appropriate t-tests were used to examine differences between treatment times and among study variables. Results showed both age and level of education directly correlated with memory loss. Patients with high school or college education had significantly greater memory recall than lower education levels. Results from this study emphasize the increased need to provide written education materials to elderly Hispanic patients. The reading level of education materials should be targeted at elementary grade levels to promote understanding.

Blood loss in haemodialysis (HD) patients (pts) is equal to loss of iron: aspects of measurement 103

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Renal anaemia of haemodialysis patients is caused by a number of factors and treated with Erythropoietin (EPO) and IV iron therapy. HD treatment causes blood loss in pts and in consequence a net loss of iron. The measurement and consideration of iron loss has not played an important role in EPO and iron doses finding studies. The overall goal of our total study was to a) review the literature regarding overall blood loss of HD pts: b) study in retrospect the quantifiable and measurable blood loss; and c) find a ratio between the 3 factors: 1) measurable HD related bloodloss; 2) gastric-intestinal and other blood loss; and 3) the physiological iron turn over and the iron IV substitution. We report in this paper on b) the evaluation of quantifiable and measurable blood loss in 27 pts over 12 months using nursing pts documentation, lab schemas and available computerised data.
Methods:
The evaluation considered the blood sampling for routine and acute lab, total clotting of the HD tubing, singular clots in the HD tubing, redness of the dialyser and other documented problems, i.e. blood leak, disconnection of the system, removal of needles, others. Evaluating iron in the blood with calculating factors according to Wick we used the mean Haemoglobin (Hb) and mean Transferrin (TSF) resulting in a factor of 0,396 mg iron /ml blood. Mean values of pts were age 67,4 years, Hb 11,04, TSF 206,3 mg/dl and K*T/V SP 1,37, anaemia treatment values EPO iv/week/kg/BW 48,1 IU and 45,17 Fe III Gluconate iv.
Results on treatment related blood and iron loss / 27patients / 12 months

System / mean values	Blood ml/V	Range/ml	Iron mg/MV	range/mg	%
Blood tests in lab	455,5	279 - 920	180,38	(121,5 - 364,3)	35,9
Blood tests bedside	200,4	100 - 300	79,36	(39,6 - 118,8)	15,9
Dialyser / tubing	243,7	0 - 1760	96,51	(0 - 696,96)	19,3
Others	366,7	200 - 950	145,21	(79,2 - 376,2)	28,9
Total	1266,3	639 - 2825	501,46	(253 - 1118,7)	100,0

Discussion and conclusion: The monitoring scheme, methods and material used in blood tests are responsible for more than 50% of the blood loss, equally important is the handling of staff in rinsing back dialysers, in prevention of clotting and handling of the access for dialysis. All blood lost needs to be reconstituted by means of EPO and iron. Dialysis patients are not never drying sources.

Recruitment and retention of registered staff in renal units - Do practice development nurse's have an impact? 157

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The inability to recruit experienced renal nurses is an international issue and has had a significant impact on the ability to provide haemodialysis and high quality patient care. In a large cosmopolitan haemodialysis unit, catering for a multi-racial community, the problem became critical in December 1998. At this time the vacancy rate for qualified nurses peaked at 48%. Decisions had to be taken regarding the way forward. A complete staffing restructure was undertaken and the decision to recruit experienced nurses without renal experience was taken.
In order to support the new nurses and provide additional support for the existing staff the decision was taken to remove one junior sister's post from the nursing establishment to create a practice development nurse's role.
The aim of the paper is to discuss/evaluate the impact of this supernumerary staff focused role, and the effect on the morale, retention and recruitment of all nursing staff and therefore the impact on patient care.
Initial findings have shown significant reduction in the vacancy rate amongst registered nursing staff to approximately 4%. A staff satisfaction survey is in progress and will evaluate the impact of the role from the perspective of the nurses. This data will be discussed further in the paper.

The first step from dependence to independence 016

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Rationale: A constructive guidance program for new patients which contains organised data and accompanies the patient and his family in the first months of haemodialysis can prevent dependence, confusion anger and feelings of uncertainty. For this reason a multidisciplinary team established an integration kit.
Aims: To improve quality of treatment; To heighten satisfaction; To assist new patients in the integration process; To create a constructive program which is acceptable to all members of the treating staff; To involve the multidisciplinary team in the process of building and implementing the guidance program; To decrease anxiety and strengthen feelings of security.
Process: A multidisciplinary assignment team was established; A questionnaire was compiled for patients and their families, distributed and the data processed; Information from relevant literature was collected and processed; A guidance program and absorption kit were established.
Results: An increase in the willingness of patients to become involved in the treatment process and decision making; Comprehensive information provided by the multidisciplinary team strengthened feelings of security amongst patients; A guidance kit was compiled for the absorption of a new patient into the haemodialysis program; Working together in an assignment group contributed to feelings of integration and satisfaction.
Conclusions: Provision of comprehensive information by the multidisciplinary team is an integral pan of the guidance program-, It is necessary to identify the requirements and willingness of patients and their families to receive information, in order to strengthen their cooperation and response to the treatment; Constructive guidance when initiating haemodialysis treatment assists patients in dealing with the implications of the illness.

KT/V and quality of life improvement to dialysis patients with obesity 017

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Overweight problem also known as Obesity contributed a lot to early mortality in this decade. Moreover, Obesity is a major problem to dialysis patients.
In this paper we present a method to improve the quality of life of dialysis patients with Overweight problem.
The efficiency of the dialysis process known as KT/V is much lower for patients with overweight problem. In our dialysis department we organized a work group that included four staff members and nine patients.
An overweight patient has been defined by employing the Body Mass Index, B.M.I. In the work group we gave intensive instructions to a diet process. Moreover, we added more days and hours of haemodialysis in order to improve the dialysis KT/V. The patients received a continuous encouragement from the staff and from their family. We also found that patients with Obesity have a high Ultra filtration. This results in more hospital hours and in difficulties to access AV shunts.

Our work improved significantly the quality of life and KT/V of dialysis patients with Obesity. We will continue this project in the future. We will encourage hospitals in Israel and in other countries to contribute to this project.

The role of a satellite dialysis center in hepatitis B and C prevention 093

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Hepatitis B and C is relatively frequent in the dialysis population, with the risk for its spread being considerable despite vaccination. Separation of HBsAg and anti-HCV positive (HBsAg+ a anti-HCV+) patients within a dialysis center is often problematic and not fully effective. Our study was designed to evaluate our four-year experience (covering 1,949 patient-months) of a satellite dialysis center (SD). The SD (40 patients) is located about 200 m from the main facility performing clinical haemodialysis (CD, 80 chronic patients and acute dialysis). SD patients developing complications are dialyzed at the CD for as long as necessary. The prevalence and incidence of HBsAg+ have been 14.2% and 2.5%, respectively, in our dialysis patients over the past 4 years. The prevalence and incidence of hepatitis C are 5.8% and 0.5%, respectively. The SD admits patients meeting the entry criteria, i.e., HBsAg and anti-HCV negativity. Over the past 4 years, the SD has performed 21,000 dialysis sessions in 86 patients; of this number, 54 were taken over from the CD, and 30 patients started treatment at the SD or were at the CD for one month at most. Twenty-one patients had successful transplantation, one was referred to another dialysis center, 24 patients died, and 40 are currently receiving therapy. HBsAg or anti-HCV positivity was not demonstrated in any patient throughout the existence of the SD. Of the 40 currently treated patients, 25% are anti-HBc+, 50% are anti-HBs+, 25% have no anti-hepatitis B antibody.
The SD has proved to be an effective way of preventing hepatitis B and C. Along with hygienic measures and active and passive immunization, a separate dialysis center helps reduce the risk of hepatitis B and C infection. This comprehensive tactic of hepatitis B and C prevention should be employed especially in patients who have failed to develop anti-hepatitis B antibody after vaccination.

Not another line infection! 086

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The aim of this research study was to establish a strategy to reduce the line infection rate in the unit which appeared to be on the increase.
Method: The number of patients with infections was recorded. The infection control team was invited to do an environmental screen and swabs were taken from the work surfaces and equipment. Our protocol for treating all lines was also examined. Data was collected retrospectively for a six-month period to show the date of the line inserted, number of infections and treatments by the research nurse.
Results: We proved that simple remedies - strict adherence to the dressing protocol, proper hand washing techniques and advice from the infection control team - can lead to a reduction in line infections. Furthermore, a staff nurse was designated to update line sepsis on the computer. A line surveillance chart was also introduced to audit the infection rate. Patients with line infections were followed up with appropriate treatment. Dressing technique was assessed individually to make sure that dressing protocol was followed to the letter.
Conclusion: The line infection rate has been reduced thanks to a few straightforward procedures. But we are constantly reviewing the suitability of the protocols in the light of new research. We must not become complacent and should always be on the alert for infection in the future.

Rising to the challenge of effective leadership 164

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Taking on the role of senior sister within a rapidly developing haemodialysis unit has been an inspiring challenge. The role inherited minimal numbers of staff, many of whom were overworked and disgruntled with no clear direction. The increase in patient activity and the growing demand for renal replacement therapy had the potential to effect the quality of patient care. The need to provide effective leadership for staff, whilst maintaining a 'hands-on' clinical influence within the role had become evident.
It was necessary to provide a vision that enabled systematic team leadership which comprehensively supported and developed all grades of staff through an immense period of change. There was a clear focus and commitment to maintain high standards of patient care.
A transformational leadership style as described by Bass (1990) was adopted. Bass believed that transformational leaders envisage organisational goals in order to motivate followers to do their best and perform beyond their own expectation. The inspiration of a shared vision was paramount in order to build a nursing team enthused, uplifted and enabled to rise to the challenge of local reform. The role boundaries of the senior nursing staff were reviewed with a focus on supporting the development and clarification of the role of Team Leader. The senior sister supported the development of four Team Leaders in a two way process. All grades of staff were split equally into four teams.
A strategy was successfully implemented to strengthen leadership. Through providing a support network for all grades of staff, a team culture has been fostered, improving morale and job satisfaction. Attention to individual staff development and the ability and willingness to provide intellectual stimulation, encouraged staff to excel in their motivation and creativity.
Without effective leadership, support and encouragement, nurses could potentially withdraw from the emotional demands of the patients and lose sight of the intellectual challenges of everyday practice. Furthermore, this strategy has been a useful tool to encourage recruitment of staff, whilst providing a structure to develop today's skills in preparation for tomorrow's leaders.

Continuous renal replacement therapies 030

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The continuous renal replacement therapies (CRRT) are used more frequently in patients admitted to intensive care units with acute renal failure in the setting of a multiorgan failure.The majority of these patients have: Sepsis. Multiorgan failure, acute respiratory distress syndrome. Such patients are prone to develop hypotension making very difficult treatment with conventional haemodialysis.
The CRRT are used more frequently due to the obvious clinical advantages. when compared to conventional haemodialysis. These advantages are mostly due to slow volume and uremic toxins removal. In our institution during the year 2000, 58 patients were submitted to CRRT: 14 underwent continuous veno-venous haemofiltration and 44-underwent continuous veno-venous haemodiafiltration. The therapy was prescribed by a nephrologist and a unit nurse and afterward was monitored by the nurse. The mean patient age was 61.7 years (range: 20-87), 36 were male and 22 females.
Regarding the diagnosis 25 patients (43.1%) had a criteria for the diagnosis of sepsis, 18 (31%) were post-operative open heart surgery, 7 (12%) had multiorgan failure, 4 (6.9%) were patients with polytrauma, 3 (5.2%) were neurosurgery post-operative and 1 (1.8%) was a hepatic transplant patient. Despite the grave prognosis of these 58 patients, 22 (37.8%) survived and 36 (62.2%) expired. Out of the survivors, 10 patients (17.2%) recovered renal function to become dialysis independent and 12 (20.6) remained in a regular haemodialisys program. The authors conclude that as experience improves with the use of CRRT, it will be used more frequently and become an alternative to conventional haemodialysis.

The use of a blood volume monitor to detect inadequately high dry weight 170

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Background: Chronic volume overload with poor blood pressure control predisposes haemodialysis patients to cardiovascular disease. It has been suggested that blood volume monitoring may be used to assist in the assessment of fluid status by detecting patients with inadequately high dry weight (Lopot et al 1996). This study evaluated the efficacy of the use of a blood volume monitor to detect fluid overload.
Method: Changes in intradialytic blood volume were monitored in 44 chronic haemodialysis patients. Patients were then categorized into two groups depending on their intradialytic decrease in blood volume (BV). Group 1, 82% had a greater than a 5% decrease in BV, while group 2, 18% had less than a 5% decrease in BV. During the second phase of the study intradialytic fluid removal was intentionally increased each dialysis session a 2-month period.
Results: This intervention resulted in a decrease in dry weight in 4 out of 6 patients (range 0.5 kg - 2.7 kg, mean 1.85 kg), without a significant increase in intradialytic symptoms (4.1% to 6.3%). Anti-hypertensive medication was decreased in all of the patients in group 2 who were taking them (5 out of 6).
Conclusion: These results suggest that there is a significant percentage of chronic haemodialysis patients who can tolerate additional fluid removal, despite being considered to be at dry weight as assessed by routine physical examination. The identification of these patients can be facilitated by the use of continuous blood volume monitoring.

Routine monitoring of vascular access for haemodialysis using a dilution ultrasound technique 027

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A correct access blood flow is one of the most important factors for dialysis efficiency. The aim of our study was to demonstrate, that, associated to clinical examination, the ultrasound dilution device (Transonic) is useful for routine monitoring of blood access flow. After the nurses training period the transonic monitor has been used in all the patients of the dialysis unit (measure of recirculation and blood flow). We produced a guide for utilisation of the device, a sheet for each patient where we make a note of every blood access measure. The physician provides us with a work schedule of the measures to perform each month.
RESULTS:
1. When we started the device utilisation, the first screening divided the patients into two groups: patients with access flow over 1000ml/min (n=39) and patients with access flow under 1000ml/min (n=21). In the first group, access flow is measured every three months, in the second group, access flow is measured monthly.
2. Blood access surgery was performed in 22 patients in 1999 and in 19 patients in 2000. After one year of utilisation of the ultrasound device, we have noted that unplanned hospitalisations and aggressive surgery have been avoided with a decrease of acute thrombosis from 54% to 37% and a related increase of arranged surgery from 45% to 63%.

	1999: without transonic	2000: with transonic
Acute surgery	12/22 (54%)	7/19 (37%)
Planned surgery	10/22 (45%)	12/19 (63%)

Different reaction of fluid shifts in haemodialysis between diabetic and non-diabetic patients 019

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Ultrafiltration is performed during haemodialysis in order to remove fluid that accumulated since the previous treatment. Simultaneously, there is a shift from the interstitial compartment intra-vascularly , which helps keep the blood pressure stable. The intracellular fluid compartment in turn fills the interstitial compartment at a slower rate. It is well known that diabetic patients, on haemodialysis are less haemodynamically stable and tend to develop hypotensive episodes. The goal of this study is to see whether blood volume per se has an etiological significance. 10 diabetic patients, who had diabetes mellitus for more than 10 years, and 10 non diabetics were observed for 10 successive dialytic treatments, using dialysis machines with online BV monitors.
The results show a decrease in mean BV of only 5.9% ± 2.6(SD) in diabetics and 12.8%±2,3 (p<0.001) in non diabetics. The. calculated plasma refilling, provided that it is complete, was 14.29ml/min ±1.4 in diabetics, and 11.4m1/min ±1. 12 (p<.10.0 1) in non diabetics. The hypotensive episodes (systolic<90 or clinical symptoms of hypotension, like cramps with nausea or vomiting or seizure) numbered 32 in diabetics and 15 in non diabetics.
Conclusions: It seems that the haemodynamic instability of the diabetic on HD is not related to BV changes, but is most probably due to the autonomic neuropathy, not allowing the vessels to contract as fluid is removed.

Setting of standards in haemodialysis care: the Peer Review experience 037

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Aims: In order to improve the supervision and to evaluate the quality of care in dialysis units, a national research project was promoted as a Peer Review.
This consists of a systematic , continuous and critical evaluation of the care and the application of the international guidelines. It compares the reality of care with standards.
Method: The first chart consists in the evaluation of infectious episodes of the vascular access. This point is particularly relevant since infection represents the second cause of mortality in haemodialysis. A questionnaire concerning each patient has been designed. Questions concern the description of the vascular access and the related infectious events. Each questionnaire includes 21 items. That project concerns 29 dialysis centers and 1644 patients involving 1775 vascular access. The database includes 90525 data.
Results: Among the 29 centers, the native arterio-venous fistula (AVF) is the first choice (67.5%) for vascular access. But the proportion of AVF decreases with age compared to the catheter which is more frequently chosen in older patients. Independently of the age, there is 20% of hospitalisations among patients with catheters and only 7% among patients with AVF. So the RR (relative risk) to be hospitalised (any complication of vascular access) is 1.68 for patients with catheters compared to patients with AVF. The rate of infections does not increase with age but is higher for patients with catheter (RR=2.26). The number of infections appears to be dependent of the carrying of staphylo.aureus in the year.
Conclusions: This first step allows each center to compare itself to others in an anonymous way. This approach should lead to address specific recommendations to improve the quality of care in dialysis units.

Anaemia correction in uremic patients on regular dialytic treatment

061

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Anaemia is an important complication in patients (pts) with chronic renal failure (CRF) in regular dialytic treatment (RDT). The aim of our study has been to consider the effects of therapy with EPO in the treatment of anaemia in a group of pts , in two different administering methods: By subcutaneous injection (sc), and by intravenous injection (iv) and to monitor its efficacy during the time. We have selected 23 pts of our centre subdivided on two groups: G1 (13 pts: 7m-6f, 54±15 y. o.) who were given EPO by iv; G2 (10 pts: 7m-3f, 64±11 y.o.) who were given EPO by sc. The pts have been screened for an overall period of 18 months. All pts had to have been on RDT for more than 12 months with dialytic sessions lasting 240 min. and should have HB values <8 g/dl measured in two consecutive assessments at intervals of a month one from the other. In both groups use of biocompatible membrane or not was the same. The efficacy of therapy has been considered in both groups in three following moments: a) time 0: G1 13 pts vs G2 10 pts. b) time 1: after 6 months of treatment, G1 11/13 pts (1 transplant, 1 died); vs G2 9/10 (1 died); time 2: after 12 months from the beginning of treatment : G1 10/13pts (2 transplant, 1 died), vs G2 8/10 (2 pts died). Among the laboratory parameters carried out monthly before the dialytic treatment after the long time, the haematological values of HAT, HB, RG, and transferrin have been taken into consideration. The dialytic efficacy and the cardiovascular stability have been assessed too. The administering of EPO has been of 12.153±4570 UI weekly in G1 vs 9100±5173 UI in G2. In G1 ISBP values were 149±21 mmHg with IDBP values of 79±12 mmHg; vs ISBP 134±28 mmHg and IDBP of 69±12 mmHg in G2. FSBP was 135±29 mmHg with FDBP of 72±16 values in G1; vs 133±24 mmHg with FDBP values of 70±11 in G2. The values of iron and transferrin which weren't different in two groups have been evaluated too.

G1	GR	HCT	HB	Kt/V	CREAT	G2	GR	HCT	H B	Kt/V	CREAT
t.0 13	2.903±630	26±4	7..25±0.79	0.84±0.11	10.4±1.9	t.010	2968±706	29±5	7.50±0.92	1.1±0.34	9..95±1.3
t.1 11	3.386±859	29±7	8..35±1.18	0.96±0.84	9.26±4.3	t.1 9	3403±366	31±5	9.4±1.32	1.13±0.63	9.63±3.6
t.2 10	3.658±191	32±4	9..98±4.8	1.53±0.55	8.23±4.9	t.2 8	3422±161	34±6	11.13±5.2	1.53±0.56	9.34±3.6

Our study confirms the good results which can be obtained by use of EPO in anaemic cure of chronic uremic pts, but above all it confirms that sc administering instead of iv allows on average saving of 30% of EPO. Cardiovascular stability has been held without clear pressure rises thanks to a gradual increase of haematic values too.

Trisodium citrate 5% vs. heparin 5000 IU/ml lock in permanent dialysis catheters: a comparative prospective randomised study

038

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Background: Heparin 5000 IU/ml is commonly used as an anticoagulant in permanent haemodialysis catheters in order to prevent thrombosis during the interdialytic period. Urokinase, tPa, oral anticoagulation or high concentrated solutions (35%) of trisodium citrate are alternatives. Citrate has important advantages over heparin: it is cheaper and it doesn't expose patients to the risk of systematic heparinisation or heparin-induced side effects.
Study design: The efficacy and safety of a low concentrate (5%) trisodium citrate lock versus heparin 5000 IU/ml lock in permanent single lumen haemodialysis catheters was prospectively evaluated. Clot formation, catheter occlusion, flow problems, costs, need for thrombolytic therapy and catheter infection episodes were monitored during a six month period in 19 haemodialysis patients (1370 dialysis sessions). Patients were randomised in two groups: trisodium citrate 5% (n=10) vs. heparin 5000 IU/ml (n=9). All patients were dialysed for 3 x 4 hrs/week (mean).
Results: Significant more minor clot formation was found in the citrate croup (14.4% vs. 6.9%; p=0.0000046). This had no clinical repercussion on dialysis efficiency, effective blood flows or on the need for urokinase (bolus or infusion). No differences were found between the two groups in terms of obstruction of the catheter or the incidence of catheter infections. Patients reported no side effects. A trisodium citrate 5% lock is more cost effective (0.27 Euro vs. 1.12 Euro/lock). Conclusion: Trisodium citrate 5% is a safe alternative for heparin 5000 UI/ml for long-term interdialytic anticoagulation of permanent single lumen haemodialysis catheters. It is a more efficient method from a pharmaco-economical point of view.

Treatment of critically ill patients with acute renal failure in the intensive care with slow low efficiency on-line haemodiafiltration: Nursing and technical experience

039

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Since its inception renal replacement therapy (RRT) for the treatment of acute renal failure (ARF) has been performed in intensive care units (ICU) with or without nephrology nursing support. Besides the RRT modality choice (continuous versus intermittent approach) institution specific factors have affected the structuring of nursing care and the preferred nursing model for RRT in the ICU.
Since 1996 we have opted for on -line haemodiafiltration in a slow, low efficiency daily setting (SLED-HDF) for all patients in severe conditions of haemodynamic instability. SLED-HDF is performed in ICU under the supervision of the haemodialysis tearn .
Daily treatment time is 10 hours (08.00 -18.00).Modified dialysis monitors are used to carry out SLED-HDF with QB:200 ml/min, QD:50-80 ml/min and substitution flows up to 50ml/min. Routinely we are using two catheters as angio-access. Our goals for SLED-HDF are: daily predialysis BUN ≤50mg/dl , creatinin ≤2 mg/dl and total ultrafiltration: ≤300 ml/hr.
To prevent and limit adverse events a periodic check of treatment parameters is done by the renal nurse. If necessary the dialysis nurse can be reached at any time (buzzer), therefore ongoing collaboration and commitment of the ICU nurses in case of intermediate alarm is necessary.
SLED -HDF provides a high standard of patient treatment , allowed for an optimal control of the uremic syndrome and volume status, with patient survival rates of 51% (1997-1998) and 52.4 % (2000) With a increasing number of ARF patients in the ICU-unit this approach enables us to manage the renal support of ARF patient in the ICU within normal haemodialysis nursing work schedules and with an acceptable effect on overall workload for both the renal and the intensive nursing team.

The role of the nurse in vascular access 191

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The team approach to the delivery of health care has always been important and has become more so since the boundaries between the professional groups have become blurred. Renal replacement therapy requires that the patient has adequate access. An arterio-venous fistula or a long-term vascular catheter provides blood flows in excess of two hundred millilitres a minute thus ensuring adequate blood level clearance. Surgeons and medics have historically always provided access for dialysis patients. Placement of vascular access is a lengthy process for the patient causing long delays and anxiety, often involving a hospital admission. When a patient presents with access problems, this has an effect on dialysis space allocation and length of dialysis time available. Due to the reduction in junior doctor's hours and the further demands on the senior medical staff, a nurse was nominated to take on the role of vascular access specialist. Before the role was developed a two-year clinical MSc was commenced to underpin the clinical experience gained by the specialist during her orientation time with the medics. This role would provide focused individualised care specifically targeted at the renal service. It has been shown through audit, that placement by an experienced practitioner can reduce complication rates, failure rates and infection levels. An improved insertion technique is quicker and less painful, access lasts longer because of the above and waiting time is reduced. This provides the patient with a more efficient access service and problems are dealt with quickly through direct clinical pathways.

Determination of arteriovenous cannulation approach differences between the institutions and nurses 085

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This study has been arranged for the determination of arteriovenous cannulation approach differences between the institutions and nurses. A total of 50 nurses from different units were included into this study. The poll form consisted of 11 questions which aimed to determine the socio-demographic properties of the nurses and total 47 questions of arteriovenous cannulation procedure control schedule which was improved by us, with the use of literature was performed.
The collected data were analysed in the computer using the (SPSS) package. For evaluations of the data acquired, the percentage distribution of the poll form and the arteriovenous cannulation procedure control schedule data were calculated.
In statistical terms, highly significant differences were found between the institutions in respect of the implementation of arteriovenous cannulation. According to the data acquired, statistically significant differences were found between the institutions and with regard to the education, in the pre-implementation stage of arteriovenous cannulation procedure whereas no major statistically significant differences were found between the institutions and with regard to the education, in the stage of implementation of the procedure and it was found that a great majority of the nurses acted in compliance with the relevant literature in comparison with the pre-implementation stage of the procedure.
In the post-implementation stage significant differences were found among the institutions, in terms of education, working period in the unit and in-job training status.

Paediatric

Pity?! 015

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We frequently pity children with chronic illness. While sympathy and caring are helpful, pity is destructive. A.D. (17) was on haemodialysis. Although intelligent, he dropped out of school. A.D.'s family couldn't deny his demands. As his disease progressed, A.D. couldn't cope and shrieked pitifully during haemodialysis. When told we can't help him "if he won't help himself," A.D. replied, "I want to, but I don't know how!" A.D. died last summer, unhappy and a victim of his illness. G.D. (20) has cystinosis. He's been on dialysis since age eight and had an unsuccessful kidney transplant at 14. G.D. has no friends. He is often non-compliant during dialysis and shouts, "You have no pity for me! My teachers understand I'm sick. My father stays awake with me when I can't sleep. Only you don't give an inch!" G.D. has not sought work and remains at home. C.L. (8)'s renal disease was caused by intrauterine bilateral renal artery stenosis. He suffers from craniosynostosis, has been blind since he was two, and because of hydrocephalus has a ventricular-peritoneal shunt. C.L. began dialysis at eight months and has undergone a successful kidney transplant. C.L.'s parents are raising him as a "normal" child: he goes to the movies, rides a bicycle, dresses and feeds himself, cares for his baby brother and is a successful student.
One can: (1) focus on the child or (2) be overwhelmed by his illness. Children need limits; without them, they won't become functioning adults. Pitying ill children condemns them to a marginal life. Modern technology has enabled children with end-stage renal disease to live into adulthood. But what will be their quality of life if we do not teach them how to live.

Peritoneal Dialysis

Causes of late leaks in peritoneal dialysis patients 066

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Continuous ambulatory peritoneal dialysis (CAPD) is generally well tolerated treatment and new techniques improve its tolerability, but late leakage is still an important complication of CAPD. A retrospective study evaluated the late peritoneal leaks in 50 patients whom a permanent peritoneal tenckoff curled dialysis catheter was inserted either percutaneously or surgical approach. All of the patients were on CAPD more than 3 months with one catheter. We examined 25 patients, who had peritoneal leakage (19 female, 6 male, mean age 56 ± 14) and 25 patients, who had no peritoneal leakage problem (10 female, 15 male, mean age 57 ± 12). Patients were analysed according to their demographic characteristics such as; age, sex, body mass index (BMI), body surface area (BSA), primary renal disease, membrane transport properties, the side of catheter, implantation techniques of catheters, daily total filling volume, membrane clearance characteristics (creatinin clearance, KT/V). Peritoneal leaks were significantly high among female patients, 76% of them were female ($p<0.05$). The patients who were on CAPD regimens had a greater leakage risk than the patients on APD regimens ($p<0.05$). All of the patients who leaked had the low/low average transport properties. Also creatinin clearance of membrane was significantly low in the patients who leaked lately ($p<0.05$). Left sided catheters leak more than right side catheters. There were no statistical difference for age, primary renal diseases, BMI, BSA, KTN, implantation techniques, daily total filling volume.
In conclusion female gender is a risk factor for peritoneal leaks in CAPD patients and left sided catheters cause peritoneal leaks more than right sided catheters. Peritoneal leaks can be the cause of low transport properties of peritoneal membrane.

Compliance in automated peritoneal dialysis (APD) 060

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Compliance in peritoneal dialysis is reported as being a significant problem. In CAPD, the percentage of non-compliant patients varies between 10 and 40%. In APD the phenomenon seems to be more limited, but regards in any case 20%(Bernardini, 1998)/15%(USRDS, 1996). The use in APD of machines able to record dialytic sessions has numerous advantages, and besides catering for a more precise dialytic prescription, it also allows its implementation to be checked.
In this study, the compliance of our population has been assessed using Home Choice Pro.
Materials and methods:
We considered 23 patients who had been on APD for more than 3 months (age 68 ± 11 years, M/F: 16/7). The dialytic treatment was performed in 13 cases by the patients themselves, in 7 by members of the family and in 3 by center nurses. The night-time session lasted 8-10 hours; only 3 patients maintained an empty abdomen during the day. The dialytic treatment was performed using the Home Choice Pro device to record all the parameters of the dialysis session.
The last 30 days of treatment were considered in the assessment of compliance, evaluating differences in daytime and night time volumes between the prescription and the actual treatment, the length of the night time session, and the days of treatment.
Results: As regards volume and duration, no differences were found compared to the dialytic prescriptions. For the days of treatment a difference was only found in 3 patients: 2 self-administered patients missed 1 day of therapy out of 30 and in both cases the missed treatment was agreed with the center: non-compliance was only found in 1 patient (4.3%), whose treatment was performed by the family, and who missed 4 days out of 30.
In conclusion, compliance with the dialytic treatment is confirmed as being very high in patients on APD. This may partly depend not only on the method's characteristics, but also on the preparatory work carried out before the treatment begins and the follow up afterwards (home visits, etc.) in accordance with protocols used in our center.

Home training experience in peritoneal dialysis patients 108

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Regular home visits are an important part of follow-up care. In 1995 we started to perform home visits for each new peritoneal dialysis patient starting dialysis. In 1997 we made a home care program by PD nurses including patient training at home and periodic home visits for nursing care implementation to evaluate the exchange method or cycler connection. The aim of this paper was to know the effectiveness of performing patient training for peritoneal dialysis at home.
From 1997 to 2000, we have carried out 107 training: 55 for CAPD, 16 for APD and 36 for change of treatment (CAPD to APD). The mean age of these patients was 56.1 years, 53.3% male and 46.7% female. The training was performed completely at home in 95% patients, partially at home in 4% and at Hospital in 1%. The mean time dedicated for training was five days in CAPD (five hours per day), seven days in APD (five hours per day). For change of treatment we used five days (two hours per day). The incidence of peritonitis decreases from one episode/24.6 patient/month in 1996 to one episode/44.5 patient/month in 2000. The patients expressed a very good opinion about the program. The nursing team was very satisfied because an early know-ledge about the psychosocial status of the patient and family was established.
In conclusion, with the home training program there is a high level of satisfaction, expressed by the patients and the nurses. We have dedicated an adequate amount of time and the incidence of peritonitis has diminished. So, it is an effective way to teach PD patients in our unit.

The effect of peritoneal protein losses on nutritional status in CAPD patients 158

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Malnutrition frequently complicates CRF, particularly those requiring dialysis, and patients receiving CAPD may be the most vulnerable. Loss of proteins into the peritoneal effluent is well recognised in CAPD patients, but the effect of this upon nutritional status has not been wholly addressed. Fifty patients with ESRF who had been established on CAPD for more than three months were included in this cross-sectional study. Patients had not previously been recognised as having malnutrition and they all received nutritional advice according to unit protocol. No patients had had CAPD-related peritonitis within 3 months of the study. Peritoneal protein losses (PPL) were measured in complete 24 hr collections of peritoneal effluent. Nutritional status was assessed by anthropometry (mean mid-arm circumference, MAC), subjective global assessment (SGA) and serum albumin. Mean (± SD) PPL was 6.9 ± 3.2g/24hr but there was wide inter-patient variation (range 3.4-19.3 g). SGA indicated that 56% of patients were malnourished (SGA score 2 or 3), and 84% of patients had MAC within the lower 5th percentile. PPL was significantly greater in patients with SGA indicative of severe malnutrition (mean 10.8 g/24hr) than in those without malnutrition (6.6 g/24hr, P = 0.049). Our findings are of concern as a large, representative and nutritionally unselected proportion of our CAPD patients had evidence of malnutrition despite their having access to a dedicated dietetic service. PPL was greatest in the most severely malnourished patients, and is likely to have contributed to this problem. It is suggested that patients with large PPL should be identified early as they may fare better after transfer to haemodialysis.

Subjective and objective evaluation of quality life (QOL) in patients treated by peritoneal dialysis 089

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We were interested in the impact of peritoneal dialysis (PD) on patients' quality of life. Our goals were to assess:
1) How patients themselves perceive some aspects of their life on PD
2) What is the level of physical functioning of patients assessed by a nurse
3) What are the differences between patients with highest and lowest QOL scores.

We followed 10 patients, 4 men (mean age 62 yrs) and 6 women (mean age 64,8 yrs), treated by PD for at least a year. the mean duration of PD treatment was 2,1 years (1-4 yrs). Data were collected from September 1999 to May 2000 in 1-2 month intervals (4 measurements for each patient). Patients evaluated five aspects related to QOL: fatigue, mood, appetite, limitations caused by the therapeutic method and interference of the method with their daily activities. For the evaluation a 10 grade graphic score was used, with higher number representing a higher quality of life. At the same time a nurse assessed an objective physical functioning of the patient using the Karnofsky score
(0-100, 100 being the best performance). The results have shown that patients perceived the fatigue as the most limiting factor for their QOL. The mean Karnofsky score was 80 - the patient demonstrates some signs/ symptoms and requires some effort to carry out normal activities. Comparison of patients has shown that highest quality of life have those with the best family background.

Causative microorganisms in diabetic and non-diabetic peritonitis patients 081

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Peritonitis is the most common complication of CAPD. Despite all the difficulties, the isolation of causative microorganisms is the basis of treatment. In this study the microorganisms isolated as the cause of peritonitis in CAPD patients are given. In this study the microorganisms isolated from 112 peritonitis episodes that developed in 67 of 118 patients who are under our follow up between 1997-2000. Peritonitis was diagnosed when there were abdominal pain, cloudy dialysate and peritoneal fluid cells>100/ml (more than 50% neutrophils). In Gram staining microorganisms were detected in 23 of 112 isolates (20.5%). Cultures were positive in 84 (75%) of all the isolates. Microorganisms were detected in gram staining in the 25% of the positive cultures. Peritonitis frequency in diabetic (DM) patients (1 episode/patient) is higher than nondiabetics (0.7 episode/patient) ($p<0.05$). The microorganisms isolated from the dialysate cultures of diabetic and non-diabetic CAPD patients are as follows.

MICROORGANISMS	DM (Number)	Non-DM (Number)
Gram-positive		
Staphylococcus aureus	7	13
Staphylococcus epidermidis	7	17
Streptococcus spp.	3	5
Diphteroids	1	3
Gram-negative		
Enterobacteriaceae	1	6
Pseudomonas	2	2
Non-fermentatives	3	8
Fungi	3	1
Mycobacterium tuberculosis		1
Negative culture	6	23
TOTAL	33	79

Peritonitis incidence is higher in diabetics than in non-diabetics. The most frequent causative organism is Staphylococci in all patients (DM + non-DM). Fungal peritonitis looks like more frequent in diabetics. It should be kept in mind that dyphteroids, mycobacteria and fungi might also be causative.

Efficacy and tolerance of increased fill volume in our patients 082

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The achievement of uniform adequacy standards in patients on peritoneal dialysis (CAPD) requires adaptation of prescription to body size and peritoneal transport status. Increases in either fill volume or number of exchanges have been proposed with the former having the potential of causing abdominal discomfort and the latter negatively impacting patients quality of life. We evaluated in 13 of our patients on CAPD (7 males, 6 females) the impact of an increase in fill volume on adequacy profile and therapy tolerance. Twelve of the patients were anuric, ten were on 4 exchanges of 2L and 3 on five exchanges of 2L. They had a mean age of 35 years (range 25 to 52), an average body surface area of 1.66 m2 (range 1.36 to 1.90), and a mean duration on dialysis of 14 months (range 1 to 48). The PET suggested a preponderance of low and low average transport (mean D/P creatinine 0.58). All patients were changed to a regimen of 4 exchanges of 2.5L per day. Mean weekly Kt/V increased from 1.72 + XX to 2.21 + 0.37 ($p<0.01$) and creatinine clearance from 48.8 + yy to 59.9L /1.73m2 /week ($p<0.01$), over a follow up period of 2 to 7 months. There were no new episodes of leaks or hernia development with the increase in fill volume, and except for a decline in appetite in 3 patients, there were no reports of discomfort or intolerance. We conclude that increasing fill volume is a very effective means of improving dialysis adequacy in patients on CAPD and that the change is safe and not associated with any untoward side effects.

Psychosocial Care

Communication with the learning disabled patient on dialysis. Implications for nursing staff. A case history approach 145

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Renal failure as a physiological problem in itself is debilitating and challenges the most able of individuals. However in the patient that has a special need, the care and attention required is perhaps the most challenging for renal nurses.
This paper therefore describes issues facing individual patients , their needs and the difficulties facing staff in that unit.
Implications for nursing staff:
In order to care for patients with either a mental health problem or a learning difficulty the staff require an array of skills, that are in addition to the complex attributes required of the renal nurse, these are:
Underpinning knowledge to understand the legalities involved especially in relation to informed consent and other ethical considerations. Of equal importance is the knowledge of health care facilities that are available to support the patient and the carer.
Communication skills are vital to ensure that the patient and their needs are understood by the nurse. It should be noted that perhaps the most important skill required here is that of non-verbal communication or therapeutic touch.
Finally perhaps the most important skill of all is that of an attitude that is tolerant and empathetic, with expectations that are realistic.
It is with this in mind that case histories of specific patients, and how their needs have been met, will be shared.

Changes in employment status during the first year of dialysis treatment and its determinants 208

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We investigated to what extent the working status of incident ESRD patients changes over time and we examined determinants of becoming unemployed. 659 consecutive ESRD patients (374 haemodialysis (HD), 285 peritoneal dialysis (PD)), between 18 and 65 years of age, were included at the start of dialysis in 38 Dutch dialysis centers. Demographic, clinical, physical and psychosocial functioning (SF-36) data were assessed at the start of dialysis. Data on employment status were collected at baseline and again after 12 months. About one third of the patients was employed at the start of dialysis (35%), versus 61% of the Dutch general population. Within one year, the proportion of employed decreased from 31 % to 25% in HD-patients and from 48% to 40% in PD patients. The majority of the patients that became unemployed within 12 month received a governmental disablement benefit (90%). A minority became unemployed because of (early) retirement (3%). Patients at risk for becoming unemployed after 12 month of dialysis initiation were those with a score on the physical or psychosocial summary component of the SF-36 lower than 33.5 (odds ratio$_{physica}$l: 3. 4, CI: 1.0–11.2 odds ratio$_{psychosocial}$: 4.2, CI: 1.2-14.2). Age, gender comorbidity, primary kidney disease, serum albumin and body mass index were not significantly associated with change in employment status after 12 months. In conclusion, two thirds of ESRD patients were unemployed already at the start of dialysis. Thus, prevention of loss of work is an important issue both in predialysis and dialysis patients. Improvements in physical and psychosocial functioning are potentially preventive for loss of work.

Establishing the role of renal counsellor in response to patient demand

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Since the early days of dialysis the psychological problems associated with the treatment of chronic renal failure have been identified (Kaplan-de-Nour and Czackes 1968). However, the role of renal counsellor is relatively new and scarce. Most renal units do not have an in house counselling service. Our unit was no exception despite being long established with a large number of patients on renal replacement therapy. The benefits of counselling are difficult to quantify making it hard to fight for precious resources to fund a service. This changed when a patient offered to part fund a counsellor's post. Having encountered many physical and psychological problems as someone with renal failure, he identified a need that was not being met. In particular, he felt that patients on home based treatments and their carers, would benefit from additional support. The role was established with the focus being on counselling skills and teamwork rather than any previous knowledge of caring for those with renal failure. In the first three months of the project 39 people have contacted the counsellor. Most of these were patients but some were carers. A series of workshops for staff have been initiated to raise awareness of the role and facilitate further discussion about patients' psychological needs. This paper highlights the role of patients in initiating and steering the project. It will also discuss how the skills of an experienced counsellor have contributed to the multi professional team and how this patient centred project is expected to develop over the next 2 years.

Perceived health, self-management and social support of dialysis patients

008

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The purpose of this study was to describe the perceived health, self-management and social support of dialysis patients. The data were gathered by questionnaires and analysed by using descriptive statistics and cross-tabulations. The sample (n=50) included 39 CAPD patients and 11 HD patients (28 men, 22 women, mean age 56.4, SD + 16.3, range 22-86). The mean duration of dialysis treatment was 3.0 years (SD + 4.8, range 0-26). According to the findings, 31% of the informants perceived their health to be good, 59% moderate and 10% poor. Compared to their health a year before, 50% of the subjects reported their health to be better, 25% to be unchanged and 26% to be worse. The hardest thing to manage with was the restrictions on every-day life. The majority had received information about the different treatment modes and had had an opportunity to take part in the decision concerning the choice of treatment. However, 40% of the subjects had not been given enough information about the social benefits available to them after the diagnosis. The majority considered themselves to be taking good care of themselves as far as the diet and medication were concerned, but did not get enough exercise. Some statistically significant ($p<0.05$) relationships were found between perceived health, having good knowledge about self-care and taking good care of themselves. Most subjects perceived to get emotional, practical and informational support from their family and friends. However, many respondents perceived to get too little peer support from other people with dialysis treatment, although they considered it important. Visiting friends and neighbours had decreased quite much or very much after the beginning of dialysis treatment. To conclude, the tailoring of effective nursing interventions compatible with the perceived health and subjective experience of dialysis patients requires information from the patient's point of view.

Living on dialysis: the client discourse in the renal context

002

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This paper is based on a qualitative study seeking to understand the experience of one group of renal clients. The study developed a critical interpretive methodology in order to understand the experience of living on haemodialysis, seeking individual's interpretations of their experiences but interpreting them by contexualizing them, from a distinctive critical stance, as expressing a number of common 'concerns'.

Applying concepts derived from the French social philosopher Michel Foucault, the renal setting can be understood in critical terms as a specialized social context constituted by several interrelated discourses. These include a dominant discourse reflecting the professional viewpoint, and a client discourse made up of several concerns that is a response to this, reflecting the perspective of people living on dialysis that underlies individual's interpretations of their experience.

From an analysis of accounts of their experience based on intensive interviews with six men this study delineates four concerns of the client discourse: suffering from symptoms of CRF and dialysis, negotiating the requirements of dialysis to fit their lifestyle and the limitations involved, the ongoingness and uncertainty of life on dialysis and the hope of a transplant, and the altered interrelationship between autonomy and dependence inherent in living on dialysis.

One implication of this study is that the professional nursing relationship with renal clients, though often articulated in terms of the ubiquitous language of compliance, is better conceptualized as negotiated care, supporting people to integrate the requirements of the dominant discourse with the concerns of the client discourse in their lives.

Interdisciplinary communication for the diabetic renal client

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Interdisciplinary care is recommended by Ritz et al (1999) to provide optimal diabetic and renal control. Rodriguez et al (1 997) suggest that diabetic nephropathy is preventable in principle and requires organization of multidisciplinary services, with particular attention paid to arterial hypertension and dyslipidaemia to delay the progress of IHD, a major risk factor in the diabetic patient on renal replacement therapy (RRT).
A crude analysis of all deaths on our renal unit computer database was carried out (n=576 patients). The mean time on RRT for the diabetic patients was 1469 days (IDDM) and 1543 days (NIDDM), 4 and 4.2 years respectively compared with 2562 days (~7 years) for the non-diabetic. Age and other co-morbid factors were not taken into consideration, however these crude figures indicate that diabetics do less well on RRT.
Each meeting with the diabetic patient provides an opportunity for holistic assessment. Thus each health professional needs to be in possession of the full facts of the case, requiring good interdisciplinary communication. A small audit of 7 diabetic nephrology patients' case records was carried out to assess interdisciplinary communication. Each patient's diabetes care was organized differently with some patients attending their GP surgery for follow-up, others attending district hospitals and others attending a diabetologist within the same hospital. Chiropody and ophthalmology were also organized differently for each patient. In effect, each patient could be attending 5 different places for their care needs. There was some evidence of fragmented care.
We thus devised a 'Diabetes Record' card for the renal diabetic patient to carry. This provides basic information (not always readily available in the notes)- type of diabetes, diabetic medication/dosages, other medications, clinic visits and contact details of all health professionals involved in the patient's care in order to facilitate communication. This we have circulated to all pertinent professionals for comment on its usage. We also intend to attain patient's comments, as it would only work if the patient utilized it. The results of this will be available soon.
Integrated care with open communication is vital to provide optimal care and help reduce complications in this client group.

Managing changes in responsibility for prescribing specialist medicines

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PROBLEM: Historically, funding for Specialist Medicines was provided by General Practitioners (GP's) from their medication prescribing budgets. In April 2000 GP's decided to cease prescribing certain specialist medicines and funds were transferred to specialist units.
PURPOSE: The challenge was to formulate a system to allow the transfer of responsibility for prescribing erythropoietin (EPO) to take place safely, with minimal risk and disruption to patients treated for anaemia within a defined allocated budget.
DESIGN: Following discussions with all multidisciplinary staff involved in the process of prescribing EPO, a database was designed and became fully operational in October 2000. The main functions of the database are to monitor and manage individual prescriptions, print prescriptions on demand and produce financial reports as required.
FINDINGS: A total of 127 patients were transferred from 49 different GP practices during the first two weeks of October. To date we have 189 patients in our database, on average we issue 109 prescriptions a month, giving each patient 6 weeks supply of EPO.
CONCLUSION: Early evaluation suggests the prescription manager database has been appropriate and effective in the transfer of responsibility for prescribing EPO. It assists with balancing the books whilst maintaining standards of care in the treatment of anaemia.
RELEVANCE: Prescribing specialist medicines has become an issue placed high on the agenda in specialised units. Although the transfer of responsibility for prescribing EPO was driven by financial factors our goal was to ensure the needs of the patients were put first and foremost.

An evaluation of pharmacist recommendations on patient outcomes in a CAPD clinic

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Background: Many UK renal units have specialist pharmacist input, however pharmacist input in clinics has not been widely assessed. Patients on continuous ambulatory peritoneal dialysis (CAPD) have complex drug regimens and a high incidence of drug related problems (DRPs). Pharmacist intervention in DRPs may improve patient outcome.
Aim: To evaluate DRPs in a CAPD clinic and the clinical outcomes of a specialist pharmacists' recommendations.
Method: CAPD patients were seen in a multidisciplinary review clinic comprising consultant nephrologist, registrar, renal pharmacist, renal dietitian and CAPD nurses. Clinic records for 41 patients, pharmacists' recommendations and consultant and registrar acceptance were reviewed. Clinical data (e.g. BP, Hb, Ca/P04) were collected to assess outcomes.
Results: A total 41 patients were seen in 51 clinic appointments, median age 55, 44% male. Patients received a median of 9 drugs (range 5-19). Of drug histories documented, 89% were inaccurate. Pharmacists made 2.12 recommendations per patient, 85 % were accepted. The most common recommendations were initiation or increase in therapy (44%), update inaccurate drug history (22%) and stop or reduce therapy (13%). Outcomes were available for 41 patients, 40/60 (67%) clinical parameters improved after pharmacists recommendations.
Conclusion: CAPD patients have multiple drugs and many DRPs, requiring continual review of therapy. A high proportion of pharmacist recommendations were accepted. Specialist pharmacist's input improves patient outcomes by ensuring optimal therapy and accurate medication documentation.

Inequalities in health: a comparative analysis of the impact of health care systems in Germany and the UK on renal care provision

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Both the German and UK health care systems offer free access to health care at the point of delivery. Health care funding in Germany uses an insurance-based system, whereas the UK relies on funding from taxes. Renal care provision expressed by the take-on rate for new patients starting renal replacement therapy differs significantly between Germany and the UK. In 1994/5, Germany treated 125 new patients per million population, whereas in the UK 72 new patients per million population started treatment (Hörl et al., 1999). Pre-existing disease, ethnic background and age do affect the likelihood of incidence of end-stage renal failure (ESRF), but this does not explain the variations between the two countries as demographics are similar. The gap in care provision could be seen as a direct reflection of the proportion of GNP spent on health care - 7.1% in the UK, 8.6% in Germany (1994).
Data for our local regional unit were collected and compared to these trends. This project set out to explore the reported differences in health care systems and outcomes and investigated the potential impact on renal care provision.

Initiating an integrated approach towards nursing documentation 144

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A new system of record keeping was introduced on a 24-bed acute renal medical ward to allow health professionals to utilise a single set of notes. This allows entries to run continuously on one page instead of separate files for each multidisciplinary field.
The United Kingdom Central Council for nurses emphasises the importance of sharing knowledge, stating it is clearly impossible for any one profession to possess all the knowledge, skills and resources needed to meet the total health care needs of society - good care should be the product of a good team.
Prior to the trial 42 questionnaires were circulated amongst members of the multidisciplinary team (MDT). 35/38 respondents agreed to participate. An audit comparing information in nursing records and medical notes clearly indicated the repetitive nature of entries with similar information being recorded by both disciplines and conversely obvious discrepancies with the omission of information between disciplines.
Evaluation 6 months later indicated that communication has improved. An enhanced awareness of the professional contribution of others has been established. Problems accessing notes (as they can only be used by one person at any given time), was one of few criticisms. A repeat audit of this shared documentation showed that information appeared to 'flow' with minimal repetition.
A valuable reference tool reflecting clarity of patient progress has evolved which in turn facilitates reliable and consistent communication between staff and patients alike. Indeed, a comprehensive record of care and planned initiatives has been developed to help manage the complex needs of patients with renal failure.

Using clinical audit to reduce the incidence of automated peritoneal dialysis peritonitis 163

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In recent years automated peritoneal dialysis (APD) has grown in popularityfor social as well as medical reasons. We are one of the largest units in Europe and we currently have 48 patients treated with APD which presents 15% of the peritoneal dialysis (PD) programme. A clinical audit of the PD population is conducted annually. The 1999 audit revealed a significant increase in APD peritonitis which resulted in a peritonitis rate higher than the recommended national standard (Renal Association 1997). A study was undertaken within the PD unit to:
1. Identify reasons for the increase in APD peritonitis
2. Take action to achieve the national standards benchmark.
The organisms causing the peritonitis indicated that touch contamination may be responsible for the increase. Telephone questionnaires were conducted with all APD patients (n=76) to identify and compare techniques and procedures in use at home. This highlighted inconsistencies and incidences of poor practice. The nursing team undertook a review of current procedures, including methods of patient/carer education. Changes in practice were implemented and workshops were set up to re-educate patients and carers. The community PD nurse also conducted individual sessions in the patients' homes. Twelve months later a further audit showed that the incidence of APD peritonitis had been considerably reduced from 1 in 11 patient month's experience to 1 in 17.
This study illustrates how nurses, patients and carers can work together, in partnership, to improve outcomes. It also demonstrates how clinical audit can be effectively utilised as a quality improvement tool in a PD unit.

The role of the renal diabetes nurse specialist (RDNS), a luxury or an essential player? 166

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Diabetes is now the single largest cause of chronic renal failure and as the number of patients referred to a nephrologist increases, the needs of the diabetic nephropath are not being met. Currently there are 733 patients at our renal unit, 190 of these referred between December 1999 and December 2000.
A large percentage of patients were not having their diabetes reviewed by any specialist (GP etc.) due to patients failure to attend and their preference to be seen at the nephrology clinic for both diseases.
This paper will show how one unit has developed the clinical role of the renal diabetes nurse specialist over the last 1 1/2 years as a way of addressing many of the issues surrounding diabetes care and meeting the numerous challenges of expanding this role into the 21st century.
Fewer deaths, less needing dialysis and the ability to slow down the need for dialysis gives the patient a greater quality of life pre ESRD. 10% of non-diabetics having immunosuppresents develop drug induced diabetes and this presents another aspect to patients care. The financial benefits to the NHS health expenditure is immense plus relieving the pressures on beds, dialysis slots and transplantation waiting lists make the renal DNS an essential role within the renal multi-disciplinary team.

Research into older dialysis patients' experience of care 169

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Renal services have seen increasing numbers of patients aged over 65 years in recent years, due both to a growth in the older population and to a relaxation of dialysis selection criteria. However, a number of factors relating to ageing (such as the added complication of comorbidity) may result in key differences in service need between older and younger renal patients[1].
Previous studies have looked at issues such as outcomes and costs of older renal patient care[2] , but no study to date has appeared to look at patient experience and the process of care. This paper outlines a preliminary study conducted in one renal unit, which aimed at developing an understanding of these issues. In keeping with the study's exploratory nature, a multi-method approach to data collection was taken, including a documentary review of renal unit records, tracking of patients' experience of service delivery and interviews to determine patients' perceptions of care. Findings suggest that services may not be ideally configured to meet the complex needs of older renal patients. The paper explores some of these issues and the need for further research.

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Improvement in quality of life of dialysis patients during a 6 month period of aerobic exercise training 177

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Quality of life (QOL) is usually measured using one of a number of questionnaire-based instruments, with domains to do with physical, emotional and mental functioning, which may or may not reflect the subjects' personal perceptions. We have chosen to use a nonquestionnaire-based instrument, the Schedule for the Evaluation of Individual Quality of Life (SEIQOL). This is a patient-centred structured interview technique in which the subject is asked to choose 5 themes that impinge on their own view of QOL, to score each theme and then rank them, to give a final weighted score out of 100. We report the effect on SEIQOL of a 6 month exercise training intervention, consisting of 3 sessions/week of 40 minutes of accumulated moderate-intensity aerobic cycle ergometer exercise. 18 dialysis patients, 10 HD, 14 men [(M±SD); age 58.3±15.2 years, time on dialysis 42.2±44.1 months, Hb 12.0±1.41 g/dL], completed the programme. Patients' SEIQOL was measured at the start and at 3 and 6 months of exercise, and compared with that of 22 age-, gender- and activity-matched normal subjects. Patients' SEIQOL score was significantly lower than normal subjects before the exercise, programme (65.5±21.8 v 77.2±15.3, $p<0.05$, independent t-test). Repeated measures ANOVA showed an overall significant improvement in SEIQOL over the exercise period (67.3±19.7 at 3 and 80.5±15.2 at 6 months, $p<0.01$). Post-hoc analysis showed significant differences ($p<0.05$) between 0 and 6 and 3 and 6, but not between 0 and 3 months. Patients SEIQOL score was insignificantly different to normals after 6 months of training.

Do demographic variables affect the timing of referral to the nephrologist? 186

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The consequences of late referral for nephrological care include: increased morbidity, poorer quality of life on dialysis and probably increased mortality. Few studies look at the socio-demographic factors which influence referral to the nephrologist. There is good evidence from studies in other areas of health care that socio-demographic and economic factors influence access to health care. It is important that the nephrology community understands who the individuals are who likely to be late referred so that we can address any inequality in access to services. We studied all of the patients who started renal replacement therapy in our unit over a five year period, 1st January 1996 to 31st December 2000 (n=494). We collected data on gender, age at referral, ethnicity, the date that the individual started dialysis as well as the date they were first seen by a nephrologist. We analysed the data to see if age, gender or ethnicity were associated with timing of referral. If an individual had seen a nephrologist more than three months prior to starting dialysis they were termed "early referred", if not they were termed "late referred". Since this is a sociologically driven research project we set statistical significance at the 10% (0.1) level. Our data showed that gender did not affect the timing of referral (p=ns), ethnicity affected referral in so much as whites were more likely to be referred late than blacks (p=0.08) but no more so than non-whites (p=ns). People under the age of 30 were statistically more likely to be late referred than people over the age of 30 years (p=0.027) as were people under the age of 40 (p=0.047). We interpret these finding as demonstrating that health care professionals are referring older people and people from the black community in good time and that, in contrast to other studies of inequalities in health, these findings demonstrate that the elderly and ethnic minorities are not being disadvantaged.

Serum albumin in dialysis patients is method-dependent: BCG overestimates and BCP underestimates true levels 207

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Serum albumin is an important risk factor for mortality in dialysis patients. The measured value of albumin, however, depends on the method used. This could be a serious problem in multicenter studies in which local albumin measurements, assessed with different methods, are combined.
Objective: We investigated in a multicenter study the combined use of different methods of albumin detection: bromcresol green (BCG) and bromcresol purple (BCP).
Methods/results: We collected serum samples from a mixed group of dialysis patients (n=418) in 15 Dutch dialysis centers of which 9 use BCG and 6 use BCP. We compared albumin values examined in the centers by BCG or BCP (BCG-albumin and BCP-albumin) with albumin examined in the same samples by a centrally performed immunonephelometric method (i-albumin) which is considered as the reference method. BCG-albumin values (n=247, mean 39.4g/l-SD5.1) were higher than BCP-albumin values (n=171, mean 33.8g/l-SD4.6, $p<0.01$). Mean i-albumin values of BCG-tested samples (36.6g/l-SD5.8) were similar to those of BCP-tested samples (35.5g/l-SD5.5). Correlation between BCG-albumin and i-albumin was 0.69 ($p<0.01$), and between BCP-albumin and i-albumin was 0.77 ($p<0.01$). Analyses of agreement showed that BCG-albumin overestimated i-albumin levels with mean 2.8 g/l-SD4.4, ranging from -6 to +11.6 (=limits of agreement). BCP-albumin underestimated i-albumin levels with mean -1.8g/l-SD3.6, ranging from -9 to +5.4 (=limits of agreement).
Conclusions: The limits of agreement of BCG-and BCP-albumin were too large to estimate true albumin levels from the locally determined levels. Thus, a centrally performed reference method is preferred to study the effect of serum albumin on patient outcome in a multicenter study.

The dialysis diet and fluid non-compliance questionnaire (DDFQ): Validity testing of a self-report instrument for clinical practice 041

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Objective: This study evaluated the validity of the dialysis diet and fluid non-compliance questionnaire as a self-report instrument for clinical practice. The DDFQ was designed to measure non-adherence behaviour with diet and fluid guidelines in patients treated with hospital based haemodialysis. Design: A multicentre cross-sectional study design was used. Sample: The convenience sample of this study included 564 patients (49.1% male, 50.1% female) from 10 dialysis centres. Median age was 68 years (Q1 = 21, Q3 = 90), median length of time in dialysis was 29 months (Q1 = 1, Q3 = 297). Instruments: The DDFQ is a new developed patient self report instrument consisting of four sub-scales. Two for the measurement of non-adherence behaviour with fluid guidelines and two for the assessment of diet non-adherence. Variables/Measures: Criterion and construct validity of the instrument was substantiated using correlation techniques (Kendall's) between the DDFQ and biological (interdialytic weight gain) and biochemical (potassium, phosphate and serum albumin) ratings of non-adherence. Results: Significant ($p<0.0001$) correlations between the DDFQ and biological and biochemical ratings were found. Conclusions / Implications: The results of this study support criterion and construct validity of the DDFQ. It is an easy to use instrument to measure non-adherence behaviour at a low cost in patients treated with hospital based haemodialysis. Further research in other countries is necessary to establish cross-cultural validity of the DDFQ.

Quality control in dialysis 206

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Nowadays a lot of attention is paid to quality assurance and quality control to assure good care. The Netherlands Cooperative Study on the Adequacy of Dialysis (NECOSAD) is a multi center study including 38 (79%) Dutch dialysis centers. So far, 1465 patients (older than 18 years) were included. A panel of clinical and laboratory parameters is investigated at start, after 3 month and every subsequent 6 months after the start of dialysis. Using these data, we developed 2 quality control feedback-reports for the participating centers: a patient-report and a center-report. The patient-report contains data on demographics, primary kidney disease and co-morbidity. Furthermore modality, weight, nPNA, residual renal function, Kt/V_{urea} and nutritional status are recorded. This report, which is regularly updated, shows the clinical condition over time for each patient and gives insight in the quality and adequacy of dialysis treatment. The center-report shows the mean data of the patients per center in relation to all 38 participating centers including demographics, ethnicity, primary kidney disease, co-morbidity, medication and key clinical laboratory analysis. Variation in mortality between centers was considerable, even after adjustment for case mix. In addition, large differences in mean Kt/V_{urea}, nutritional status, age and co-morbidity was found between centers. According to the nephrologists, this report can be useful to quality management and policy adjustments. Based on this evaluation we aim to update the center-report once a year. In conclusion, we show that long-term research and registration of dialysis patients may provide insight into the quality of dialysis treatment for individual patients as well as for a complete center. We will continue to follow the included patients in order to monitor positive or negative effects of changes in treatment using these quality control reports.

Hydrochinesiology and the nephropathic patient 064

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In december 1999 an experimental project started; it was meant to evaluate the psychich and physical effects of rehabilitation in water on dialysed and transplanted patients. 38 patients were selected (average age 58, 24 men and 14 women), 27 dialysed and 11 transplanted. The hydrochinesiological treatment consisted in two sessions a week, 40 minutes each held totally in water at a temperature of 33°, 34 °C. Before starting the treatment, all the patients were subjected to an evaluation sheet called "Functional Profile" which gave the opportunity to quantify the degree of invalidism. On the basis of the achieved results, influenced by the presence (or the absence) of concurrent pathologies and by the patients' confidence with water, the hydrochinesiological treatment started with one to one or one to three relation. The treatment consisted in a series of activities aimed to recover some conditional qualities which altogether can determine an improvement in the quality of life. A series of exercises were proposed: general mobility, muscular tonicity, general coordination and balance, relaxation. After one year each patient underwent the same functional profile as the beginning of the experimentation, then the new profile was compared to the previous one. With this kind of evaluation we were able to observe an improvement in the initial results of 13,06% for the dialysed patients and 9% for the transplanted ones. Thanks to the physics properties of water it was possible to propose a rehabilitation programme in a stimulating place without negative connotations. We can therefore conclude that hydrochinesiology can become an important component in the treatment of nephropathic patients determining a positive reactivity in them, both on the physical and psychich point of view.

Renal Nutrition

Clinical effectiveness of dietary interventions 143

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It is difficult to evaluate the clinical outcomes of the dietetic input into the Chronic Haemodialysis Population as required by the EFQM process. There are no national guidelines set by the Dietetic Association and due to MDT working a unprofessional outcome is difficult to measure. The challenge was to produce a reliable measure of dietetic clinical outcomes, which demonstrates that patients had minimum baseline knowledge of their dietary restrictions. A knowledge questionnaire was designed for patients. This was devised from local evidence-based clinical standards and protocols. 64 unit based maintenance haemodialysis patients, originally completed the pilot study. The audit cycle was repeated 18 months later.

Nutrient	% of pt's achieving minimum standard of knowledge	
	1999	2000
Potassium	85	91
Phosphate	66	69
Sodium	91	92
Protein	94	96

Patients from ethnic backgrounds who did not speak or read the native language didn't achieve the minimum standards set. The dietetic department has since changed the method of delivery of education to these patients, including the use of language tapes. The questionnaire has provided a formal way to measure the effect of dietetic intervention in this patient group and improve the quality of patient care. Clinical governance and EFQM have made all disciplines more accountable for proving their effectiveness for their clinical interventions and quality of patient care. This tool has provided us with a reliable measurable outcome.

Mid-arm circumference measurement – pre or post dialysis? 178

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Malnutrition in haemodialysis patients is well documented and is associated with an increased risk of morbidity and mortality. Monitoring of nutritional status forms an important aspect of patient care and anthropometric measurements such as mid-arm circumference (MAC) and tricep skinfold (TSF) can be useful tools as part of this process. MAC and TSF are often measured post dialysis on the assumption that the results are affected by a patient's fluid status, however there is little documented evidence to support this. The aim of this study was to investigate whether there is a significant difference in anthropometric measurements taken pre and post haemodialysis.
Data were collected for 30 patients - pre and post dialysis weight, target weight, IMC, and TSF.
The MAC measurement was found to be significantly different pre and post dialysis (mean MAC 28.1cm and 27.9cm respectively, p=0.007). There was no significant difference between TSF measurements pre and post dialysis.
Although, only a small number of patients were studied the results suggest that patients ideally should be measured after dialysis.

Chemical additives in new R. O. systems 205

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Recent analysis of water and dialysate samples show that due to new R.O. systems chemical substances can migrate into the osmosis water. A large number of tests has shown that there are no additives in drinking and softened water, but that the problem arises after the R.O. system. For the tests, samples were taken in the drinking water, after the softener and after the R.O. system. When the problem was located there were also samples taken from a similar water treatment system, and further samples were taken from two identical R.O. systems from another supplier. Instead of a R. O. system that is to remove all kind of substances, we're now confronted with systems that add volatile aromatic carbon hydrates. Further test has shown that dialysate contains about the same level of these carbon hydrates. It even seems that after having primed the artificial kidney in the blood compartment carbon hydrates are present.
The effect of these substances can be called alarming because levels have been found equal to limits that are being proposed for drinking water under new European legislation.
Is this the moment to look at our R.O. water quality level, and state new limits for new additives, should we work out new prescriptions for water quality, or should we let rules be as they are.

Routine disinfecting of the total dialysis fluid system - Methods and results 102

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The importance of bacteria and endotoxin free, sterile dialysate for a long term haemodialysis treatment of high quality is evident. Dead spaces and connections between production and delivery components in older systems are a continuous source for bacteria and biofilm generation and endotoxin release. After changing success in our unit with the routine disinfecting of system components showing partly fast new bacteria growth we changed to routine disinfecting of the entire system. We report about 28 months of disinfecting of a system composed of a soft water tank, reverse osmosis (double RO), RO fluid loop, central bicarbonate production and delivery system and 15 dialysis stations with and without ultrafilter and citric-thermal disinfection before and after each treatment.
Methods: System disinfection: bimonthly with peracetic acid 3.5% in > 0.1 % solution at mean temperature of >15 and minimum of 60 minutes of disinfection time. Samples for bacteria culture and Endotoxin measurement: 3 - 4 monthly at measurement points (MP) 1 = RO fluid (ROF) at outlet RO, MP 2 = ROF (end of loop), MP 3 = bicarbonate hub, MP 4 = bicarbonate tap in the loop, MP 5 and MP 6 = dialysate without ultrafilter, MP 7 = HD machine ROF inlet (only 1 x) using methods recommended by the German Taskforce for Applied Hygiene.
Results after 59 disinfections (21.12.2000):
The conductivity was monitored over 1 hour with average 316,4 ms (range 225 - 442) at two measurement points. The total time used for preparation, rising, disinfection, rinsing and testing was an average 4.2 hours per method, the quantity of peracetic acid 3,5% used was 4.12 litres and mean of 1887.7 litres of RO water.
Microbial tests were done 7 times during the period at the 11th day (mean) after disinfecting resulting in 0.2 KBE/ml in 40 tests. Endotoxin levels in IU/L / 26 test / 5 times / 28 months / mean 10.5 days after disinfection / by Gel Clot or turbometric stating the highest measured result in each category in Tab. 1

Tab 1

MP 1	MP 2	MP 3	MP 4	MP 5	MP 6	MP 7
< 0,05	0,325	< 0,10	< 0,10	< 0,25	< 0,25	< 0,125

Efficient and preventive routine disinfection of an entire dialysis fluid production and distribution system - as nowadays standard in modern systems - can produce sufficient quality of dialysis fluid in older and composed systems.

Computerised nursing records - What are the benefits? 165

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We are one of the largest renal units in Europe with 340 patients currently on the peritoneal dialysis (PD) programme. The service is based at 2 hospitals with 20-30 minutes travelling time between the sites. We also provide a community PD service as many of our patients are frail and elderly and live long distances from the hospital. Establishing effective communication between all members of the multi-professional team and patients and carers has been difficult. The aim of this project was to make nursing records easily accessible to all staff on all sites to ensure continuity of care and safeguard standards.
The renal clinical information system (CIS) was already in use in our unit. Hospital and national standards for record keeping were used as a basis for the further development of the CIS. The following patient data was transferred from paper onto the computer: patient assessment, care planning, current medication lists, PD related data e.g. regime, solution, system, complications, patient observations, treatment changes, evaluations and follow-up appointments. Lap-top computers were purchased for use by the PD conununity nurses. Staff were familiar with the system but further training was arranged to minimise resistance to change and ensure people felt well supported throughout the process.
This development has been positively evaluated and has resulted in better communication within the team; patients can be nursed on different sites knowing that vital information is always available and non-nursing duties such as faxing, photocopying and filming have been minimised.

The influence of bacteria in dialysis water and the level of pyrogens 107

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The knowledge is: If less bacteria, also less pyrogens. It is known that sometimes there are low levels of bacteria but pyrogens are present, why? By using the plate culture method, we only can determine ca. 3 - 10 % of cells, living and can multiply. Also the recommended AGAR R2A cannot cultivate more than a max 8 -10 % of all living and active cells. All the other bacteria e.g. the living but inactivated (by UV radiation) cells remain in “darkness”. Also dead cells which decay but generate pyrogens could not be determined. By separating the bacteria on a membrane filter and staining with CTC solution now all living and multiplying (Type A) cells plus the living and inactivated (Type B) are visible by using a fluorescence microscope. Using DAPI solution, also the dead cells (Type C) are visible.

In bacteriologically perfect drinking water was detected:

Type A	0 - 50 cfu/ml	only these cells can form colonies on AGAR plates
Type A+B	10.000 cells/ml	this figure includes the colony forming and the inactivated, both live
Type A+ B+C	500.000 cells/ml	this figure show together with all living, also the dead cells

Normally, a lot of C type cells are found in drinking water. We know drinking water contains from 30-50 EU/ml pyrogens. Dialysis water allows only < 0.25 EU/ml pyrogens.
Reverse osmosis is the tightest “filter” which ever we have. The membrane separates in any case nearly 100 % of all cells. Therefore the “virgin” permeate is free from cells A or B or C. It is important, that very often the level of bacteria in permeate must be controlled, if a contamination of A cells can grow for longer, certainly with the existence of a larger number of B and C cells can be expected. C cells generate pyrogens. B and C cells are in a larger number present in Biofilmson pipewalls.

Simply donors - Continuing the care

155

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With the increasing number of live donor transplants performed in our transplant unit a review of the long-term follow up care for live donors was necessitated. A review of the notes of live donors from the 80's and early 90's showed that many of the donors had attended their initial follow-up in general nephrology clinics, but after several years this appeared to stop. The causes for this were multi-factorial but the principle cause was felt to be the lack of a dedicated donor follow up clinic.
As a result of the findings, and in line with recent UK guidelines, a decision was made to offer every donor life long follow-up. A Nurse Practitioner clinic to provide continuity specifically for donors has been set up. This offers the standard clinical assessment for initial follow up and subsequent annual reviews. However, an equally important function is that it enables donors to meet other donors, share both information and experiences. It also ensures contact with the hospital is maintained.
Six donors who attended the initial clinic have given very positive feedback and further clinics have now been arranged. A formal method of evaluation is now being undertaken and it is hoped that this dedicated clinic will prove to be a valuable and supportive service for our donors.

Immunoabsorption of anti HLA antibodies on protein A in hyperimmunized recipients waiting for renal transplantation

004

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Staphylococcal protein A (SPA) is extracted from a strain of staphylococcus aureus and binds specifically to the constant domains of immunoglobulins and possibly to fibronectin. It has already been shown that concentrations of all IgG isotypes (except IgG3) are efficiently decreased by SPA immunoabsorption. This system was developed by EXCORIM to remove IgG in instances where those might be harmful, e.g. allo- and autoantibodies involved autoimmune diseases, haematological disorders and anti HLA-antibodies in sensitized patients awaiting organ transplantation. In other instances, it may be used to treat immunological diseases of unknown pathogenesis. In our unit one, patients with high titres of anti-HLA panel reactive antibodies, were treated with immunoabsorption onto SPA. After 5 sessions, the IgG titre showed a marked 50% reduction and the cytotoxic antibodies titre was reduced from 52% to 17%. Infectious complications were not observed and the procedure was always tolerated.
In conclusion, immunoabsorption onto SPA may eliminate antibodies or circulating immune complexes more efficiently than sample plasma exchange. The selective extracorporeal immunoabsorption is also a safe and effective way of removing IgG type antibodies, with potential application to the removal of HLA antibodies in transplanted candidates.

A study of factors affecting anaemia one year post renal transplant

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It has been observed that up to 10% of recipients have a haemoglobin (Hb) level of <10g/dl one year after renal transplantation. Therefore, we have undertaken a document-based study to try and identify factors that may have contributed to this degree of anaemia in transplanted patients. The case notes and anniversary review data of all renal allograft recipients (n=502) attending our outpatient clinic, and having received their transplant at least 12 months earlier, were examined. Demographic, clinical and therapeutic details were collated. Comprehensive analysis showed there to be no correlation between Hb level and (a) patient age, (b) years since transplantation, (c) immunosuppressive regimen or (d) use of ACE inhibitors. A sub-group of 49 patients (9.8%) were found to have Hb <10g/dl. Serum ferritin, vitamin B12, folate and parathyroid hormone levels were determined for any of these patients who had not already been fully investigated and appropriate treatment was instituted. This anaemic group of patients was subsequently re-audited. It has become clear from this study that anaemia in transplant recipients is usually due to the same factors that affect the dialysis and pre-dialysis population. However, no standards have been set for the management of anaemia in renal transplant recipients although this condition is eminently treatable. We suggest that haemoglobin levels in renal transplant recipients should be managed in the same way as for dialysis and pre-dialysis patients.

Skin cancer surveillance post transplantation: establishing a nurse-led clinic

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Non-melanoma skin cancer (NMSC) causes significant morbidity in renal transplant recipients. Tumours grow more quickly, occur at multiple sites and metastasise more readily than in the general population. Early recognition and treatment of NMSC may reduce morbidity and mortality. Over the last three years we have established a nurse-led clinic to perform annual screening for NMSC in our renal transplant population (n=211). A fully trained nurse within a validated competency programme delivers an annual patient specific standardised questionnaire and performs a detailed systematic examination. A cohort of 193 patients were screened initially by a single dermatologist or trained nurse. Subsequently, 164 have completed year 1 assessment, and 107 year 2 assessment. A NMSC prevalence of 16.5% and incidence 7.1-10.6% was found, rising to 9.3-18.1% at 10 years or more post transplantation.
Between December 1999 and October 2000, a structured written questionnaire survey was posted to 66 renal transplant centres asking about skin cancer surveillance and patient education strategies. 61/66 (92%) of questionnaires were returned. Skin cancer surveillance was performed in 25% of centres with 11/15 (73%) of them providing an annual full body examination. Patient education was provided in 63% of centres pre-transplantation and 85% of centres post-transplantation.
A minority of long-term renal transplant centres perform skin cancer surveillance. Annual surveillance of renal transplant recipients for skin cancer could lead to earlier identification and treatment of NMSC in this high-risk population. A nurse-led surveillance clinic is an effective way of detecting new NMSC lesions, resulting in the reduction of patient morbidity.

Nurse practitioner clinics - A new development in the renal transplant department 184

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The promotion and maintenance of health and well-being is foremost in our minds when caring for renal transplant recipients within the outpatient setting, as it is recognized that patients who are followed up regularly and empowered through education, will have best graft outcome. In our unit, until recently, the medical team provided post transplant follow-up care. Continuity of care was proving to be difficult and it was felt that the patients would benefit from the input of other members of multidisciplinary team, particularly nurses. Many patients said they missed the nurse's role and expressed their dissatisfaction with the lack of continuity of care. In order to address these issues a nurse practitioner team was developed to bridge the gap and provide the following service for new and long-term transplant recipients:
Patient consultations, telephone advice/support service, Health promotion and education, psychological/emotional support, support/advice for the renal unit, co-ordination of the renal clinics.
A number of difficulties were experienced during the development of the team. The most problematic being variable support from the medical staff and lack of insight into financial and equipment requirements of the team. The experience has produced a huge learning curve. "A nurse's bible" has been produced containing a wealth of information for patient consultations, including algorithms and nursing competencies, Information technology skills have rapidly improved alongside our medical knowledge. It is hoped that this Nurse Practitioner clinic will radically improve patient well-being and graft life in the renal transplant recipient.

Reduced rate of rejection and infection in live donor transplant recipients with use of interleukin-2 (IL-2) blocker 190

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Early graft function and freedom of rejection 6 months after transplant are the most important independent prognostic factors for 5 year graft survival in first cadaveric grafts. Long term graft survival is significantly reduced in patients with one or more rejection episodes compared with recipients with no rejection. Acute rejection is primarily mediated by helper (CD4) and cytotoxic (CD8) T cells which proliferate under the stimulation of IL-2. Basiliximab, a human/mouse chimeric monoclonal antibody, has been proven to reduce the incidence of acute rejection and is now given to all of our Live Donor (LD) recipients. As part of our annual audit 13 LD recipients who received basiliximab were compared with the preceding 16 LD recipients who had not received basiliximab. In the treated group, 3 out of 12 (1 immediate failure) patients (25%) had rejection, mean time of first rejection at 2.25 weeks. 3 patients received IV ganciclovir for CMV disease - 2 of these had no rejection, 1 had a course of methyl prednisolone. In the untreated group, 9 out of 15 (1 immediate failure) patients (60%) had rejection, with mean time of first rejection at 1.4 weeks. 6 required IV ganciclovir (1 no rejection, 3 had ATG, 2 methyl prednisolone). Average number of HLA A,B,DR mismatches was 2.25 in the treated and 2.07 in the untreated group. Average serum creatinine at 1 year in the untreated group was 177❍mol/1 (plus 2 failed grafts). Average creatinine currently (not all at 1 year) in the treated group is 158❍mol/1. A small number of patients appeared to suffer bronchospasm when given basiliximab and this resulted in a change in practice to giving the first dose after the pre-operative bolus of methyl prednisolone.
The results confirmed the efficacy of the treatment as an addition to the normal immunosuppressive regime.

Poster orally presented

Multiple frequency bioimpedance analysis in peritoneal dialysis patients 075

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The aim of this study was to evaluate and compare the changes between body fluid compartments in low and high transporter peritoneal dialysis (PD) patients by multiple frequency bioimpedance analysis (MF-BIA). Sixteen chronic PD patients were included in the study. Peritoneal transport characteristics determined by standard 4-hour PET were low average (LA) in 8 patients (Group 1) and high average in other 8 patients (Group II). Male/female ratio was the same (4M/4F) in both groups. Soon after the drainage of the night-time exchange, first MF-BIA was performed to determine total body water (TBW) as percentage of body weight (BW), intra- and extracellular water (ICW and ECW) as percentage of TBW, and fat mass (FM) as percentage of BW. Then two litres of 1.36% glucose PD solution were given into peritoneal cavity. At the end of this 4-hour dwell time exchange TBW (%BW), ICW(%TBW) and ECW(%TBW) were measured again. Furthermore 4-hour ultrafiltration (UF) volume (ml) were detected. Serum albumin (SA) levels (g/dl) were also evaluated in these groups.

	TBW0	FM	ICW0	ICW4	DeltaICW	ECW0	ECW4	DeltaECW	4hr UF	SA
Group I	60.7	19.4	61.3	60.7	0.55	38.7	39.3	0.55	228.1	4.1
Group 11	59.0	24.2	58.3	57.3	0.94	41.7	42.7	0.94	162.5	3.8

Although there were significant differences both between ICW0 and ICW4, and between ECW0 and ECW4 in both groups, there were no statistically significant differences between all parameters determined in these two groups. On the other hand, 4-hour UF volume in Group 1 was higher than Group 11, as expected; but this difference was not significant statistically. These results led us to conclude that MW-BIA can give us lots of useful information about the changes between body fluid compartments during PD and reflects relative excesses observed in ECW in high transporter PD patients, as parallel to relatively low UF volume.

Hand Decontamination: what interventions improve compliance 150

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Background: Haemodialysis units have traditionally been classified as high-risk areas in relation to infection control. Hand decontamination is the fundamental infection control practice, although this is not always carried out optimally. A literature search was carried out to determine what interventions improve compliance with hand decontamination practice.
Method: A literature search of electronic databases from 1988-2000 identified forty articles that closely matched the key search words. When inclusion/exclusion criteria had been applied, seven primary research articles were found to be suitable. Appropriate tools were used to critically analyse the research. The findings were then synthesised into appropriate themes.
Findings: The interventions used in the seven articles utilised a combination of staff and patient education, feedback, and motivational interventions to improve compliance. The evidence showed that the above interventions met with different amounts of success. Multiple interventions were generally more successful than individual efforts. The hand decontamination practice often fell back to baseline measurements after the intervention had ceased.
Implications for practice: The findings can cautiously be used to improve practice. A combination of continuous, innovative education and motivation should improve and maintain this important skill.

How to optimize efficacy of regular on-line haemodiafiltration ? 040

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On-line haemodiafiltration (HDF) combines the advantages of high diffusive elimination of small uraemic toxines with high convective removal of larger molecular weight uraemic toxines.
In this respect, and to define the most efficient approach of HDF, removal of uraemic toxines with different modes of on-line HDF compared with bicarbonate haemodialysis (HD) was studied for:

- Reduction ratios and clearances of blood urea nitrogen, creatinine, phoshorus and B2M for HDF with 40 to 120ml/min replacement fluid rates with equal bloodflows (QB),dialysate flows (QD) and dialysis time.
- Removal rates related to postdialysis rebound % and mass transfer of above solutes .

From these results, the recommended dialysis technique in our unit is HDF with 100 ml/min replacement fluid in postdilution .
For these modes of HDF, KT/V index results were compared between:
- HD v HDF
- HDF QD 500ml/min v HDF QD 600 ml/min

HDF in postdilution with QD 600 ml/min (adapted for replacement fluid rate) offers a KT/V index profit between 0.1 - 0.2 compared to HD.
HDF has the potential to provide a high clearance for all solutes irrespective of solute size.
However as overall efficacy is related to treatment parameters, HDF operational procedures should be set to become the highest possible clearance benefits.
Our criteria for optimal HDF adequacy based on monitoring effective QB, replacement fluid rate, and trans-membrane pressure will be discussed.

Importance of residual renal function: Its influence on different parameters of renal replacement treatment 062

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The maintenance of Residual Renal Function (RRF) on uremic patients (pts) on regular dialytic treatment (RDT) is considered as an objective of different dialytic methods. Aim of our study was to investigate and evaluate clinical impact of RRF on pts on RDT and its influence on dialytic parameters such as: dialytic dose, nutritional parameters (albumin), anaemia, B2 Microglobulin levels (B2-M). We have selected 70 pts of our centre on dialytic treatment on elective way, subdivided into two groups: G1 35 pts (14f-21m, 50±3y.o.) with significant RRF (expressed as residual diuresis = RD>0.25 ml/min); and G2 35 pts (13f-22m, 52±5y.o.) with not significant RRF (RD<0.25 ml/min). On both groups, pts had a dialytic time of 210±30 min, with Q.B.300±20 ml/h. Types of membrane used were also not different. We evaluated RRF and haematic control on three subsequent occasions during 24 months: a) time 0 on the first month of treatment; b) time 1 after 6 months of treatment; c) time 2 after 12 months of treatment.
Pathology on G1 was: Diabetic Nephropathy on 8 pts; ADPKD 5 pts; Cgn 2 pts; Systemic 9 pts; Traumatic 1 pt; Unknown 6 pts; Nas 4pts; while on G2 was: Diabetic Nephropathy on 7 pts, ADPKD 6 pts, Cgn 6 pts, Systemic 8 pts, Unknown 8 pts. Use of EPO was 5000±2000U on GI, while was 7000±3000U on G2. After 6 months RRF was present in 26/35 pts (3 pts had a transplant, 2 pts died); after 12 months in only 22/35 pts in GI.

G1	Time 0	Time 1	Time 2	G2	Time 0	Time 1	Time 2
	35 pts	26/35 pts	22/35 pts		35 pts	35 pts	35 pts
RRF ml/min	1.29	0.55	0.38	RRF ml/min	0.25	0.18	0.15
Kt/V	1.03	0.98	0.94	Kt/V	0.91	0.88	0.85
Kt	1.61	1.21	0.85	Kt		/	/
Kru	2.84	1.55	0.83	Kru		/	/
Kre	6.06	4.97	2.42	Kre		/	/
Albumin g/dl	59.5±3.2	59.1±5.2	58.8±6.5	Albumin g/dl	58.5±5.2	57.3±6.3	56.7±5.5
B2-M mg/dl	15.3±5.2	16.8±1.1	19.8±1.5	B2-M mg/dl	21.8±5.2	25.1±6.5	28,5±9.1
Hb g/dl	10.75±1.8	10.66±1.4	10.41±1.6	Hb g/dl	10.35±1.7	10.12±1.9	9.5± 2.7

Our research gives evidence that RRF, independent of any other factor, is directly related not only with the total dialysis dose, but also B2-M levels, some nutritional markers (albumin levels), anaemia control. However these conclusion showed than 38% of pts became anuric after the first 24 months of treatment independent of membranes used.

Vascular access care = nurse responsibility

091

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There is no doubt that a reliable blood access is a prerequisite for a successful haemodialysis. Dependable vascular access is important not only for the dialysed patient but for all members of the healthcare team too. It especially affects the nurse who inserts the needles and therefore is likely to be the first one confronted with any complications. It is therefore of great importance that the nurse is able to recognise the complications in an early stage.
In our haemodialysis centre the control of vascular access is the responsibility of the nurse. Every nurse follows certain number of patients, in whom she monitors the condition of vascular access. The measurements of blood flow and recirculation are useful tools in early recognition of complications. We monitor the condition of fistula by regular determinations of blood flow so we can, in cooperation with physicians, ensure specialized investigations and/or procedures when needed. We have developed a system for monitoring the blood flow which has proved to be very effective, We have performed more than 450 individual measurements over the last 2 years. This system has helped us to promptly recognise early complications, take- appropriate steps and therefore save the AV fistula in many haemodialysed patients .

Kosovo: haemodialysis one year after the civil war

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After the Kosovo-war, the restoration of the health-care system was hampered by a lack of knowledge and experience in local hospitals. This was mainly due to the fact that Albanian physicians and nurses were not allowed into clinical practice under the previous government.
To restart the nephrological health-care, our group was called to help. This team had already experiences with problematic situations such as the earthquake in Turkey, 1999.
First, a scouting team was sent to evaluate the local needs. Afterwards, medical teams were sent to implement a specific action program. The third team consisted of 2 nephrologists, a vascular surgeon, a scrub-nurse and 2 renal nurses. We started a project in the university hospital of Pristina, in collaboration and consensus with the staff of the local renal division. This project was specially based on every day clinical problem solving. To understand the local order of events and standards, we took part in the routine practice of the haemodialysis unit. After analysis of this routine, a schedule for training and reinforcement of basic skills was performed. We wrote a manual of principles concerning the following topics: Blood flow/ vascular access; dialysate/conductivity; hygiene/prevention of infections and diet fluid intake. It was translated into Albanian.
The main problems were lack of time and of a permanent medically educated translator.
In conclusion, despite a rather limited budget and a lack of technical supplies, improvement of standards of renal nursing was established.

Isolated ultrafiltration, single or double needle technique?

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The excessive gain of interdialysis weight, frequent in patients with treatment of haemodialysis periodic (HD) requires sometimes extra sessions of isolated ultrafiltration (IU), which suppose a greater number of punctures over vascular access (VA), important factor in the survival of the same one. Our purpose was to evaluate the effectiveness of single-needle technique on the IU sessions. We realized a prospective study over 38 sessions of IU, in 10 patients: 25 with double needle technique (DN) and 13 with single needle technique (SN). The type of membrane and doses of heparin were similar. Age, sex, weight, duration of the sessions and visual valuation of the dialiser were similar in both groups. There were no significant differences in: rate of ultrafiltration (UF) (DN: 990±114 vs SN: 965±110), total UF (DN: 2260±542 vs SN: 2484±484), real UF (DN: 2160±479 vs SN: 2400±521), total UF-real UF (DN: 100±221 vs SN: 84±354), rate of UF (DN: 17±4 vs SN: 12±1), hypotension episodes (DN: 20% vs SN: 30%). initial haematocrit (DN: 32±3 vs SN: 34±4), final hematocrit (DN: 37±3 vs SN: 39±3)), initial potassium (DN: 4.6±0.6 vs SN: 4.3±0.5), and final potassium (DN: 5±0.6 vs SN: 4.5±0.8), initial urea (DN: 78±30 vs SN: 86±24) and final urea (DN: 84±37 vs SN: 88±23).
Conclusions: 1. Isolated ultrafiltration sessions were similar in effectiveness with single or double needle techniques. 2. Biochemical parameters results were similar with both puncture modality. 3. IU with single needle technique supposes a decrease in number of punctures made in the VA.

Acute haemolysis in haemodialysis is a problem not to be forgotten

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Twelve episodes of acute haemolysis in eleven patients occurred in our 18-station haemodialysis hospital based unit and in the satellite unit within a two years period. Reactions were in some cases extremely severe:
*Two patients died. *All patients but one required hospitalisation. *Three developed pancreatitis.
All patients developed abdominal pain, all but one hypotension and the remaining one hypertension. All patients were dialysed with bicarbonate and hollow fibre dialysers not being reprocessed. Investigation of each episode found in three cases (from the same satellite unit) high levels of nitrates in dialysis water, in all the remaining cases investigation failed to find an abnormality in dialysate temperature, dialysis water levels, dialysis monitor alarms. As reported in several literature studies, when acute haemolysis occurs in one isolated patient in one haemodialysis session, we concluded that the most likely cause of haemolysis was mechanical trauma, which may result from kinking of dialyser lines, in fact attention to this aspect of dialysis is mandatory.
We have integrated a new nursing protocol in our unit: “Security against haemolysis nursing protocol”. The protocol consists in a double checking procedure as follows:
During the first 30 minutes after starting the haemodialysis session, a nurse from another unit (within the haemodialysis department), checks and signs state of: Needle lines, pre filter lines, pump segment, pump outlet, arterial and venous lines and dialysis prescription.
We have not had any haemolysis episodes since introducing the protocol, one year ago, and from our experience and from the literature review finding we conclude that:
Acute haemolysis in haemodialysis is a problem not to be forgotten but to be solved or at least minimised with a security nursing protocol.

Pregnancy and haemodialysis - A case study 156

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Pregnancy in patients on haemodialysis is a rare event (estimates of 0.3 -1.4% in patients of child bearing age). Furthermore, due to the increased prevalence of pregnancy related complications in these patients, only 52% of the births result in surviving infants. The role of nutrition is important in these cases to ensure that the physiological changes of pregnancy (state of hyperparathyroidism and expanded plasma volume) and the additional nutritional needs of the mother and foetus, do not conflict with the biochemical and fluid control crucial in haemodialysis. This case study focuses on the nutritional care of a 32 year old pregnant patient on haemodialysis with minimal residual renal function that had a successful pregnancy. The newborn was preterm (29 weeks) and was of low birth weight (1200g). Through multidisciplinary management, 6 day a week dialysis, maintenance of haemoglobin (<9.5g/dl) and careful monitoring of the patient's nutritional and fluid intake, she maintained normal range biochemical and adequate blood pressure values with a consistent urea reduction ratio of 70%. Her dry weight gain was appropriate for her stage of pregnancy. Her macro- and micronutrient intake was shown to be adequate by weekly 24 hour recall and by completing a three day food diary during the second trimester. No additional vitamin supplementation was provided throughout pregnancy apart from folate. As a result of this case study and a review of the literature, a dietetic protocol was developed for the use in the care of these patients.

Can dialysis assistants replace nurses: results of a national survey 168

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Background: Dialysis units in the UK increasingly employing dialysis assistants (DA) without nursing qualifications to perform duties previously performed by nurses (RGN).
Aim: To determine the reasons for using DA's, the range of duties, training and qualifications, patient and staff acceptance.
Methods: A questionnaire (and telephone followup) was sent to 127 dialysis units in the UK.
Results: Of the 83 units who replied 33 (40%) had employed DA's to initiate dialysis using fistulae (cannulation) or central lines. The reasons given included shortage of qualified nursing staff (18), improving DA job satisfaction (3), reducing cost (l), providing continuity of care (l), improving skill mix (l) and allowing more time for RGN to provide patient care. Training ranged from 1 day to 12 months. RGN's in the units with DA's felt the move was appropriate to the unit in 26 instances but in 7 felt it was inappropriate. Two units stopped because standards had been lowered. The reservations voiced included legal accountability (17), erosion of the RGN role (11), poor care or damage to fistulae (4) and DA unable to understand responsibility (1). In no center did patients report concerns over the change in the service.
Conclusions: DA's perform cannulation of fistulae or central lines in 40% of dialysis units in the UK. Concerns remain about the lack of a standardised training program, job description, qualifications, and legal issues. Two units have ceased the practice because of the effects on standards.

Chronic renal failure, paternalism and the law 195

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Chronic renal failure (CRF) is a long-term condition that requires a rigorous and demanding treatment regimen, and to adapt, research suggests a supportive health care system that promotes autonomy through partnership and concordance. Despite this, a paternalistic medical model tends to prevail whereby the competent and voluntary wishes of the client are often overridden based on a medical interpretation of their best interests, furthermore this paternalistic approach has been traditionally upheld by the English legal system. To demonstrate the point at large, the paper presents three haemodialysis cases considered by the English judicial system, two of which examine the withdrawal of haemodialysis treatment and the third case which examines the refusal of haemodialysis treatment based on resource allocation. The paper determines that current laws which govern consent, capacity and best interests do not wholly reveal the values that clients with CRF attach to their lives and as such medical practitioners and the courts act unethically when dialysis treatment is withdrawn. Likewise, the refusal of dialysis treatment based on resource allocation is also unjust as it fails to recognise the 'Equality Principle' and feeds the notion that to adequately fund health requires a bottomless pit of money. The paper argues for an alternative rights-based approach to health care that promotes autonomy, it also considers the impact of The Human Rights Act 1998 in supporting such an approach.
The paper concludes that a rights-based approach would provide some relief to the paternalistic practices that currently prevail and so accord disadvantaged individuals, such as those with CRF, equal concern and respect, thus promoting autonomous decision making within a truly restorative health care system.

Trainee NVQ level III staffs experiences on a haemodialysis unit 196

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National vocational qualifications (NVQ) level III training with specific core units for the haemodialysis setting has recently been formulated and introduced to clinical areas in the UK for unregistered personnel. This study investigated the experiences of health care support workers (HCSWS) on a haemodialysis unit who were undertaking this form of training. The aim was to create a greater understanding of how the training and work environment for unregistered haemodialysis staff can be positively nurtured and possibly improved to enhance the future quality of care that they will provide.
For this qualitative study a phenomenological approach was adopted, utilising in-depth interviews with a topic guide. It emerged from the participants that they perceived little difference between their roles and those of qualified nurses, and that they experienced ambiguity as to their proper role. The relationship between the nursing staff and HCSWs was overall reported as good, with the qualified nurses generally considered to be supportive, encouraging and appreciative of HCSWs value. However, all of the participants claimed that they had received negative attitudes towards their training and the extending of their roles from some nursing staff, which was linked to professional protectionism. Reasons for entering the NVQ programme were described, which included job security and possible career progression. Adequate support from NVQ assessors was reported as a crucial factor in the success of the training. Indications were also given that NVQ training has the potential to improve the quality of care delivered by new HCSWs on haemodialysis units.

Sodium and ultrafiltration profiling in haemodialysis – does it work? 198

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Introduction: During intermittent haemodialysis, fluid that has accumulated during the interdialytic period has to be removed; because this has to be achieved in a relatively short period of time significant changes in the "milieu interieur" of the patient may occur which can lead to hypotension, resulting in discomfort such as headaches, nausea, vomiting, and cramps (Leunissen et al 2000).
The dialysate sodium concentration is according to Petitclere and Jacobs (1995) an important determinant of intradialytic changes in extracellular volume. The objective when using sodium modelling is to achieve the beneficial effects without the negative consequences of hypertension and increased thirst described by Churchill (1996).
Aims: The purpose of the research study was to determine whether or not sodium and ultrafiltration profiling used conjunctively improves tolerance of dialysis therapy. In view of the potential side effects associated with using a high sodium dialysate this study also aimed to monitor sodium retention within the study population.
An additional aim was to examine if individual sodium and ultrafiltration programmes (in this case linear, step and intermittent) selectively alleviated particular intradialytic symptoms.
Design: The study adopted a prospective, cross over, controlled quasi-experimental design running over a period of four weeks. The four week period was divided into one week blocks. Each block consisting of three dialysis sessions. During three of the time blocks a different sodium/ ultrafiltration programme was used. Twenty one patients commenced and completed the study after approval from the hospital's ethics committee and informed consent had been obtained.
Results: Outcome measures included both objective and subjective observations.
The statistical significance of sodium and ultrafiltration profiling in reducing intradialytic symptoms was not proven within this study.
It is acknowledged however that statistically significant and clinically significant can vary. This suggests that further research is required into exploring intradialytic hypotension from both treatment and patient related perspectives.

Measurement of the inferior caval vein diameter (ICVD) by dialysis nurses 214

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Background: The measurement of the ICVD is considered to be a good supplemental method to improve the determination of dry weight, but as yet is not part of the tasks of Dutch dialysis nurses. Both the Dutch task-function profile for dialysis nurses and the legislation allow performance of ICVD measurements by dialysis nurses, as long as the nephrologist interprets the data and implements changes in the dialysis prescription. This study investigates the usefulness of ultrasound measurements of the ICVD by a dialysis nurse and the opinion of other dialysis nurses on, and the willingness to perform these ultrasound measurements.
Methods: The technique of measurement of the ICVD (3.5 MHz Convex array transducer) was acquired by performing measurements in 8 healthy persons under supervision of a nephrologist. Subsequently, ICVD were measured in 21 hemodialysis patients before and after dialysis, with correction for body surface area (normal value 8.5 and 11.0 mm/m^2). To determine the attitude of dialysis nurses on the measurement of ICVD by themselves, dialysis nurses from our own unit were asked to fill a simple written questionnaire (20 persons, response rate 65%) and 39 colleague experts from other Dutch dialysis centres were interviewed by telephone (response rate 100%).
Conclusion: Dialysis nurses are able to perform ICVD measurements after training by an expert. Better availability of the dialysis nurse makes it possible to measure ICVD before and after dialysis. The majority of the dialysis nurses were prepared to learn this technique. ICVD measurements can only be performed when dialysis nurses have easy access to an ultrasound-apparatus.

Effect of dialysate temperature on haemodynamic stability; intervention by nurses 201

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Based on the normal physiological core temperature (Tcore) in healthy people, dialysate temperature (Td) is usually set at 37.5 °C during haemodialysis. However, the mean Tcore measured in our patients is generally lower (±36.5 °C). Moreover, during haemodialysis Tcore may increase due to contact of blood with the artificial kidney or with the dialysis fluid. It has been shown in several studies that an increase in Tcore led to haemodynamic instability by a reduced vascular reactivity, whereas when Tcore remained unchanged vascular reactivity improved.
One of the main problems of a decrease in Td is that patients may complain of shivering. We performed therefore a study in 15 patients in which we compared the thermal effects of isolated ultrafiltration (iUF), haemodialysis at a Td of 35.5 °C (HD35.5) and 37.5 °C (HD37.5), post-dilution haemodiafiltration at a substitution fluid rate of respectively 1 l/hr (HDF1) and 2$^1/_2$ l/hr (HDF2$^1/_2$). Tcore and blood pressure were measured before and after dialysis by an automatic device (BTM and BPM, Fresenius 4008H). Adverse effects were recorded.
Only 1 patient complaint of shivering, however, it was not necessary to adjust Td. Blood pressure remained stable during iUF, HD35.5 and HDF2$^1/_2$, in which the change in Tcore remained unchanged. Blood pressure decreased significantly during HD37.5 and HD1. During these latter 2 treatments there was a significant increase in Tcore.
From this study it is concluded that in patients with a decrease in blood pressure by adjusting Td by nurses blood pressure stability could be maintained without adverse effects.

Vascular access blood flow rate and efficiency of haemodialysis 221

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Knowledge of patients' vascular access blood flow rate (ABF) permits to optimize blood pump speed and thereby efficiency of haemodialysis. ABF can be measured by ultrasound (Transonic HD01™) during dialysis, using saline dilution with the blood lines in the normal and reversed configuration. The experience of a center practicing high-efficiency dialysis is presented. For the past year, average patient population was 44±2 (30% diabetics), age 60±12 years and weight 69±13 kg. For vascular access, 63% had Cimino-Brescia fistulae, 35% PTFE grafts and 2% catheters. Thrice weekly dialysis time was: 189±18 (150-240) min. Dialysers made of polysulfone (Haemoflow 80S & HdF 100S, 1.8 & 2.4 m^2) and polyamide (Polyflux 21 S, 2.1 m^2) were used. With 4 patients, two of these dialysers were used in series (Double High-Flux). 15 ga. needles were used for blood pump speeds of 400 to 500 ml/min and 14 ga. for speeds of up to 600 ml/min. Dialysate flow rate was set at 800 ml/min. Delivered dialysis dose was quantified quarterly by urea kinetics before-after (sampled 2 min after end of dialysis), using the equations of Daugirdas III and that for (venous) rate adjustment (eKt/V).
Results (mean±SD): For Cimino-Brescia fistulae, ABF was 761±320, for PFTE grafts 680±312 ml/min. Urea kinetics (n=223 sessions analysed, blood treated/session 80±11 1, effective blood flow rate: 423±53 ml/min): urea reduction rate: 72±5%, delivered eKt/V: 1.31±0.18. Effective urea clearance, calculated from eKt/V and an anthropometrical volume of body water (Watson), was 250±34 (136-389) ml/min.
Conclusions: For the majority of patients, available blood flow in their vascular access exceeds the blood flow rates used in conventional dialysis. By exploiting higher blood flow rates and by using dialysers with large surface area and high permeability, treatment efficiency can be optimized in a fashion permitting the patients to receive a good delivered dose of dialysis with comparatively short treatment times.

Factors influencing the development of hypervolemia in CAPD patients 067

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Hypervolemia is one of the most common complications encountered in CAPD patients. It is characterized by oedema-increased blood pressure and body weight. The aim of our study was to correlate the presence of hypervolemia with daily fluid and-dietary salt intake, gastrointestinal problems including constipation and diarrhoea, loss of appetite, serum albumin levels, hyperglycemia, late onset leakage problems, presence of fibrin in effluent and drainage problems. 115-patients (52F:63M;.mean age 54+ 18 years; mean CAPD age; 35.3, + 10 months) followed in our clinic between 1994-2000 were included in the study. Hypervolemia was clinically defined by increased blood pressures, body weight and peripheral oedema. 85, patients (79%) had hypervolemia at least once during the CAPD period. Late onset leakage ($p<0.005$), loss of appetite ($p<0.01$), hyperglycemia ($p<0.05$) and drainage problems ($0<0.05$) were significantly increased in patients with hypervolemia whereas serum albumin levels ($p<0.001$) were significantly decreased. Daily fluid intake and dietary-salt intake, presence of gastrointestinal problems, presence of fibrin in the effluent, daily urine output and time on CAPD were similar in both groups. In conclusion determining the factors influencing the development of hypervolemia, adapting appropriate treatment protocols, regular follow up and patient education is important in the solution of the hypervolemia problem.

PET performance in automated peritoneal dialysis 073

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APD is increasing in frequency around the world. Diagnostic procedures were developed. originally based on the predominance of CAPD and have been adapted to APD by trying to simulate in APD conditions. that are similar to CAPD. This is particularly true for the performance of PET when a long nocturnal dwell is used on the night preceding the performance of the PET. We evaluated whether the results of the PET are significantly altered by performing the PET immediately after a night time cycler therapy vs a long overnight exchange. Twelve duplicate studies in 11 patients, were performed. Mean D/P creatinine in CAPD-simulation was 0.597 ± 0.36 and immediately after cycler therapy $0.59 + 0.036$. A very strong correlation was found between D/Pcreat values with the two methods ($p<0.961$, $p<0.01$) and no patient had a change in their transport profile classification between the two methods. Similarly, closely related glucose D/do values were observed with the two methods ($0.42 + 0.03$ vs 0.399 ± 0.02). A strong correlation was also found between the two measured D/Do values ($r=0.8$, $p<0.01$), and in no patient did the-D/Do -glucose-classification shift between categories. We conclude that PET can be performed immediately after cycler therapy and alterations in patient prescription are not necessary for proper transport profile classification.

A new methodological approach in rapid diagnosis of peritonitis in continuous ambulatory peritoneal dialysis patients: catalase test 079

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Early diagnosis of peritonitis improves the patient level of quality of life and prevents various cost generating interventions. Rapid and user-friendly diagnostic tests could be very useful for the conditions like continuous ambulatory peritoneal dialysis (CAPD) for self-monitoring purposes at home that allows independence from health care institutions. The aim of this methodological study was to demonstrate the validity of a new rapid diagnostic test namely catalase test, for detecting peritonitis in CAPD patients. This test is based on the presence of catalase activity in blood cells as well as bacteria with the exception of most species of Streptococcus. Presence of abdominal symptoms, cloudy drainage, a high concentration of leukocytes in the dialysis effluent (more than 50% of which ,must be neutrophil granulocytes) and bacteria in the effluent were all combined as the reference test (criterion) in evaluating the sensitivity and specificity of the catalase test. A total of 25 patients were recruited for the study. Two millilitres of dialysate were taken from each of the patients and after adding four drops of 10% H_2O_2 the results of the test were evaluated within two minutes. According to the amount of foam in the tube, the degree of positivity of catalase test was recorded from 1+ to 4+.
The sensitivity and specificity of the catalase test was found 100% and 80%, respectively, with a positive predictive value of 78.6% and negative of 100% when the reference test was used.
Catalase test can be used easily and rapidly in case of peritonitis suspicion in CAPD patients.

Continuing PD after herniotomy (HT) 104

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There is still controversy of whether PD treatment can be safely continued after HT. Many nephrologists withhold PD treatment for several weeks after HT in fear of dialysate leakage and/or recurrence of hernia.
We report on 12 patients during the past 2 years (5 female, 7 male) in whom HT was performed either for umbilical (n=4), inguinal (n=6), cicatriceal hernia (n=2) or open processus vaginalis (n=3). Surgery was performed with insertion of a Marlex-mash and ligation of the hernia sac. In all patients PD treatment was paused for the day of surgery and 1 to 3 days postoperatively, depending on RRF. Low volume (1.0 to 1.5 l) and high frequency exchanges (6 exchanges per day) were started for several days with a gradually reinstitution of the former PD-regimen the next 2 to 4 weeks.
All patients did well rapidly with no uremia- or dialysis-related complications. Especially no leakage and no recurrence of hernias could be observed 3 month thereafter. None of the patients had to be haemodialysed intercurrently.
In conclusion continuing PD treatment in a modified regimen after HT seems to be safe with an excellent patient comfort.

Phosphorus circadian rhythm in peritoneal dialysis

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Cardiovascular disease is the main mortality cause in PD. Hyperphosphatemia contributes to vascular calcification and death. In PD serum phosphorus is usually measured in the morning. However, a circadian rhythm for serum phosphorus has been described in the general population and in haemodialysis patients: a valley is present in the morning and a peak (40% higher than morning phosphorus) is present in the night. We have assessed the hypothesis that matinal phosphoremia may underestimate mean 24 hour phosphoremia in PD.
Patients/methods: We studied serum phosphorus circadian rhythm in 8 PD patients (Age 53±17; 7 men, 4 in CCPD and 4 in CAPD, PTH 363±247, alkaline phosphatase in the normal range, weekly KTVI >2.1, 3 patients with no residual renal function). The study required an overnight stay at the hospital but food, phosphorus chelators and PD were the same as at home. Blood samples were drawn every 2 hours, and processed immediately. Serum calcium and phosphorus were measured in every sample. Other parameters, including PTH, CO_2 and Alkaline phosphatase were measured twice.
Results: Mean serum phosphorus concentration variation was 36±6% in 24 hour (range 25-40%). Only four patients displayed the circadian rhythm described in healthy volunteers. Patients with no circadian rhythm had hypo- (PTH <20) or hyperparathyroidism (PTH>400) and a trend towards metabolic acidosis (CO_2 20.6±1.5mmol/L), versus intermediate PTH levels (160-360) and higher CO_2 (23±3, p=0.03) in patients with preserved circadian rhythm.
In every case phosphoremia assessed at 8-10.00 am (5.6±0.7 and 5.8±0.8 mg/dL) was higher than the mean of 24 hours (5.1±0.6, p<0.05). In accordance to prior descriptions in healthy adults, PD patients displayed mild circadian oscillations in serum calcium (<10%), the valley being in the night (9.6±0.5mg/dL) and the peak at 8.00 am (10 1±0.6, p=0.002)
Conclusion: Phosphoremia measured in the morning is an adequate estimate of hyperphosphoremia in a 24 hour period. Serum phosphorus circadian rhythm does not cause abnormal nocturnal CaxP products in PD patients.

Social work should be outreaching

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Nephrological social workers play an essential role in the care for dialysis patients. With the physician and the nurses, they form a multidisciplinary team, which delivers patient-centred care. Social workers must collaborate very closely with the other disciplines. The social worker is a member of the therapeutic team, but on the other hand she acts as a bridge between the patient and the staff.
Social workers have up-to-date know-how about the social and psychological changes and problems people have to meet when they become a renal patient. In this field, they are the experts par excellence.
Social workers help patients to find a balance and a worthwhile life in a new and sometimes hostile world full of uncertainties, limitations and threats, but also new opportunities. Not only the patient has to face this new life, all relatives and other people who are close to him or her have to deal with the new situation, and social workers counsel these individuals too.
An important way to handle this complex situation is to provide patients and relatives with optimal information of excellent quality, to repeat this as often as necessary, to communicate with the patients in a professional, but involved way, and to maintain this communication over a long period of time.

Project concerning the psychological nursing in a haemodialysis department

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We would like to inform you about our project concerning the psychological nursing in a haemodialysis department.
When nursing the patients in our department we have often experienced the feeling of not being sufficient enough in connection with caring theories and human understanding. We have a quite clear impression that the patients complex/multifarious way of presenting their problems have become far bigger in the last couple of years. At times we have had the feeling of being powerless because of lack of psychological tools. We therefore wanted to start a project where the target was to give the nurses more skills in certain nursing situations.
The target for the project is:
To strengthen the understanding of the psychological interactions between the patient and the nurse involved. To give the nurse several psychological acting possibilities in order to give professional psychological nursing without being burnt-out themselves (the nurses).
To secure that the chronic sick patient obtains the optimum psychological nursing so that he/she will be better to manage their lives.
The method to obtain this target could be education and guidance by a psychologist as described in our project.
We would like to present the above mentioned project at the EDTNA congress. The reason is that the participants from the Nordic countries showed a great deal of interest at the Nordiatrans congress in Norway in March 2001, where we presented our project.

The correction of anemia by EPO and IV IRON (Fe) in octogenarians with chronic renal failure (CRF) and congestive heart failure (CHF) improves both conditions

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CRF and CHF are extremely common in octogenarians and have a very poor prognosis. About half of these patients are anaemic (Hb<12g%). The present study evaluates the effect of correction of the anaemia in 40 such CHF+CRF patients age 80+ (mean age 84.4±3. 1), M/F 29/11. The duration of the study was 17.4±10 months. They received sc EPO in an average dose of 5,000 I.U. once weekly throughout the study. IV Fe 200 mg (Venofer-Fe Sucrose) was given once weekly initially and at varying intervals thereafter depending on the Fe and Hb status. Two patients died because of sudden death. Results: * P<0.05 at least.

Variable	Before	After
Hb g%	10.3± 1.2	13.2± 1.2*
Hct %	30.5± 3.8	39.2± 3.6*
Serum Fe mcg%	60.8± 20	82.3± 52*
% Fe Sat	18.3± 6.4	25.1± 7.0*
S. Ferritin ug/ml	126.0± 99	366.3± 214*
S. Creat mg%	2.3± 1.0	2.3± 1.2*
NYHA class (0-4)	3.9± 1.3	2.7± 0.4*
Ejection Fract %	31.6± 14.1	41.0± 12. 9*
^ Cr Cl ml/min/mo	-1.0± 1.3	+0.5± 1.1*
No times hospitalized	3.6± 3.5	0.2± 0.5*
SBP mm Hg mm Hg	129.6± 21.3	136.7± 31.8*
DBP mm Hg mm Hg	73.9± 11.8	76.0± 13.4*

Conclusion: The correction of even mild anaemia in octogenarians with CHF and CRF with EPO and IV Fe combination is associated with a great improvement in cardiac function and NYHA functional class, stabilization of renal function, a marked reduction in the need for hospitalization, and a lower mortality.

The development of evaluation criteria for new staff in haemodialysis 101

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Continuous evaluation of staff skills is an important part of quality management. Samples of evaluation criteria are available for some areas, but not for the dialysis field. They are specially needed for novice nurses starting their work in dialysis, as this is a very different area. During the training and probationary period both the novice and the mentor need to evaluate the aptitude of the future new team member.
Evaluation criteria are composed of corporate identity, nursing model and agreement of goals.
Criteria cannot just be imported from other fields, but need some basic reflections about specific needs. They need agreement from both novice and mentor and must be clear from the beginning of the training period.
On this basis we have developed a specific catalogue for our unit. It will be reported how development and implementation since 1999 was done. Due to low staff fluctuation the questionnaire is still in a pilot phase.
The first evaluation has shown the benefit of this work, as both parties know the goal, the status and the areas needing improvement.

Professional recognition for renal technicians in the 21st century 142

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The challenge facing renal technicians is adapting to the role they are required to fulfil as an integral part of the multidisciplinary team and as a professional clinical technologist.
The Government has set out a challenging agenda in the NHS plan including the development of the provision of renal replacement therapy. The draft document 'Healthcare Scientists A Case For Change' states that 'Scientists and technicians are essential for the delivery of this agenda'.
If patient care is to continue to improve the technician must be involved as a vital part of the solution to providing a better overall service. This involvement cannot be as an engineer only, who views renal services from a machine maintenance perspective, the role invariably involves the use of other skills in communication, education, IT, research and development and knowledge of physiology.
In view of this, The Association of Renal Technicians [ART], in cooperation with the Institute of Physics and Engineering in Medicine [IPEM] are jointly developing training packages and professional registration to ensure that in the future technicians can contribute on a more credible level. This registration is in line with the government recommendations: 'Modernising Regulation - The New Health Professions Council, A Consultation Document' (2000).
To meet the changing demands of the service, to enhance their required roles and to generate a solid career pathway renal technicians should embrace these developments and take the opportunity to equip themselves with the necessary skills, education and professional recognition.

Pre-dialysis anaemia management programme - resource utilisation and clinical outcomes. 153

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Problem: Correction of anaemia improves quality of life and survival. Pre dialysis anaemia management is important but often neglected. These patients have been seen in general nephrology clinics, so are difficult to identify and treat effectively especially patients who attend outlying clinics.
Purpose: To determine if appointment of an anaemia nurse could identify patients and treat then effectively.
Design: The nurse formulated a method of identifying and following up predialysis patients. Anaemia management protocols were devised and patients were treated with erythropoetin and IV iron. A weekly nurse lead IV iron clinic was started in the out patient clinic. Education played an important role, firstly for patients to improve compliance and secondly for primary health care teams as they provide haematological monitoring for patients in rural settings. Findings - All predialysis patients can now be identified and followed up via referral method devised by the anaemia nurse. The new protocols allow early and aggressive management, improving short and long term complications of anaemia. A continuous computerised audit has demonstrated improvement in haemoglobin levels. Up to 1998 the starting Hb's on dialysis were median 8.4 g/dl , range 4.6 -13.5 g/dl. Up to 2001 the starting Hb's on dialysis were median 11.1 g/dl range 9.1 - 13.9 g/dl.
Conclusion: he appointment of specialised anaemia nurse can lead to improved haemoglobin levels and improve utilisation of available drugs and capital resources. Patients can be managed in the out-patient clinic rather than the in-patient unit and continuous clinical audit is essential Relevance - Anaemia nurses play a vital role in developing protocols and providing care. Benefits can be expected in terms of resource utilisation as well as the clinical outcomes associated with correction of anaemia.

In-service access to innovative clinical support and academic supervision – Evaluation of the effects on staff and their delivery of patient care 154

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Nurses deliver approximately 80% of direct patient care, we work in all care settings hence our input directly affects the quality of all care provided. From a business point of view this indicates that NHS employers need personnel with the skills of adaptability and innovation.
Recruitment and retention of nurses within a rapidly changing Nephrology Service is paramount and the role of the 'Research & Practice Development Sister' has evolved so as to provide in-service access to many forms of staff support.
To meet the continually changing demands of the service and its nurses the post holder relies on her own adaptability, creativity and flexibility. A questionnaire was the chosen tool to assist in establishing the views of the nurses and to identify what impact direct access to academic supervision, clinical supervision and support with practice development, has on the nursing workforce and the clinical area.
Analysis highlighted positive impact on practice development, development of formal and informal networks, lifelong learning and dissemination of good practice via submission to local, national and international conferences.
It is evident that education cannot be split from practice and that the practice nurse needs in-service support and encouragement to maintain an on-going and progressive focus on the delivery of care.
The need for the Research & Practice Development Sister to remain multifaceted is in line with the framework 'Workforce & Development' (NHS Exec 2000) and is fundamental in feeding the nurses zest for learning, promoting a high and well informed standard of care and recruiting and retaining staff.

Research priorities for nursing in a dialysis centre 210

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Evidence based practise is relatively new for nursing. By developing evidence-based practice and focusing on effectiveness, nurses can demonstrate the unique contribution which nurses make to health outcomes. Nursing research which is related and relevant for practise is a prerequisite to guarantee a successful utilization process. In practice, nurses experience many barriers to use the scientific results (Bonnell, Hundley, Rolfe, e.a. 2000). The relevance of the research subjects is one of them. To determine research priorities as well as the type of research needed to address these priorities for nurses working in a dialysis environment, the Oncology Nursing Society Priority Questionnaire (Haberman, 1994) is adjusted by using results from a literature review. Content validity is established by 15 nurses. The questionnaire consists of seven main items: symptom management, psychosocial aspects of care, nursing care, special groups or populations, the continuum of care, health management, treatment related decisions. Main items are operationalised in different items related to patients undergoing dialysis. The importance of every item had to be pointed on a scale from 1 (not important at all) to 5 (very important).The results of this study will be presented at the congress. The research priorities will be used to develop a research agenda for guiding the direction of research in the dialysis centre.

"Parachutists" – Out of the blue 013

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During 2000-2001, 11 "parachutists" fell into our haemodialysis (HD) unit. These "parachutists" received teaching and follow up in our predialysis unit. Last year we had 45 new patients. 29 were known to the clinic, the other 16 arrived through the emergency room. Of these 29 known patients, 18 had an AV fistula made in time and the other 11 „parachutists" had to have a central catheter inserted, which caused them unnecessary pain, hospitalization, complications, and hospital costs.
After seeing this data a red alert alarm went off. We asked ourselves if it's due to our work methods, teaching methods, patients' follow up or noncompliance of the patients. The 11 known "parachutists" and their families were then interviewed in order to find out why they weren't ready for dialysis. The main reasons were: Difficulty in accepting the disease due to additional diseases; unforeseen change in health status due to acute on chronic; noncompliance; denial; barriers caused by religion, culture or language. bureaucratic problems between the National Health Fund and the Ministry of Health; lack of family support; and relative old age of many of the patients.
We observed our methods and work procedures. 6 doctors each took personal responsibility for 20 patients in the predialysis clinic. We redefined the functions of the predialysis nurse who together with the multidisciplinary staff would teach and prepare the patient for dialysis. We opened a new medical predialysis file and supplied each patient with their own personal follow up booklet. We also introduced a new team of nurses to "bridge the gap" between the clinic and the first few dialysis treatments.
Conclusion: It is very important to periodically assess, evaluate and change if necessary, our work procedures according to results and patient outcome.

Flexible control of prescribing in a specialist unit 140

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Problem: Historically, funding for specialist medicines was provided by general practitioners (GP's) their medication prescribing budgets. In April 2000 GP's decided to cease prescribing certain specialist medicines and funds were transferred to specialist units.
Purpose: To provide a practical computer system that was able to support both the flexibility required in prescription management combined with audit capability and effective financial control.
Design: With no funds available to purchase software specific to prescription management, an in-house solution was required. A major aim was to support prescribing in general rather than to be drug specific. To maintain data integrity, patient demographic data is imported overnight from the specialist unit's main database that is held on a different computer system. Despite hospital FP10s not being available as continuous from computer printable stationery, FP10s are computer printed.
Findings: Database flexibility is the keyword. The patient population and their health care needs change continuously. Electronic prescribing must offer suitable and timely resolution to meet patient needs. For example, a change of prescription cannot be deferred until the convenience of the next repeat prescription becoming due. A patient going on holiday may necessitate early issue of a repeat prescription.
Conclusion: Computers can be programmed to apply protocols consistently. This is invaluable in prescribing expensive specialist drugs accurately and efficiently.
Relevance: Care of patients has been enhanced by the unit's responsibility for erythropoietin prescribing. The take on of the associated administrative task that could have become a problem has provided a springboard for sound future prescription management within the unit.

Some possible causes of hypotension in haemodialysis patients 087

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Low arterial blood pressure (BP) during and between haemodialysis (HD) could significantly influence to morbidity and mortality in haemodialysis patients (PTS). Therefore, we analysed dialysis population in our unit to establish possible connection between some physical parameters and hypotension in dialysis patients.
We examined 63 hypotensive patients (systolic BP during and after HD lower than 100 mm Hg), control group of 76 patients without hypotension, and group of 14 died, hypotensive patients. We compared age, gender, months on HD, Kt/V values, serum Sodium (Na), serum Phosphorus (P), primary kidney disease, dialysate type (acetate or bicarbonate), presence of the ultrafiltration (UF) control. All patients were dialysed in last four years with Polysulfon 1,3 m^2 dialysers.
Statistically we calculated average values, standard deviation, Students t-test and Chi square test. As a significant difference we considered $p \leq 0.05$.
Results: First hypotensive group (n=63) mean age 51.66 (±15.8); 67.32 average months on HD; 33 (52%) PTS had UF control and 13 (20.6%) PTS had bicarbonate dialysate. Average Kt/V was 1.68 (±0.34); average Na 140.49 mmol/l (±2.33); high serum P had 25 (39.6%) PTS.
Second, normotensive group (n=76) mean age 52.5 (±12.6); 59.76 average months on HD;
46 (60.5%) PTS had UF control and 36 (46.4%) PTS had bicarbonate dialysate. Average Kt/V was 1.73 (±35); average Na 140,26 mmol/1 (±2.5); high serum P had 35 (46%) PTS.
Third group, died hypotensive PTS (n=14) mean age 56,71 (±16,27); 89.6 average months on HD; 4 (28.6%) PTS had UF control and 4 (28.6%) PTS had bicarbonate dialysate. Average Kt/V was 1.43 (±0.31); average Na 140.56 mmol/1 (±4,16); high serum P had 6 (42,8%) PTS.
We supposed in hypotensive group could be more diabetic PTS, but we have not found significant difference. Main death cause in third group was cardiovascular disease. Comparing presence UF controlled HD machines in control and in died hypotensive group we noted significant difference ($p \leq 0.01$). Comparing presence bicarbonate HD in control group and in hypotensive group we noted significant difference too ($p \leq 0.05$). In other parameters we have not found significant differences.
Conclusion: It is known fact that is difficult manage low arterial blood pressure during acetate HD on machines without UF control. Many complications connected to hypotension could increase mortality and morbidity in PTS on HD program, and some causes of low arterial pressure in dialysis population could be dialysate kind (acetate) and technical condition (presence of the UF control).

In-center long duration overnight haemodialysis: nursing aspect 031

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In April 1999 we started a program offering nocturnal long duration haemodialysis (LDHD) (8 h) 3 times/week, maximum 12 patients (pts). Between April 1999 and January 2001, 17 pts entered the program.
Nursing priority: 1) patient safety 2) patient sleep 3) motivation of nurses and patients. Methodology:
Adaptation of infrastructure:

- Cubicles with possibility of audio control. Patient- and monitor control via an alarm device with "traffic lights" instead of acoustic alarm.
- Nursing organisation: designated group of 7 nurses. 1 nurse 1 nightshift/ week, involving 4 pts for 1 nurse.

Safety procedures:

- catheter fixation, avoiding clotting, creating a sleepy environment: darkening of the monitor screens, closing of curtains, execution of noisy manipulations before 11 pm,
- frequent controlling of pts, monitor and tubing.

Evolution:

- Safety: 2 needles displaced because tape caused allergy: bleeding awoke the pt. Use of hypo-allergic tape; 6 times system clotting increase of LMWH; Only 2 x interruption of treatment (medical reason).
- Sleep: 15 pts had a good nightrest, 10 are part of the current cohort while 5 evolved as follows: 4 had a transplant and 1 pt returned to daytime HD.
- Motivation: Pts: full freedom during the day is an important benefit of LDHD.: 3 pts are able to work FT and 2 HT
- Nurses: extra payment for nightnurses and no turnover within nurse group.

Conclusion:
It is very stimulating to work in a relaxed atmosphere with carefully selected patients and with a designated group of nurses. The result is a safe and adequate way of carrying out the dialysis prescription.

Autoadhesive dressing bag protector of catheters 120

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This deals with a new model of dressing for the protection of all types of catheters. It has been formed to solve the difficulties of placing, use and removal of the traditional dressing and the risk for the catheters when removing them using cutting material.
It is composed of two parts: a) One part which is not autoadhesive and which makes up the body of the dressing destined to lodge the catheters; b) One part which is adhesive.
After over a year of use, the advantages which the patients appreciate, coincide with those of the nursing staff and they can be summarized as follows: A quick and simple placing procedure assuring a stable fixation and an adequate protection of the catheters. Comfort during the time of use, facilitating movements and all types of personal cleanliness. Simplicity in the operation of removing the dressing bag. They don't produce pulls, risks of removal, misplacing the catheters or any of the other discomfort typical of the dressing fixed with adhesive. There is a comparative reduction in time with the traditional dressing of up to 95%.
Conclusions: It has been made clear that the use of the model which is being presented offers a considerable improvement in the quality of service, for both the patients and the nursing staff in charge of its application, it also involves a considerable reduction both in the cost of the material and time, obviously improving the quality of life in general for the patients with catheters.

Adapting practice to manage an increasing disabled and frail elderly clientele in our haemodialysis unit 174

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Due to an increase in the number of these patients dialysing, more are requiring ambulance transport because of their disabilities and arriving in various adapted wheelchairs. Increasing numbers are receiving other medical/surgical interventions requiring inpatient admission on wards and discharge to rehabilitation units/residential/nursing homes and respite care. This presents challenges with communication in planning care, manual handling, space, and dealing with bereavement.
We are now communicating more by telephone, fax, visiting wards/homes where possible, encouraging visits to our unit and using diary type communication books. We are also using a wide range of manual handling equipment and forging more direct links with physio and other specialists e.g. diabetic centre and wound care advisers. A clinic set up for haemodialysis patients away from the unit allows time, space, and privacy to discuss issues regarding effectiveness of treatment and general well being. Issues regarding cardio pulmonary resuscitation and ongoing treatment are also being addressed. We have adopted a more considered approach in dealing with bereavement e.g. acknowledging relatives loss as a team and when and how to tell other patients.
As a result, staff are more aware of the needs of these patients, and of their own in providing better care in the renal unit and recognise the need to update and attend study days in these areas.
Bullet point headings and photographs, as a poster will demonstrate this.

Coping mechanisms and quality of life of dialysis patients 007

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The aim of this study was to describe the coping mechanisms and quality of life of dialysis patients with chronic renal failure. Thirteen dialysis patients were interviewed by thematic interview. The data were analysed from the recorded interviews by applying qualitative content analysis. The results of the study revealed that the main source of stress was that the chronic renal failure and dialysis treatment changed the dialysis patients' life. Dialysis treatment limited the normal life of the dialysis patients, because some of them lived at long distances from the place of treatment (5-200 km) and their social life, hobbies and leisure time were limited. Most patients had to leave their work because they were unable to pursue full-time employment due to their symptoms, fatigue, poor physical condition and fatigue. Dialysis patients were also unable to cope with homework, because they had post-treatment fatigue. The symptoms of renal failure and its treatment were a source of stress for dialysis patients. Dialysis treatment in itself may involve many problems, such as infections, pain and peritoneal tears. Haemodialysis patients had repeated shunt and fistula problems. The APD machine set-up also included many technological problems, as it may wake up the dialysis patient every night, which may be one cause of the fatigue of APD patients. The caring environment may also be a source of stress for haemodialysis patients. The coping resources of dialysis patients were the family, the dialysis treatment and financial support. Dependency on others for the routine necessities of life, such as shopping and cleaning, may cause a fundamental role loss with a consequent loss of self-esteem. Confidence in treatment was a very important matter in dialysis patients' life. The dialysis patients who served as informants used a variety of coping strategies. It seemed that the predialysis period is a very important stage in renal failure patients' life because they try avoid facing the changes in their life. Because of that, the patients' physical condition deteriorates appreciably. The findings of this study help renal nurses, patients and their families together plan individual treatment.

Illness – a family affair. A systemic approach to understanding and care for patients with chronic renal failure 148

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Chronic illness can challenge the identities, roles and relationships of family members. Systems theory provides a framework for understanding the meaning of illness following the diagnosis of a family member/s with chronic renal failure.
The diagnosis, treatment and care of patients with chronic renal failure demands a holistic approach integrating the physical, biological, psychological and social. Systemic models offer an interactive and developmental approach to chronic illness. A systemic view takes account of: the nature of illness/disability and loss; the individual, family and illness life-cycles; and belief systems.
The poster provides a visual aid to holistic care by identifying key contextual issues which impact on the patient and family coping mechanisms and quality of life. It is also intended that the poster raises awareness of the psycho-social dimension in patient care and, by implication, the need for appropriate support staff.

Repeated dialysis access failure in a single patient. Case report 092

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47 years old female patient has been followed up since 1996. She developed chronic renal failure due to chronic interstitial nephritis. Maintenance haemodialysis (HD) was instituted in February 1997 as the first choice method of renal replacement therapy (RRT) in patient with lower socioeconomic status and poor compliance to therapy. Subsequently four native arteriovenous fistulas were constructed on both forearms with rapid closure due to thrombosis. HD was continued using the central venous catheters leading to large vessels occlusion. Haemocoagulation status was investigated and severe hypercoagulability was found. Patient was transfered to continuous ambulatory peritoneal dialysis (CAPD) for vascular access failure in May 1997. Despite frequent episodes of peritonitis CAPD treatment continued and patient was stable with 5 exchanges of 2.3% dextrose solution per day until July 2000. After relapsing peritonitis with severe exit site infection resistant to antibiotic treatment peritoneal catheter replacement was indicated. During laparoscopic procedure extensive peritoneal adhesions were found and the operation was followed by another episode of peritonitis. Decreased dialysis adequacy ensued and switch to haemodialysis was considered. Vascular prosthesis fistula was placed into the right groin. Healing was complicated by wound infection with lymphatic discharge. After starting HD extensive clotting in the graft fistula appeared and 2 angioplasties were performed with only temporary effect. To ensure adequate dialysis we placed translumbar catheter into v. cava inferior. Recently she underwent alteplase treatment for clotted catheter. After 4 years of RRT patient is awaiting urgent kidney transplantation as a life-saving procedure.

The role of the nurse's care with haemodialysis catheters 094

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Haemodialysis catheters are essential temporary vascular access in dialysis centers, for a minority of patients also a permanent vascular access. Main complications are infection and malfunction. Nurse's care for the catheter and exit site is essential to avoid these complications. The aim of report is to present our experience with haemodialysis catheters and to emphasise the nurse's role in taking care of them.
In our dialysis center were placed 13842 haemodialysis catheters from August 1977 to August 2000. In the last 10 years were placed 8644 haemodialysis catheters. 742 haemodialysis catheters were placed in year 1999: 555 (75%) as femoral, 151 (20%) as jugular, 24 (3%) subclavian, all temporary single lumen, and 11 permanent silastic catheters: 5 silastic Hickman jugular catheters and 6 double lumen silastic catheters. Femoral catheters were predominantly used in patients with acute renal failure in ICU or in patients being treated for catheter sepsis (the catheter being inserted only for haemodialysis session and removed immediately after the session). All single lumen temporary catheters were locked with 4% trisodium citrate in interdialysis period, to avoid the risk of systemic heparinization. Exit site infection, sepsis and malfunction were predominant complication with femoral catheters. Concerning jugular/subclavian catheters complications were: thrombosis 37/175 (21%), exit site infection with Staphylococcus aureus 14/175 (8%), septicaemia in 6/175 (3%) and rejection of the catheters in 5 cases (2%).
During 1992, 205 chronic haemodialysis patients were treated at our Dialysis center, and 13% had haemodialysis catheters during the treatment in 1999. Nurse's role in taking care of the catheters is essential for good function and avoidance of complications. This includes dressing in aseptic conditions, care for the exit site, careful aspiration of eventual clots and adequate locking of catheters after the procedure.

Sildenafil (Viagra®) improves erectile dysfunction in dialysis patients 095

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Background: Male patients with end stage renal disease often report erectile dysfunction, which is very common especially in younger males. Impotence is reported to exceed 50% in male chronic renal failure patients, and is present in 65% of such patients undergoing haemodialysis. Numerous etiological factors have been reported as possible cause for sexual dysfunction. Sildenafil (Viagra), a potent specific inhibitor of CGMP phosphodiesterase, was used in this case study to improve erectile dysfunction in dialysis male patients.
Methods and results: During 12 weeks we treated 4 dialysis patients. 2 patients were treated with peritoneal dialysis and 2 patients were in the program of chronic haemodialysis. All patients were in the program of dialysis for more than 24 months, and reported erectile dysfunction and impotence after they had started with dialysis treatment. Sildenafil was used in the treatment. The dosage schedule for Sildenafil was 50mg/week orally for 2 weeks followed by 100 mg/week for the next 10 weeks if there was no effect on initial dosage. Efficacy of treatment was evaluated by means of the International Index of Erectile Dysfunction. All 4 patients reported no significant effect on initial dose. With higher dose of sildenafil treatment was overwhelmingly successful, with reported prolonged improvement of erectile dysfunction for 42 to 72 hours. Side effects were present only in 1 patient who had severe headaches after higher dose. No patients experienced priapism.
Conclusions: There have been only few reports in the literature on the use of Sildenafil in dialysis patients. Our small case study suggests that Sildenafil could be successfully and safely used for treatment of erectile dysfunction also in dialysis patients. A large trial would be necessary to confirm the efficacy of the drug for this specific group of patients.

Usage of a permanent catheter with elderly patients on haemodialysis 097

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In recent years, the number of patients over 65 with end stage renal failure undergoing haemodialysis treatment is continuously growing. The first choice of vascular access is arteriovenous fistula (AVF), which is more problematic in elderly. Construction of AVF is more difficult, thromboses occur more frequently and insufficient flow often is a problem. In such cases we place permanent double luminar catheter for HD. In our center percentage of all patients older than 65 years is 13.3 % (with younger 3.7%). Through the permanent catheter patients were dialysed on average 398 days (range 27-1553). Monitoring patients during last 6 years in our center, we gained experience in usage of permanent catheter primarily the Hickman type. Smaller complications like decreased flow or lighter infections at the incision occurred, which we dealt with using proper procedures. Catheters were changed in 30.7% of patients, in few cases it was done more than once. The most usual reasons for changing catheter was laceration of catheter in 71.4% of cases, thrombosis of catheter appeared in 21.4% cases, and inflammation of tunnel appeared in 7.1%. Average duration of one catheter is 198 days (range 24-788), blood flow is average 250 ml/min (range 180-290). Patients older than 65 years with AVF had blood flow average 280 ml/min (range 220-350). The control of dialysis efficiency (Kt/V), showed more or less similar results in both groups of patients (1.25-1.41).
Conclusion : If construction of AVF is difficult, permanent catheter represents simpler and safer vascular access, which allows adequate haemodialysis treatment.

Medical and economical aspects of the destruction of the haemodialysis waste products 099

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The accomplishment of the haemodialysis procedure results in the formation of a great amount of waste products. Some of these waste products such as papers and plastics can be recycled with no risk. A great amount of the waste products - dialysators, blood lines, needles, syringes, infusion lines, have been in contact with the patient's blood, and that is why they are potentially dangerous. More than 40% of our haemodialysis patients are HCV positive and at about 10% HBV positive. This is the reason for the collection, transportation and destruction of the waste products under a strict order. In our opinion, the expenses for the destruction of the waste of a single haemodialysis procedure are at least 2,5 DM. Annually we perform in our country at about 320,000 haemodialysis procedures and that corresponds to 800,000 DM expenses for the destruction of the waste products. The usual practice now is to throw out the waste in the city dunghill. That is an extremely dangerous practice because of the risk of expansion of hepatitis B and C. The great risk of the dissemination of dangerous infections among the population, confirms the obligatory necessity of allocation of funds for the safe destruction of waste haemodialysis products. The value of the destruction of the waste must be calculated in the total price of the haemodialysis treatment.

In vivo validation of an urea monitor 200

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Unfortunately, monitoring the efficiency of haemodialysis by means of blood sampling and calculation of urea kinetics has several well-known limitations. Moreover, the frequency of monitoring is limited by the amount of blood needed for each examination. Part of these problems can be solved by using an urea monitor that determines urea in the drained dialysate. The total amount of removed urea (TRUr), related to the whole body pool of urea could be a good measure for dialysis-efficiency, that can be checked frequently. The urea monitor continuously pumps small amounts of drained dialysate through two parallel tubes with conductivity cells, one of these with an urease column before the conductivity cell. The conversion of urea into NH_4 and HCO_3 in the urease column will cause a difference in conductivity between the two parallel tubes, which reflects the amount of urea in the dialysate. In vitro experiments have demonstrated an excellent correlation of 0.997 between determination of urea with the urea monitor and a regular laboratory test.
We now examined whether the urea monitor is also capable of adequately measuring TRUr in vivo. Therefore dialysate from 25 haemodialysis-sessions (in 10 stable patients) was collected in a large container placed on a balance. In addition, fractions of dialysate were collected by the urea monitor in a sample bag. To prevent bacterial growth with potential urease formation, we used the AK 100 Ultra, which produces aseptic dialysate, and we collected the dialysate in clean disposable 150 liter bags. Cultures taken during the experiments proved to be all negative (n=3). TRUr in the total dialysate matched TRUr in the sample bag (difference -0.4±1.2%; mean±SEM n=14, p=0.9). However, TRUr determined by urea monitor was generally lower than TRUr in the total dialysate although this difference did not reach statistical significance (difference -4.7±2.4%; n=17, p=0. 11). According to the variance of -13 % to +20%, the urea monitor did not match TRUr in total dialysate in several cases.
In conclusion: before applying urea monitor on a routine basis, additional investigations are necessary to varify the circumstances wherein the monitor underestimates or oversetimates the total urea removal.

The effect of home visits on peritonitis and catheter exit site infection 071

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Peritonitis is a common problem in CAPD patients and is a significant cause of treatment insufficiency. There are important factors for decreasing the frequency of peritonitis such as CAPD systems, education of patients. Home visits can not be performed in all centers. We compared the frequency of catheter exit site infections and peritonitis in a period of 1.5 years during which routine home visits can not be performed and a period of 1.5 years during which routine home visits were performed. A total of 27 patients with 14 males and 13 females were included in the study (22-68 years). Chronic renal failure etiologies include 8 diabetic nephropathies, 9 chronic glomerulonephritis, 7 hypertensive nephrosclerosis, one obstructive nephropathy, one chronic pyelonephritis and one unknown. All patients were on twinbag system. The frequency of peritonitis and catheter exit site infection are shown in table.

	1. period	2. Period	RR
The frequency of peritonitis (episode/patient year)	0.62	0.17	0.27
The frequency of exit site infections (episode/patient year)	0.47	0.17	0.36

There seems a significant decrease by means of both peritonitis and exit site infections in the second period where home visits are performed regularly. As a result, we believe the necessity of regular visits besides other factors such as use of twin bags, patients education to decrease the frequency of peritonitis and exit site infections in CAPD patients.

Peer Support Group Program: a veteran dialysis patient tutoring a new dialysis patient 018

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Rationale: When a chronic renal failure patient begins dialysis he requires multidisciplinary information. Meeting a veteran dialysis patient, who provides personal information and support to a new candidate and his family, helps smooth the entrance into the chronic treatment (Lindsquist, Carlssin & Sjoden, 2000: Breckenridge, 1997). For this reason the Peer Support Group Program was established.
Aims: To help a new patient and his family integrate into the PD Program: To increase the options available to the staff regarding provision of information, decision making on type of dialysis treatment and support of new patients. To create an informal support system for new dialysis patients. To motivate veteran dialysis patients by providing them with a responsible and challenging role.
Process: Identifying the needs of patients and their families reviewing the literature; writing criteria for the position of tutor; interviewing suitable PD patients; preparing an instruction kit for the tutors; holding an educational workshop; running the programme, including evaluation.
Results: A support group of veteran patients was created; a pool of role model patients was formed; a wider range of tools for dealing with PD was established; treatment continuity was established between the pre-dialysis clinic and the PD unit, enabling the initiation of the programme.
Conclusions and recommendations: The bond created between the veteran and new patients (n=10), contributed positively to the new patients' confrontation with the dialysis treatment. The positive reactions of the patients and their families to the programme, encouraged its implementation in other units. Clear borders must be defined regarding involvement of the tutor.

A nurse practitioner framework to facilitate patient centered care 136

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"Nurse Practitioners today are pushing hard at the traditional boundaries of practice". Crumbie et al (1999).
The Nurse practitioner role calls for autonomous practitioners with advanced nursing skills and the number of nurse practitioners is growing each year.
The role is also multi-faceted and controversy still remains as to how far we should push these traditional boundaries. As Spencer (1999) would say, are we "maxi nurses or mini doctors? "
As a Transplant Nurse Practitioner in a busy Renal Unit these issues are being encountered on a daily basis, where the perception of the role differs greatly between the medical team, health care professionals, patients and even colleagues.
The lack of a clear definition of the role together with the need to maintain professional and legal accountability led to the development of a framework to facilitate high standards of patient centered nursing care as well as the ability to fulfill the concurrent demands of the role.
The aim of this poster presentation is to discuss the development of documentation which facilitates holistic patient centered care whilst attempting to define and clarify the role boundaries of the Transplant Nurse Practitioner as well as allow further development of the role.

Clinical experience with PET in children on chronic peritoneal dialysis 080

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Peritoneal transport characteristics in children treated with chronic peritoneal dialysis (CPD) differ from adults. Multiple experiences with the peritoneal equilibration test (PET) in children have been published but there is little information available on the use of standardized PET in childhood. In this study, we wanted to represent the PET results in children treated with continuous ambulatory PD (CAPD) or automated PD (APD). We performed a PET on 45 children (9 boys 36 girls) aged 2,5 months to 16,5 years (average to 10.33 ± 4.03 years using a dwell volume of 30-50 ml/kg of 2.27% dialysate PET was performed at the beginning of treatment and every 6 months during the follow-up period. The mean duration on CAPD and APD was 23.83 ± 20.61 months (1 to 59 months) and 13.19 ± 10.73 months (2 to 35 months), respectively. The study group was also divided into 3 subgroups (<5 years; n=11, 5-10 years; n=12, >10 years; n=22). No patient had suffered from an episode of peritonitis within a month prior to the study. Dialysate to plasma ratios for creatinine (D/Do gluc) were calculated at 0,2 and 4 hours as were the ratios of dialysate glucose at-time 0 (D/Pcreat). Statistical evaluation was made by using t-test and pearson correlation analysis. The mean and standard deviation values for D/Pcreat and D/Do gluc. at four hours were 0.69 ± 0.16 and 0.37±0.10, in 45 paediatric patients. Similarly, the mean UF volume after a 4-hour dwell was 150 ± 135ml. There were no significant differences between the subgroups (p>0.05). Follow-up D/Pcreat and D/Do gluc values of these patients were not significantly different (p>0.05). When children are characterized according to adult standards, the majority of patients fit into the high and high average solute transport categories. In 9 patients on APD who showed high and high average solute transport characteristics previously treated with CAPD with a mean duration of 22.22 ± 9.49 months, D/Pcreat value changed from 0.77 ± 0.09 to 0.66 + 0.13 as well as D/Do gluc value changed from 0.31±0.08 to 0.40 ± 0.11 during 2 years of follow-up period on APD.
In conclusion, PET should be done regularly in chronic paediatric patients to choose the most efficient PD regimen. In addition children often require rapid exchanges to achieve adequate ultrafiltration and the usage of APD should be encouraged.

Staphylococcal exit-site infections are associated with peritonitis

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Exit-site infections and peritonitis are major complications of CAPD. Both condition cause morbidity and may cause termination of CAPD. In this study, we researched association of exit-site infections with peritonitis and pathogenic microorganisms more commonly involved in exit-site infections during peritonitis. We collected data on 71 CAPD patients from 1992 to 2000. We evaluated exit sites (classified according to Twardovski's score) and 177 episodes of peritonitis during this period. Comparative results of exit-site examinations, pathogenic microorganisms that cause acute exit-site infection during peritonitis and without peritonitis are shown in below: When exit sites evaluations were considered, exit sites were perfect in 65% and 71 % of patients with and without peritonitis respectively. On the other hand, acute exit site infections were present in 4.5% and 2.8% of patients with and without peritonitis respectively.

Pathogenic microorganisms that cause acute exit-site infection during peritonitis	no	%
S.aureus	5	62.5
Proteus spp.	1	12.5
Pseudomonas aureginosa	1	12.5
Culture negative	1	12.5
S.epidermidis	-	-
Others	-	-

Pathogenic microorganisms that cause acute exit-site infection without peritonitis	no	%
S.aureus	22	37.9
Proteus spp.	2	3.4
Pseudomonas aureginosa	4	6.8
Culture negative	15	25.8
S.epidermidis	10	17.2
Others	5	8.6

The frequency of exit-site infections and equivocal exit-sites were higher in the group with peritonitis. Meanwhile percentage of perfect exit-sites was higher in the other group. S.aureus accounted for 62.5% of acute exit-site infections at the time of peritonitis. This is 37% in the without peritonitis grou p. The cause of peritonitis associated with exit-site infection is predominantly (50%) S.aureus. This study shows that exit-site infections may predispose to peritonitis. Acute exit-site infections due to S. aureus have more chance to end up with peritonitis. The results in our series are in accordance with literature.

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