



NEUROLOGICAL DISORDERS AS A COMPLICATION OF HEMODIALYSIS

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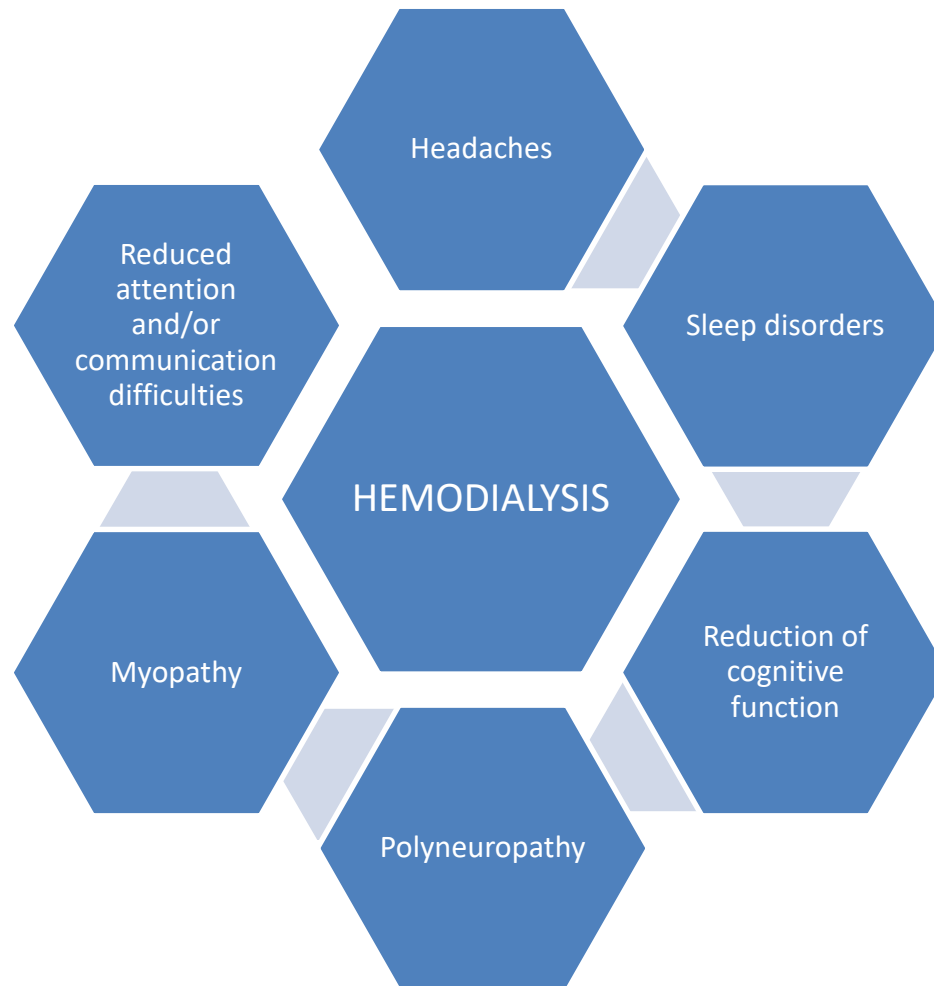
INTRODUCTION

Hemodialysis is a procedure that replaces the kidney function in which in a short time, large volume, electrolyte and metabolic changes occur, resulting in significant hemodynamic imbalances in the body.

Long term treatment causes a whole range of acute and chronic complications that often have neurological manifestations



HEMODIALYSIS → NEUROLOGICAL DISORDERS



RESEARCH OBJECTIVES

- determine the presence of neurological disorders in hemodialysis patients
- define the most common ones
- investigate if these neurological disorders are more pronounced during the process of hemodialysis



PATIENTS AND METHODS

Patients

- 66 patients in chronic hemodialysis treatment program
- Department of Nephrology and Dialysis, UHC „Sisters of Mercy"

Methods

- Questionnaire drawn up by the researchers
- To be completed independently or with the help of interviewers if the respondent needs help

Questionnaire

- The questionnaire consists of 14 multiple choice questions
- The monthly average baseline blood pressure and interdialytic weight gain which are monitored for each patient on hemodialysis, as well as data on sex, age, vascular access and the length of treatment, blood tests

RESULTS

Symptoms		Neurologic disease				χ^2	p
		Yes		No			
		N	N(%)	N	N(%)		
<i>Headaches</i>	YES	10	62.5%	16	32%	4.723	.030
	NO	6	37.5%	34	68%		
	Total	16	100%	50	100%		
<i>Sleep disorders</i>	YES	7	43.8%	20	40%	0.071	.791
	NO	9	56.2%	30	60%		
	Total	16	100%	50	100%		

Table 1. Comparison of the distribution of patients who feel and those who do not feel the examined symptoms as to whether patients are suffering from neurological disease

Symptoms		Vascular access				χ^2	p
		AVF		CVK			
		N	N(%)	N	N(%)		
<i>Headaches</i>	YES	18	33.3%	8	66.7%	5.569	.033
	NO	36	66.7%	4	33.3%		
	Total	54	100%	12	100%		
<i>Sudden changes in blood pressure</i>	YES	31	57.4%	11	91.7%	4.980	.026
	No	23	42.6%	1	8.3%		
	Total	54	100%	12	100%		
<i>Sleep disorders</i>	YES	23	42.6%	4	33.3%	0.348	.555
	NO	31	57.4%	8	66.7%		
	Total	54	100%	12	100%		

Table 2. Comparison of the distribution of patients who feel and those who do not feel the examined symptoms considering the vascular access

CONCLUSION

- Headache and sleep disorders are significantly present and are associated with higher levels of glucose and urea
- "Restless leg" and polyneuropathy problems are more present in hemodialysis patients with diabetes
- Myopathy is associated with interdialytic weight gain(>2500g)
- Headache expressed after dialysis and with statistical significance in patients with central venous catheters and those with neurological disease (CVI, ACI)
- The results indicate that the neurological disorders are most common among respondents with diabetes on hemodialysis, meaning that they need increased health care through an individual approach



THANK YOU



Literature:

1. R. Brouns, P.P. De Deyn; Neurological complication in renal failure: a review; *Clinical Neurology and Neurosurgery* 107 (1–16); 2004
2. V. K. Bansal, S. Bansal; Nervous system disorders in dialysis patients; *Handbook of Clinical Neurology*, Vol. 119 (3rd series); *Neurologic Aspects of Systemic Disease Part I*; Elsevier B.V. 2014
3. A. O. Bah, N. Nankeu, M.C. Balde, M. L. Kaba, K.H. Bah, L. Rostaing; Quality of Life of Patients with End-stage Renal Disease in Guinea; *Saudi J Kidney Dis Transpl* 2014;25(6):1346-1351; Saudi Center for Organ Transplantation 2014
4. Krishnan, A.V.a , Kiernan, M.C.b; Neurological complications of chronic kidney disease; 2009; *Nature Reviews Neurology*, 5 (10), pp. 542-551.
5. Seifter, J.L.a , Samuels, M.A.b; Uremic encephalopathy and other brain disorders associated with renal failure ;2011; *Seminars in Neurology*, 31 (2), p p. 139-143.