

INFLUENCE OF DIALYSATE FLOW FLUID RATE (QD) IN THE CONSUMPTION OF CONCENTRATED ACID AND THE DIALYSIS DOSE

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Background

Concentrated acid used in hemodialysis is a product that is not valued clearly in uses and consumption. Tendency in most of dialysis units is to maximize the QD, believing that it will achieve the highest dialysis dose (measured in KT), but the costs in water and acid are considerably increased.

Nursing, which is who handles, should be aware of it to take action, and avoid an excessive expense.

Methods

Prospective study performed during one year in four dialysis units (47.167 sessions). Calculated and processed in an Excel database:

- Time dialysis
- Dialysis dose (KT)
- Dialysate fluid flow rate (Qd)
- Annual consumption of acid concentration 1:45

Objectives

- 1-To quantify acid consumption depending on the concentration, the dialysate fluid flow rate (Qd), the dialysis time and the kind of carafe (small or 500 liter barrel).
- 2-To find evidence in order to make a good use of acid by nurses and recommend a Qd pattern more cost efficient.

Results

Canisters consumption of 500-1000 Liter is similar compared with the small carafes (3,5 Liters), with no differences in the time of dialysis or the dialysis dose measured.

There is a significantly greater consumption of acid dialysis (21,1%) with the fluid flow manual of 800ml/min, with no differences in the dose of KT and with a similar time of dialysis.

Conclusion/Application

If the monitor does not allow to set the Qd automatically, to increase it in more than 500ml/min does not produce a much higher dose of dialysis, but greatly increased the acid consumption (and liters of water).

The large carafes of 500-1000 Liters are suitable to reduce the nursing workload without increasing the costs, but for small carafes it is very important to end up the whole liters of acid in order to decrease the costs.



ACID CENTRALIZED OR MANUAL IN CARRAFES: QD MANUAL OR AUTOMATIC MACHINES:	CENTRALIZED ACID		ACID IN CARRAFES	
	QD MANUAL	QD AUTOMATIC	QD MANUAL	QD MANUAL
Different Dialysis Units:	Dialysis unit 1	Dialysis unit 2	Dialysis unit 3	Dialysis unit 4
Nº DIALYSIS MEASURED	15.600	17.319	10.186	4.062
TIME (MINUTES)				
Mean (hours)	3,60	3,66	3,61	3,66
Mean (minutes)	215,93	219,41	216,79	219,43
Median	3,5	3,8	4	3,75
Superior range	4,5	4,5	6	4,5
Inferior range	0,5	2,0	1	1
Deviation	0,38	0,32	0,61	0,44
Final sample (dialysis)	15597	17317	10834	4875
DIALYSIS DOSE (KT)				
Mean	48,1	48,0	46,5	45,2
Median	48	48	48	46
Superior range	95,3	95,2	95,0	97,9
Inferior range	12	13	10	10
Deviation	9,7	9,5	10,2	8,7
Final sample (dialysis)	14.038	9.544	8.598	4.744
QD (ML/MIN)				
MEAN ML/MIN	652,5	AUTOFLOW	521,4	776
% 500 ML/MIN	49,16%	Theoretically a mean of 677,2	92,87%	7,98%
% 800 ML/MIN	50,84%		7,13%	92,02%
Water consumption/HD liters	140,9	148,6	113,0	170,3
COSTS (€)				
Consumption liters + acid	56.841	60.917	34.972	16.870
Acid liters/dialysis	3,64	3,52	3,43	4,15
Total cost	54.179,02 €	58.065,18 €	32.835,62 €	15.858,26 €
Cost / dialysis	3,47 €	3,35 €	3,22 €	3,90 €