Do the elderly on Peritoneal Dialysis have more infectious risk?

A Case – Control Study

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INTRODUCTION AND OBJECTIVES

With the aging population, the average age of patients on dialysis has been increasing.

The Peritoneal Dialysis (PD) is being recognized as a valid option for the elderly patients starting on dialysis. However, the possibility of a greater infection risk, not totally clarified, still remains an important obstacle.

With this study we pretend to:

1. Determine if the infection risk in elderly (≥ 65 years) is greater than non elderly (< 65 years)
2. To Identify predictors of infections in the elderly in Peritoneal Dialysis
3. To verify if there are differences between the microbiological profile isolated

MATERIALS AND METHODS

We identified 100 patients in PD program between 2005 and 2015, divided in two groups: **non elderly (< 65 years)** and **elderly patients (≥ 65 years).**

Considering the small number of patients and for facilitation of statistical analysis, we excluded the elderly on Assisted Peritoneal Dialysis (n=4)

A retrospective analysis of medical processes was performed in order to collect **sociodemographic, clinic and analitic data** for statistical analysis (**table below**). The software used was SPSS V.20.

Comparisons of characteristics between groups were made using the Chi-square test and Mann-Whitney test and Cox Regression models adjusted to different variables were constructed to identify predictive factors of infectious risk.

Age
Gender
Time on Peritoneal Dialysis
Dialysis modality (**CAPD** – Continuous ambulatory PD and **APD** – Automatic DP)
Etiology of Kidney Disease (Diabetic, chronic glomerulonephritis (CGN) and others)
Comorbidities: Cerebrovascular Disease, Arterial Hypertension, Congestive Heart failure, ischemic heart disease, peripheral arterial disease
Parameters of dialysis adequacy: Renal and Peritoneal Ktv (average of the results obtained during the dialysis period of each patient)
Other parameters: hemoglobin, albumin and ferritin (average of the results obtained during the dialysis period of each patient)
Number of peritonitis, exit-site and tunnel infections and overall infections (Considering the duration PD of each patient and the obtained microbiological profile)

RESULTS

	Non elderly Group	Elderly group	
Distribution (nº patients)	73	27	
Mean age	52 years	74 years	
Male gender	48,6%	73,1%	p=0,017
Mean Time on Dialysis	2,25 years	3 years	
Dialysis Modality	CAPD – 59%	CAPD – 22%	
	APD – 15%	APD - 5%	
Main cause of kidney disease	CGN – 50%	Diabetic – 41%	p=0,02
Cerebrovascular Disease	5,5%	18,5%	p=0,049
Diabetes mellitus	14,9%	42,3%	
Arterial Hypertension	70,2%	88,5%	
Ischemic heart disease	19%	44,4%	p=0,012
Congestive Heart Failure	24,3%	30,1%	
Peripheral Arterial Disease	13,5%	30,8%	
Mean Peritoneal Kt/V	1,23	0,95	p=0,001
Mean Renal Kt/v	0,7	1,1	p=0,003
Mean Hemoglobin (g/dL)	11,2	11,5	
Mean Albumin (g/dL)	3,9	3,8	
Mean Ferritin	267	209	

No factor significantly associated with higher risk of infection was identified

	Non elderly Group	Elderly Group	
Distribution (nº patients)	73	27	
Mean Time on Dialysis	2,25 years	3 years	
Mean Nº of exit-site infections	1,1	1,4	
Mean Nº of tunnel infections	0,21	0	p=0,026
Mean Nº of Peritonitis	1,21	1,48	
Mean Nº of overall infections	2,97	3,08	
Nº infections/1000 cateter- days	2,7	2,8	
Microbiological Profile			
Staphylococcus aureus	28	7	
Other gram positive cocci	30	13	
Pseudomonas aeruginosa	7	0	
Other gram negative bacili	23	10	
Fungi	4	1	
Total	362	31	

There were no significant differences in the microbiological profile

CONCLUSIONS

✓In this study, the elderly did not have have an increased risk of peritonitis or exit-site infection and had no tunnel infections, despite more complications associated with diabetes and increased cardiovascular morbidity.

✓Factors such as dialysis adequacy, modality and microbiological profile did not have a significant role in infection risk, regardless of age.

✓These results are important to reflect that, in fact, age does not seem to be associated with more infectious complications and should not be a contraindication for PD. Further studies are needed to validate these findings.

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