The Impact of Automated Peritoneal Dialysis in Clinical Outcomes

Laetitia Teixeira *(ICBAS-UP – lcteixeira@icbas.up.pt))*
Anabela Rodrigues *(CHP-HSA & ICBAS-UP)*
Maria João Carvalho *(CHP-HSA & ICBAS-UP)*
António Cabrita *(CHP-HSA)*
Denisa Mendonça *(ICBAS-UP & ISPUP)*

⌗ INTRODUCTION

Automated peritoneal dialysis (APD) has become more popular as a peritoneal dialysis (PD) modality and several studies were performed in order to identify differences between continuous ambulatory peritoneal dialysis (CAPD) and APD outcomes. However, the results are not conclusive.

The main objectives of this study are to compare CAPD and APD patients according to sociodemographic and clinical factors and to evaluate the effect of APD use in patient and technique survival.

⌗ METHODS

Consecutive incident adult endstage renal disease patients starting PD were identified from an ongoing registry-base prospective study of quality assessment. Patients were tabulated in 5years cohorts. Patient outcome was defined as the earliest competing event: death, transfer to haemodialysis (HD) and renal transplant. Information about APD use, gender, age, first treatment (PD first, PD after HD, PD after transplantation), reason for PD, CKD etiology, diabetes and hypertension status were also collected. Survival regression models taking competing risks into account were performed in order to identify potential prognostic factors for death and for transfer to HD.

⌗ RESULTS

All consecutive patients who started PD between October 1985 and October 2014 in our center were included in the study (N=525). Exploratory analysis revealed that only cohort era and first treatment modality were significantly associated with currently PD modality (APD vs CAPD): APD use steadily increased along time, in the previous decades, but then it decreased over the recent 5 years; patient who started renal replacement therapy with PD presented lower percentage of APD usage. Survival regression analysis taking competing risks into account identified cohort contemporary era and diabetes as predictors of better patient survival; only the cohort era was significantly associated with technique survival (contemporary era also presented better survival); APD/ CAPD was not associated with these survival times. Similarly, and considering subsample of patients according to clinical characteristics (diabetics, PD after HD), APD/ CAPD was not significantly associated with patient and technique survival.

Table 1: Parameter estimates for survival model fitted to time to death and transfer to haemodialysis in the presence of competing risks.

		Fine & Gray Model	
		sHR (CI95%)	p
Patient Survival	Gender (ref: Male)	0.97 (0.66-1.44)	0.900
	Age	1.05 (1.03-1.07)	<0.001
	APD (ref: CAPD)	1.20 (0.79-1.82)	0.390
	First Treatment (ref: PD)		
	HD	1.17 (0.78-1.76)	0.440
	TR	1.73 (0.85-3.52)	0.130
	Reason for PD (ref: Option)	0.81 (0.54-1.21)	0.300
	Diabetes (ref: No)	1.71 (1.15-2.54)	0.007
	Decade (ref: 2011-2014)		
	1985-1990	2.70 (0.92-7.89)	0.070
	1991-1995	2.59 (1.03-6.51)	0.043
	1996-2000	2.68 (1.09-6.62)	0.032
	2001-2005	1.86 (0.75-4.64)	0.180
	2006-2010	1.26 (0.49-3.27)	0.640
Technique Survival	Gender (ref: Male)	0.95 (0.69-1.30)	0.760
	Age	1.00 (0.99-1.01)	0.830
	APD (ref: CAPD)	0.94 (0.66-1.33)	0.730
	First Treatment (ref: PD)		
	HD	1.38 (0.92-2.07)	0.120
	TR	1.37 (0.86-2.17)	0.190
	Reason for PD (ref: Option)	1.02 (0.70-1.50)	0.910
	Diabetes (ref: No)	0.97 (0.67-1.42)	0.880
	Decade (ref: 2011-2014)		
	1985-1990	2.45 (1.01-5.91)	0.047
	1991-1995	2.78 (1.26-6.14)	0.012
	1996-2000	2.04 (0.95-4.42)	0.069
	2001-2005	2.78 (1.31-5.91)	0.008
	2006-2010	2.18 (1.02-4.68)	0.046

⌗ CONCLUSIONS

Better patient and technique survival were documented in contemporary cohorts, when the appropriate methodology of survival analyses were performed taking competing risks into account. However APD use was not evidenced as a determining factor of such outcomes in the global population or in specific groups (diabetics, PD after HD). Effect of APD prescription deserve further investigation.

⌗ REFERENCES

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