STRAIGHT VERSUS SWAN-NECK PERITONEAL DIALYSIS CATHETERS: PATIENT, TECHNIQUE SURVIVAL AND OUTCOMES, A 20-YEAR SINGLE CENTRE EXPERIENCE

[1]Dimitra Biblaki, [1]Vassilis Filiopoulos, [1]Lamprini Takouli, [1]Christina Kaitantzoglou, [2]Alexis Dounavis, [1]Dimosthenis Vlassopoulos.

[1]Nephrology and [2]Surgery Departments, Sismanogleion and Amalia Fleming General Hospital, Athens, Greece

INTRODUCTION AND AIM

Treatment of patients suffering from chronic kidney disease stage 5 with peritoneal dialysis (PD) is variably used limited mainly by a high technique failure rate compared to hemodialysis (HD). Material used is considered the main cause. Intra- and extraperitoneal catheter configuration is an issue for mechanical and infectious complications. Current clinical practice guidelines for peritoneal access recommend that no particular type of catheter has proven to be superior to another.

The aim of the present study was to evaluate, retrospectively, the impact of two extraperitoneal catheter configurations: the straight (S) and swan-neck (SN) catheters on technique, catheter and patient survival.

METHODS

We performed a retrospective analysis of all peritoneal dialysis catheters that were inserted in our centre between November 1993 and February 2013. Our study population included 85 consecutive patients treated with ninety-six catheters, with at least 3 months of follow up, starting PD during the study period.

Patients were followed until death, renal transplantation, and transfer to another dialysis modality or renal centre. Survival curves (patient, technique and catheter) were generated according to Kaplan Meier method. Log-rank test and X^2 was used for statistical analysis.

RESULTS

According to catheter configuration two groups were created: C1 included 44 S catheters and C2 52 SN catheters. S catheters were mostly used in the first 6-year period while SN catheters in the last 6-year period. Demographic data for both groups are presented in Table 1. A significantly higher frequency of APD versus CAPD was observed in C2 group (p = 0.001).

Catheter replacement was performed due to mechanical or infectious reasons in similar numbers in both groups (6 in C1 and 5 in C2).Technique survival was significantly better in C2 versus C1 (log-rank test, p=0.01) while catheter survival was similar (p=0.18). Kaplan Meier curves for technique and catheter survival in both groups are shown in Figure 1.

Patients outcomes for both groups are presented in Table 2. At the end of the follow-up period 20 patients (52%) in C1 group and 26 (55%) in C2 group diseased while on PD treatment, mainly due to cardiovascular events. Patient survival was similar between C1 and C2 (p=0.64). Kaplan Meier curves for patient survival is shown in Figure 2.

Table 1. Demographic data

	C1+C2	C1	C2	p
Age median (range) years	65(21-91)	66.5(22-91)	62(21-88)	NS
Male/Female	58/27	25/13	32/15	NS
Diabetics/non diabetics	26/59	9/29	17/30	NS
Months on PD (mean±SD)	43.4±31.3	39.2±34.4	46.7±28.4	NS
Primary Renal Disease:				
Chronic Glomerulonephritis	13	5	8	
Chronic Pyelonephritis	3	2	1	
Diabetic Nephropathy	21	7	14	
Polycystic Kidney Disease	8	3	5	
Hypertensive Nephropathy	5	3	2	
Unknown	24	12	12	
Other	11	6	5	
PD method: APD/CAPD	52/23	16/22	36/11	

Table 2. Patients outcomes

	C1+C2	C1	C2	p
Death on PD	46	20	26	NS
HD	16	11	5	NS
Transplantation	8	3	5	NS
Transfer to other units	3	3	-	
Death causes:				
Cardiovascular	32	12	20	NS
Infectious	13	7	6	NS
Neoplasia	1	1	-	

C1: S catheters, C2 : SN catheters, PD: peritoneal dialysis, APD: automated PD, CAPD: continuous ambulatory PD, NS: non significant

Figure 1: Technique and catheter survival in straight vs. swan-neck catheters

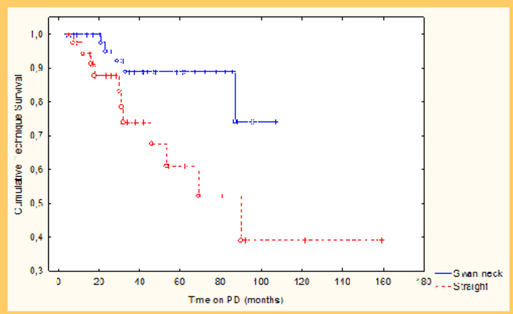
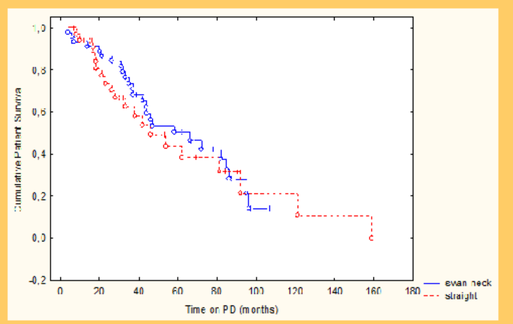


Figure 2: Patient survival in straight vs. swan-neck catheters



CONCLUSIONS

A better technique survival was found in our group of patients with swan-neck catheters compared to straight ones. Patient and catheter survival rates were similar for both groups of different extraperitoneal catheter design.

The significantly higher frequency of APD use that was observed in swan-neck catheters' group may be a potential confounding factor in the better technique survival noted in swan-neck catheters' group. Changes in PD solutions' composition over the last few years and, in general, the improvements of overall practices in PD could also contribute to better technique survival observed in swan-neck catheters group as these catheters have been increasingly used over the last decade in our unit.

REFERENCES:

1. Hagen SM, Lafranca JA, IJzermans JNM et al. A systematic review and meta-analysis of the influence of peritoneal dialysis catheter type on complication rate and catheter survival. Kidney Int 2014; 85: 920–932.
2. Xie J, Kiryluk K, Ren H, et al. Coiled versus straight peritoneal dialysis catheters: a randomized controlled trial and meta-analysis. Am J Kidney Dis. 2011; 58: 946-55.
3. Kolesnyk I, Dekker FW, Boeschoten EW et al. Time-dependent reasons for peritoneal dialysis technique failure and mortality. Perit Dial Int 2010; 30: 170–177.
4. Stylianou KG, Daphnis EK. Selecting the optimal peritoneal dialysis catheter. Kidney Int 2014; 85: 741-743.

52 ERA
501--SP
L2) Dialysis. Peritoneal dialysis.
Dimitra Biblaki
DOI: 10.3252/pso.eu.52era.2015
ePosters supported by F. Hoffmann- La Roche Ltd.
52 ERA EDTA CONGRESS London 2015 UNITED KINGDOM MAY 28TH
PosterSessionOnline.com