

Is there gender difference in maintenance of peritoneal dialysis: Analysis using competing risk model

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Objective

Peritoneal dialysis (PD) is one choice of renal replacement therapies in patients with end stage renal disease (ESRD). Gender difference was known with involving long term outcome of nursing care such as quality of life among ostomy patients. However, little is known about the gender difference of PD usage and maintenance. This retrospective study aimed to clarify the gender effect on withdrawing PD.

Methods

ESRD patients, who had received PD catheter insertion, were enrolled in a tertiary hospital in northern Taiwan. The clinical data were reviewed and analyzed for the outcomes of PD withdrawing time and events using competing risks regression model. Receiving renal transplantation or death was considered as a competing risk for the outcomes of withdrawing PD. Univariate analysis model was used to investigate the relationship between each independent variable, while multivariate analysis model was used to determine the independent variables that continued to be associated with outcomes after inclusion with significant variables in univariate analysis. Subdistribution hazard ratios (SHR) of covariates of competing risks regression were expressed with respective confidence intervals of 95%. Data were analyzed using the software Stata 12.0. P value less than 0.05 is considered statistically significant.

Results

Figure 1. Flowchart of study design and population

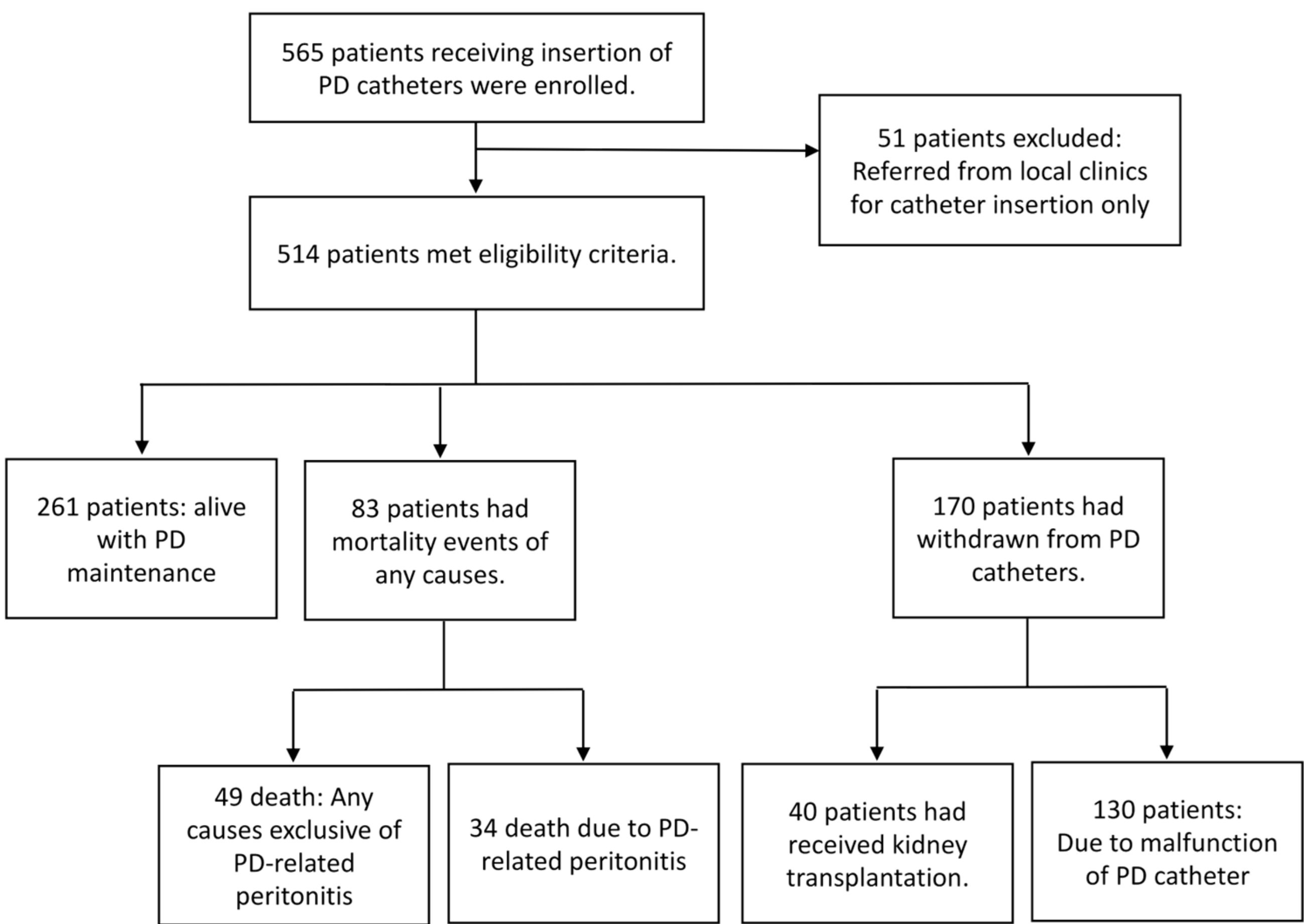


Figure 2. Cumulative incidence function of PD withdrawing between male and female patients.

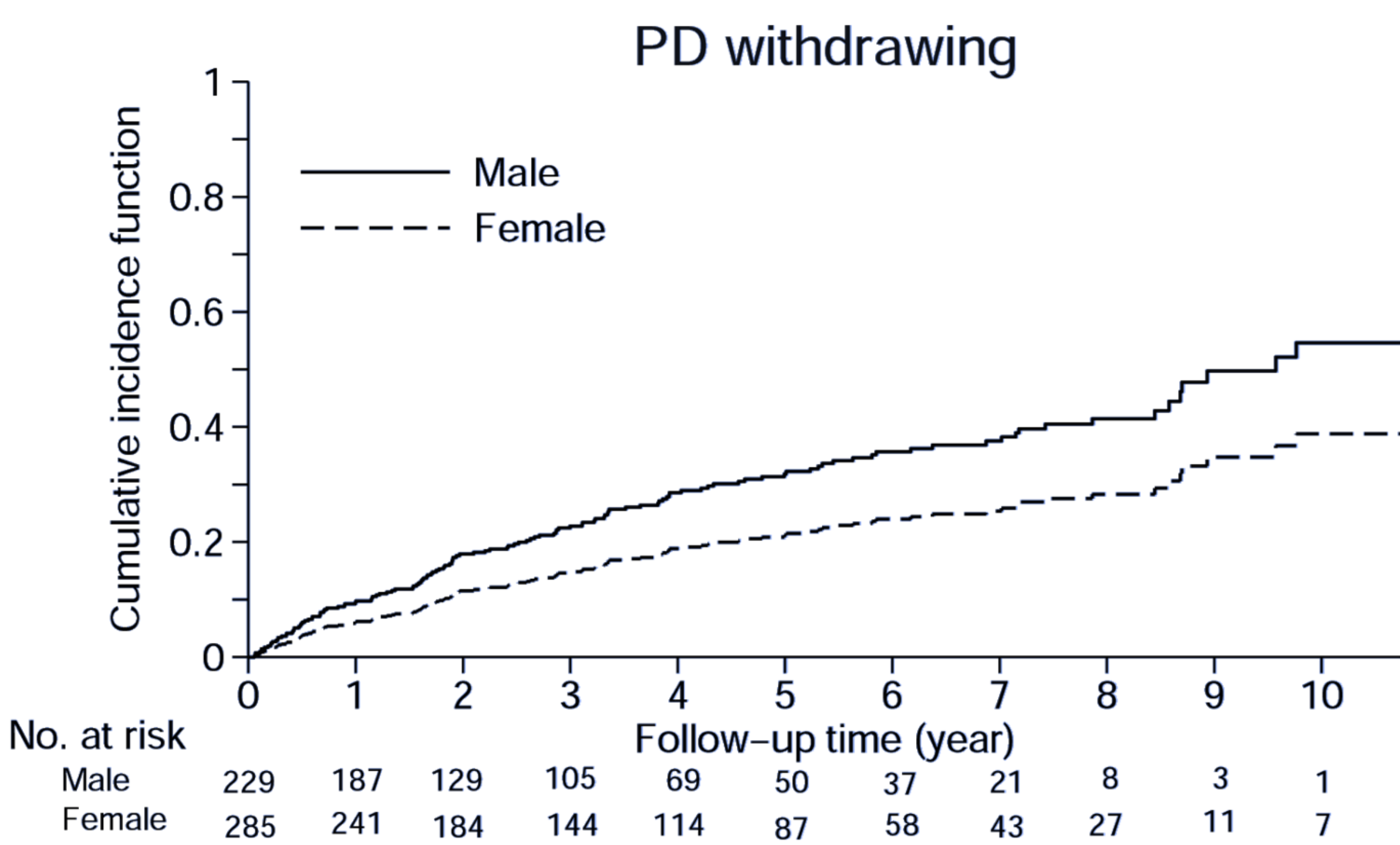


Table 1. The demographic characteristic of the patients.

	Number	%
Total	514	100
Gender		
Male	229	44.6
Female	285	55.4
Diabetes		
Yes	129	25.0
No	385	75.0
Hypertension		
Yes	414	80.5
No	100	19.5
Coronary artery disease		
Yes	113	22.0
No	401	78.0
Cerebrovascular disease		
Yes	18	3.5
No	496	96.5
Respiratory disease		
Yes	15	2.9
No	499	97.1
Liver disease		
Yes	56	10.9
No	458	89.1
History of previous abdominal surgery		
Yes	12	2.3
No	502	97.7

Table 2. Risk factors associated with PD withdrawing using competing risk analysis.

Clinical factors	Univariate analysis		
	SHR	95% CI	p value
Age	0.99	0.98-1.00	0.241
Gender			
Male	1		
Female	0.67	0.48-0.94	0.019 ^a
Diabetes mellitus			
No	1		
Yes	1.00	0.70-1.43	0.983
Hypertension			
No	1		
Yes	0.89	0.61-1.32	0.572
Coronary artery disease			
No	1		
Yes	1.10	0.74-1.64	0.625
Cerebrovascular disease			
No	1		
Yes	0.65	0.19-2.27	0.503
Chronic liver disease			
No	1		
Yes	0.83	0.47-1.46	0.515
Abdominal surgery history			
No	1		
Yes	0.29	0.04-2.17	0.225
Chronic obstructive pulmonary disease			
No	1		
Yes	1.18	0.52-2.65	0.695

Conclusion

Male is a risk factor to have episode for removal of their PD catheters. Women may keep longer duration of PD usage and gender difference affects maintenance of PD catheters. Caring PD catheter is essential for ESRD patients and requiring selfcare education. Gender difference for the maintenance of PD should be considered for further patient education and individual care.