

LONG-TERM DELETERIOUS EFFECTS OF PERITONITIS ON PERITONEAL AND RENAL FUNCTION.

Matthias Zeiler^o, Ada Caselli[^], Silvio Di Stante*, Marina Di Luca*, Simonetta Oliva*, Francesco Bruni[^], Stefano Santarelli^o

^oNephrology and Dialysis Unit, Ospedale „Carlo Urbani“, Jesi, Italy

[^]Nephrology and Dialysis Unit, Ospedale „Mazzoni“, Ascoli Piceno, Italy

*Nephrology and Dialysis Unit, Azienda Ospedaliera „Marche Nord“, Pesaro, Italy

Introduction and Aims:

During long-term peritoneal dialysis structural changes of the peritoneum like mesothelial damage, interstitial and vascular sclerosis have effects on peritoneal transport measured by peritoneal equilibration test (PET).

The aim of the study is the evaluation of the effects of a peritonitis episode on long-term peritoneal and renal function.

Methods:

In a retrospective study 56 patients (median age 65 years; 28 male, 24 female; 13 patients with diabetes mellitus) which had performed at least 4 times a PET test were included. The first PET was performed after 177 days, the second after 701 days, the third after 1058 days and the fourth after 1523 days (median values) of peritoneal dialysis. 19 patients had never a peritonitis during the follow up of four PETs, whereas 14 patients one, 10 patients two, 8 patients three and one patients four peritonitis episodes. Furthermore, albumin and residual diuresis were registered.

Results:

The peritonitis rate was 1:37 episodes per patient month anteceding the first PET, 1:43 between the first and second PET, 1:71 between the second and third PET, and 1:57 between the third and fourth PET. D/P creatinine tended to increase by time (median; first PET: 0.64; second PET: 0.64; third PET: 0.71; fourth PET: 0.73). In patients without peritonitis the increase of D/P creatinine between the first and the fourth PET was not significant (median; first PET: 0.60; second PET: 0.62; third PET: 0.62; fourth PET: 0.71), whereas the increase of D/P creatinine in patients with peritonitis was significant (median; first PET 0.65; second PET: 0.66; third PET: 0.72; fourth PET: 0.75, $p=0.026$ Wilcoxon test). The decline of residual diuresis in patients with peritonitis was higher in confront to patients without peritonitis (median; patients with peritonitis from the first to the fourth PET: from 1200 to 150ml/day; patients without peritonitis: from 1100 to 700ml). Albumin values were stable in both groups. The prevalence of diabetes, the patient age and clearance values were similar in both groups.

Conclusions:

As peritonitis is followed by a significant increase of D/P creatinine and by a reduction of residual diuresis, the prevention of peritonitis should be a benchmark such as adequacy of peritoneal dialysis.

Peritonitis: Influence on D/P Creatinine

	No Peritonitis	Peritonitis ≥ 1
<u>Patients</u>	19	33
<u>D/P creatinine</u>		
1° PET	0,60	0,65 *
2° PET	0,62	0,66
3° PET	0,62	0,72
4° PET	0,71	0,75 *

Median values of D/P creatinine

* $p<0,05$ versus 1° PET

Peritonitis: Influence on Diuresis

	No Peritonitis	Peritonitis ≥ 1
<u>Patients</u>	19	33
<u>Diuresis [ml/day]</u>		
1° PET	1100	1200
2° PET	1000	1000
3° PET	840	550
4° PET	700	150

Median values of residual diuresis

Peritonitis: Influence on Serum Albumin

	No Peritonitis	Peritonitis ≥ 1
<u>Pazienti</u>	17	33
<u>Albumin [g/dl]</u>		
1° PET	3,40	3,20
2° PET	3,20	3,15
3° PET	3,50	3,20
4° PET	3,40	3,19

Median values of serum albumin



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