



THE EFFECT OF BIOCOMPATIBLE PERITONEAL DIALYSIS SOLUTIONS ON NEUTROPHIL TO LYMPHOCYTE RATIO

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INTRODUCTION: Long term exposure to dialysis solutions is an important contributor to the ongoing inflammatory process in peritoneal dialysis (PD) patients. Some studies have shown amelioration of this adverse effect with biocompatible solutions. We aimed to compare the neutrophil-to-lymphocyte (N/L) ratio in PD patients using biocompatible and standard solutions and to find out the association between N/L ratio and peritonitis indices.

MATERIALS-METHODS: This was a cross-sectional, multicenter study involving 120 prevalent PD patients. 71 patients (59 %) were using biocompatible solutions and 49 patients (41 %) were using standard solutions. From blood samples, N/L ratio and platelet-to-lymphocyte ratio were calculated and mean platelet volume, erythrocyte sedimentation rate and hs-CRP values were detected. Data regarding the peritonitis rate and time to first peritonitis episode were also recorded.

RESULTS: Biocompatible and standard groups were similar regarding age and gender. N/L ratio and hs-CRP levels have been found significantly higher in patients using biocompatible solutions (3.75 1.50 vs 3.27 1.3, $p=0.04$ and 3.2 2.5 vs 1.8 2.0, $p<0.01$, respectively). Peritonitis rates and time to the first peritonitis episode were found similar in patients using both types of solutions (0.23 0.35 vs 0.27 0.32, $p=0.36$ and 32.8 35.8 vs 21.5 26.9 months, $p=0.16$, respectively) (Table 1).

DISCUSSION: N/L ratio was significantly higher in biocompatible solution users in parallel to hs-CRP levels, so biocompatible solutions seem to be related with increased inflammation in PD patients. Although we cannot make a certain explanation, we assume that there may be an association between acidity of the peritoneal content and virulence of microorganisms.

Table 1. Laboratory findings and peritonitis indices of the study groups (mean SD).

	Biocompatible Solutions (n: 71)		Standard Solutions (n: 49)		p value
hs-CRP (mg/dl)	3.2	2.5	1.8	2.0	<0.01
N/L ratio	3.75	1.50	3.27	1.34	0.04
Peritonitis rates (episodes per patient year)	0.23	0.35	0.27	0.32	0.36
Time to first peritonitis episode (months)	32.8	35.8	21.5	26.9	0.16

