İNGİLİZCE ÖZET (SUMMARY)

Effects of Atorvastatin on Development of Peritoneal Sclerosis in Rats on Peritoneal Dialysis

Background: Peritoneal sclerosis is one of the important complications of long term peritoneal dialysis. In this study, we aimed to test the effects of atorvastatin on peritoneal functions and peritoneal histology in non-uremic rats on peritoneal dialysis.

Methods: Twenty-two non-uremic Wistar albino rats were allocated into three groups: Sham(10 mL saline intraperitoneally for four weeks), Peritoneal dialysis (PD,10 mL hypertonic dialysis solution intraperitoneally for four weeks) and treatment (Tx, 10 mL hypertonic dialysis solution intraperitoneally + atorvastatin in drinking water for four weeks) groups. At the end of four weeks, one-hour peritoneal equilibration test performed, serum lipids, certain cytokines, mediators antioxidant enzyme activities and markers (IL-1β, IL-6, Il-8, TGF-β, TNF-α, NO, GSH, GPx, GR, CAT, MDA) in serum and/or dialysate were evaluated. Peritoneal thickness was measured and peritoneal inflammation, fibrosis and vascularisation were evaluated in histological sections.

Results: In histological examinations, inflammation, fibrosis and vascularisation were more frequently observed in PD group when compared to that of the sham group and it seemed to decrease when atorvastatin used in conjunction with peritoneal dialysis. Additionally peritoneum was thicker in PD group when compared to that of the sham group and Tx groups. When serum samples were examined, there was no significant difference between the parameters. On the other hand, dialysate GR activity and TGF-β were significantly lower in Tx group than that of the PD group whereas dialysate IL-6 level was higher in to group than that of PD group.

Conclusions: Our study suggests that atorvastatin use diminish structural changes in peritoneum. Decreased expression of TGF-β in dialysate may be one of the possible underlying mechanisms.

Key Words: Peritoneal dialysis, atorvastatin, fibrosis

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