Effects of silymarin on biochemical and oxidative stress markers in end-stage renal disease patients undergoing peritoneal dialysis

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Abstract

Introduction End-stage renal disease (ESRD) patients especially those undergoing dialysis are vulnerable to several complications, in particular those related to oxidative stress. Silymarin is an herbal medicine commonly used as an antioxidant in different pathologies. Methods To evaluate the effect of silymarin on biochemical and oxidative stress markers, 50 ESRD patients undergoing peritoneal dialysis were randomly divided into two groups of silymarin (n=28) and control (n=22) and received silymarin (140 mg every 8 hours) or placebo for 2 months, respectively. Ferric reducing antioxidant power and total 8-isoprostaglandin F2α were measured in plasma, while catalase enzyme activity was measured in erythrocytes of both groups before and after treatment. Findings Ferric reducing antioxidant power values after treatment were significantly decreased in silymarin group compared to before treatment values (17.2±2.9 and 15.9±3.1 μM equivalent of quercetin/dL, respectively, P<0.05). Conversely, catalase levels were increased 17.3% after silymarin consumption, while it was decreased 9.1% in control group. Further, hemoglobin (from 10.94±2.17 to 11.54±2.03 g/dL, P<0.05) and albumin levels (from 3.48±0.67 to 3.61±0.53 g/dL, P<0.05) were significantly increased after silymarin administration. Discussion It is concluded that silymarin could be regarded as a supplementary therapy for ESRD patients undergoing peritoneal dialysis in order to reduce complications. © 2016 International Society for Hemodialysis.