Summary of the MSc thesis No: 6705, Faculty of Veterinary Medicine, Urmia University.

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Title of thesis: Effects of combined Atorvastatin and Prednisolone on immune responses in an experimental model of ulcerative colitis

Summary:

Inflammatory bowel diseases are chronic disorders of the gastrointestinal system and have two forms, ulcerative colitis (UC) and Crohn diseases. In view of the adverse effects and incomplete efficacy of currently administered drugs like prednisolone, it is essential to investigate new and harmless medications with more desirable beneficial effects. Statins have many additional pleiotropic effects other than their lipid-lowering effect. The aim of this study was to compare the effects of prednisolone and atorvastatin in rats with UC. Ulcerative colitis was induced in the male Wistar rats by luminal instillation of acetic acid. Rats in the treatment groups received atorvastatin (10 mg/kg PO) or Prednisolone (2mg/kg PO) daily for 10 consecutive days. At the end, the rats were sacrificed and the disease activity index, the levels of myeloperoxidase, nitric oxide and the gene expression of the TNF-α, IL-1, and IL-6 were assumed in the colonic homogenized tissue specimens. The results showed that both atorvastatin and prednisolone could regress the clinical scores of UC in a comparable manner. The expression levels of IL-6 and IL-1 were down-regulated in the guts of Atorvastatin treated rats more than Prednisolone groups ($p<0.05$). Nonetheless, Prednisolone downregulated the levels of TNF-α and nitric oxide activity levels more significantly than Atorvastatin ($p<0.05$). In conclusion, these data suggest that the atorvastatin may be used to control the ulcerative colitis.

Keywords: Atorvastatin, Prednisolone, ulcerative colitis, Combination therapy, Wistar rat