Evaluation of the Effects of Chondroitin Sulfate and Glucosamine Sulfated in an Experimental Model of Ulcerative Colitis in Rats.

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Ulcerative colitis is an inflammatory bowel disease that affects the colon and rectum, and its treatment is based on anti-inflammatory drugs. Chondroitin sulfate (CS) and glucosamine sulfated (GlcNS) are currently indicated for the treatment of inflammatory diseases by their anti-inflammatory effects. The aim of this work was to analyze the effects of CS and GlcNS in ulcerative colitis induced by dextran sodium sulfate (DSS) in rats, evaluating the disease activity index (IAD), hematological, morphological, histological, and myeloperoxidase (MPO) and matrix metalloproteinases MMP-2 and -9 activities in the colon. Animals were divided into three groups: control (H₂O), colitis (DSS 5%) and colitis + CS/GlcNS (400mg/500mg/kg). We observed a difference in the IAD between control and colitis group (treated or not), but no difference between the treated (CS/GlcNS) groups and colitis. There was a reduction in blood parameters and the shortening of the colon in the treated group (CS/GlcNS) compared with the colitis group. Histologically there was no difference between treated group and the colitis group, as well as MPO activity. In addition, we observed an increased activity of MMP-2 and -9 in the colitis group, and the treated group decreased of MMP-9. For group (CS/GlcNS), we observed a reduction in the concentration of chondroitin sulfate and dermatan sulfate and an increase in the concentration of heparan sulfate compared to the colitis group. Thus, we found improvements of the evaluated parameters after administration of CS/GlcNS, but additional results are necessary to use these compounds in treatment of this pathology.


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