MATRIX METALLOPROTEINASES ACTIVITY IN A RAT MODEL OF COLITIS.


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Inflammatory bowel disease, including ulcerative colitis and Crohn’s disease, comprising a broad spectrum of diseases those have in common chronic inflammation of the gastrointestinal tract, histological alterations and an increased activity levels of certain enzymes, such as, metalloproteinases. Evaluate a possible correlation of disease activity index with the severity of colonic mucosal damage and increased activity of metalloproteinases in a model of ulcerative colitis induced by dextran sulfate sodium. Colitis was induced by oral administration of 5% dextran sulfate sodium for seven days in this group (n=10), whereas control group (n=16) received water. Effects were analyzed daily by disease activity index. In the seventh day, animals were euthanized and hematological measurements, histological changes (hematoxylin and eosin and Alcian Blue staining), myeloperoxidase and metalloproteinase activities (MMP-2 and MMP-9) were determined. Dextran sulfate sodium group showed elevated disease activity index and reduced hematological parameters. Induction of colitis caused tissue injury with loss of mucin and increased myeloperoxidase (P<0.001) and MMP-9 activities (45 fold) compared to the control group. In this study, we observed a disease activity index correlation with the degree of histopathological changes after induction of colitis, and this result may be related mainly to the increased activity of MMP-9 and mieloperoxidase.

Key Words: Ulcerative colitis. Dextran sulfate sodium. Metalloproteinase.