

Effects of Antibiotics, Anti-Inflammatory Agents, and Monoclonal Antibodies on Liver Function in a TNBS-Induced Crohn's Disease Rat

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Abstract

Background: Crohn's disease is a chronic inflammatory bowel disease characterized by recurring episodes of diarrhea, abdominal pain, and weight loss. Liver involvement is a common extra-intestinal manifestation of Crohn's disease.

Aims: This study aimed to investigate the effects of antibiotics, anti-inflammatory agents, and monoclonal antibodies on liver function in a TNBS-induced Crohn's disease rat model.

Study Design: This was an experimental study using a TNBS-induced Crohn's disease rat model.

Methods: Fifty adult male Sprague-Dawley rats were divided into five groups of ten rats each. The groups included a control group, a Crohn's disease group, and three treatment groups receiving antibiotics (ciprofloxacin), anti-

inflammatory agents (prednisolone), and monoclonal antibodies (infliximab), respectively. Serum liver enzymes, total protein, albumin, conjugated bilirubin, total bilirubin, and MDA levels were determined, and liver tissue histological analysis was performed.

Results: The results showed significant increases in liver enzymes (ALP, AST, ALT), oxidative stress markers (MDA), significant decrease in total protein, albumin, conjugated bilirubin, total bilirubin, and histological alterations in the Crohn's disease group compared to the control group. The respective treatment groups showed significant decreases in liver enzymes and MDA levels compared to the Crohn's disease group.

Conclusion: This study demonstrated the

protective effects of antibiotics, anti-inflammatory agents, and monoclonal antibodies on liver function in a TNBS-induced Crohn's disease rat model. The results suggest that these treatments may reduce liver inflammation and damage by eliminating bacterial translocation, reducing oxidative stress, and inhibiting the production of pro-inflammatory cytokines.

Keywords: Antibiotics, Anti-inflammatory agents, Monoclonal antibodies, Liver, Crohn's disease