

8. SUMMARY

Title: The effect of alpha lipoic acid on oxidative stress in experimental colitis model of rats

Aim and hypothesis: The aim of our study was to investigate the antioxidant effect of ALA administered via gavage or colonic enema. Our expectation was regression of the inflammation by hematogenous –systemic effect of ALA on inflammation in gavage administration and both positive local and systemic effects on colitis and blood MDA, catalase and NO levels by a transmucosal high absorbance ratio through colon when administered rectally.

Method: Fortytwo Wistar Albino rats were divided into five groups. Intracolonic corn oil one cc once a day was administered in the first group (Control group). Colitis was created in the other four groups by intracolonic TNBS 25 mg+ ethanol administration. The following day following formation of colitis, corn oil by gavage administration (Sham group), ALA 200 mg/kg/day via gavage administration (ALA gavage group), ALA 200 mg/kg/day intracolonic administration (ALA enema group) and intracolonic corn oil administration (corn oil enema group) were given once a day for seven days. On the eighth day of the experiment, the rats were sacrificed and colonic specimens obtained from location 10 cm proximal to the anus were evaluated and scored by a pathologist for macroscopic and microscopic lesions.

Results: In total microscopic evaluation , scores of Sham and corn oil enema groups were higher than score of control group ($p < 0.05$). Score of ALA Gavage group was not different from control group ($p > 0.05$). No significant mucosal pathological changes were detected in ALA Gavage group and significantly lower macroscopic score and blood MDA level were found when compared to Sham Group ($p < 0.05$).

Conclusion: We detected positive effects of ALA when administered via gavage on histopathological and biochemical parameters in experimental colitis model. However, we have not found out similar effect when we administered ALA intrarectally. As a conclusion we can suggest that ALA when administered orally may be helpful for prolonged remission in patients with inflammatory bowel disease, for decreasing the frequency of enterocolitis in patients with Hirschsprung disease and for prevention of necrotising enterocolitis following more detailed experimental studies.

Key Words: Alpha lipoic acid, antioxidant, colitis, rat

Correspondence: Adnan Menderes Üniversitesi Tıp Fakültesi Hastanesi
Çocuk Cerrahisi Anabilim Dalı, Merkez/AYDIN Tel:05324413671