1. ABSTRACT

Objective
“Preclinical and toxicological study of various drug and drugs combination on inflammatory bowel disease.”

Experimental method
Male sprague dawley (S.D) rats (250gm) were randomly allocated to 17 groups (n=6): Group I received water through out 18 days study period, groups II and III only were received 0.1 mL 3% N-ethylmaleimide (NEM) and 0.1mL of 1% methylcellulose intracolonically on 11 days of the study respectively. While group-IV to XVII were received 5-Aminosalicylic acid (5-ASA), Prednisone, Dicyclomine, Asparagus Racemosus, 5-ASA + Prednisone, 5-ASA + Dicyclomine, 5-ASA + Asparagus Racemosus, Prednisone + Dicyclomine, Prednisone + Asparagus Racemosus, Dicyclomine + Asparagus Racemosus, 5 - ASA + Prednisone + Dicyclomine, 5 - ASA + Prednisone + Asparagus Racemosus, 5 - ASA + Dicyclomine + Asparagus Racemosus, Prednisone + Dicyclomine + Asparagus Racemosus respectively through out 18 days as well as at 11th day also receive 0.1mL 3% N-ethylmaleimide (prepared in 1% methylcellulose). During the study total food intake, water intake, body weight and stool consistency of each group was measured daily and average daily food intake, water intake and body weight per group was calculated. On 18th day, the animals were weighed and anaesthetized with ether then blood was withdrawn from all groups of rats by puncturing retro-orbital plexus for assessment of liver function assay, then after abdomen was opened by a midline incision. The colon was removed, freed from surrounding tissues, rinsed and length and weight of it was measured. Colon was opened along the antimesenteric border and fixed on a wax block and scored for histological parameters like colon mucosal damage index (CMDI) and disease activity index (DAI). After scoring colon homogenate was prepared and was used for estimation of various biochemical parameters nitric oxide (NO), malondialdehyde (MDA), myeloperoxidase (MPO) and superoxide dismutase (SOD). From each group one colon and liver of randomly selected animal was stored in the formalin (10%) and was used for the histopathology study and toxicological study.
1. Abstract

Result
NEM model control animals showed significant reduction in body weight, daily water intake, food intake, SOD and significant increase colon weight, MPO, MDA, microscopic, macroscopic, CMDI, DAI, NO in as compared to normal control. Pretreatment of selected drug/s significantly reversed these changes induced by NEM. The histopathological features of NEM model control animal included surface epithelial damage, mucosal crypt drop out, edema, desquamated areas and diffuse inflammatory cell infiltration in the mucosa. Pretreatments of selected drug/s significantly attenuated the extent and severity of the histological signs of cell damage also produce good effect on serum glutamate pyruvate transaminase (SGPT), serum glutamate oxaloacetate transaminase (SGOT), ALP, LDH, total bilirubin (TB) and direct bilirubin (DB) in liver function assay.

Conclusion
The drug combination therapy gives better effects than the single drug but the liver histopathology and serum enzyme level studies shows multiple drug/s combination produce at some extent liver damaging effects.