

## Inflammatory bowel disease induced by intracolonic instillation of acetic acid: screening study of the effects of different natural drugs

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Inflammatory bowel disease (IBD), including ulcerative colitis and Crohn's disease, is an autoimmune disease associated with altered immunological response, genetic susceptibility and intestinal microflora disorders. The main clinical manifestations are abdominal pain, diarrhea, mucous bloody and purulent stools, recurrent attacks, and relapse. The mainstream treatment of patients with IBD has been the use of anti-inflammatory, immunomodulatory drugs and antibiotics to relieve the symptoms. However currently available drugs are not universally effective and cause considerable adverse effects particularly for long-term therapy. Therefore, there is a pressing need for research that leads to the development of new therapeutic strategies for the treatment of IBD. In this context, as a phytotherapeutic approach, the effects of different plant extracts with anti-inflammatory properties were here investigated in a model of experimental colitis in rat. One hour after induction of colitis by intracolonic instillation of 4% (v/v) acetic acid, extracts of *Coriandrum sativum* L., *Helichrysum italicum* Dom., *Aloe vera* L., *Cynara scolymus* L., *Zingiber officinalis* Rosc., *Boswellia carteri*, *Pistacia lentiscus* L. (1000 mg/Kg) or dexamethasone (1 mg/kg), the last used as a reference drug, were orally administered. Body weight changes, fecal boli, occurrence of diarrhoea and well-being of the animals were examined 24 hour after induction of colitis. The severity of colitis was assessed by evaluating the macroscopic and microscopic changes of damaged colon and by the measurement of myeloperoxidase (MPO) activity. The analyses showed that the treatment with *Coriandrum sativum* L., *Helichrysum italicum* Dom., *Aloe vera* L., *Cynara scolymus* L., *Zingiber officinalis* Rosc. reduced ulceration and inflammation of colon and countered myeloperoxidase activity elevation. Moreover these extracts reduced microscopic damage as indicated by the decrease of neutrophil infiltration.

The present results point out a protective effect of these extracts in experimental rat colitis induced by intracolonic instillation of acetic acid, a reliable model for screening agents to potential benefits in IBD. Further studies are needed to better characterize the effect and the possible mechanism(s) of action of these extracts.

### Key words

Inflammatory bowel disease, colon damage, natural drugs, morphology, histochemistry