Original Paper

Antidiarrheal effect of hydroalcoholic extract of *Ferula assa foetida* in rat

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Abstract

Background and Objective: *Ferula assa foetida* (*Ferula assa-foetida L.*) is an herbaceous wild plant native to Iran which is used in the traditional medicine for treating stomach and intestinal disorders. This study was done to determine the antidiarrheal effect of hydroalcoholic extract of *Ferula assa foetida* in rat.

Methods: In this experimental study, Wistar adult male rats randomly allocated into negative control, positive control and interventional groups. Animals in negative control groups were recived normal salin orally. Animals in positive control groups were recived Atropine (0.1 mg/kg/bw) for evaluation of intestinal propulsive movement and Loperamide (3 mg/kg/bw) for evaluation of diarrhea. In interventional group 1, 2 and 3 animals were received hydroalcoholic extract of *Ferula assa foetida* 100, 200 and 400 mg/kg/bw, resepectively. One hour after administration of extracts and medicine diarrhea induced using castor oil in animals. Induced diarrhea, intestinal propulsive movement and intestinal fluid accumulation were evaluated in rats.

Results: Gavage of the extract (5 g/kg) did not produce any toxic effect in rats. The mean peristaltic index in Gavage for doses of 100, 200 and 400 mg/kg/bw, control and atropine groups was 97.00%, 65.88%, 62.23%, 86.19% and 52.86%, respectively. The extract at the lowest dose in combination with atropine was significantly reduced peristaltic index rather than of the atropin alone ($P<0.05$). The extract produced a non-significant reduction in the volume of intestinal fluid accumulation and propulsive movement in the castor oil-induced intestinal transit in rats. In a dose-dependent manner, the extract delayed the onset of diarrhea. Loperamide and highest dose of extract (400 mg/kg/bw) produced a significant reduction in the frequency of defecation and severity of diarrhea ($P<0.05$).

Conclusion: The hydroalcoholic extract of *F. assa foetida* showed anti-diarrheal activity due to its inhibitory effect on intestinal fluid accumulation.

Keywords: *Ferula assa-foetida L.*, Diarrhea, Rat

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