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A study of the effects of *Cydonia oblonga* Miller (Quince) on TNBS-induced ulcerative colitis in rats

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Background and Aims: Cydonia oblonga Miller (Quince) from Rosaceae family is a fruit tree cultivated in many countries mainly in Iran. This study was carried out to investigate the effect of quince juice (QJ) and quince hydroalcoholic extract (QHE) on ulcerative colitis (UC) induced by TNBS (trinitrobenzene sulfonic acid) in rats. Rats were grouped (n=6) and fasted for 36 h before colitis induction. TNBS was instilled into the colon with a hydroalcoholic carrier and then treatments were made for 5 days starting 6 h after colitis induction with different doses of QJ (200, 400, 800 mg/kg), QHE (200, 500 & 800 mg/kg) orally, QJ (400 mg/kg) and QHE (200 and 500 mg/kg) intraperitoneally. The colon tissue was removed and tissue damages were scored after macroscopic and histopathologic assessments. Albeit the examined doses of QJ and QHE were apparently effective to reduce the extent of UC lesions, only the greatest doses (500 and 800 mg/kg) resulted in significant alleviation. Weight/Length ratio as an illustrative of tissue inflammation and extravasation was also diminished with quince treatments while the results correlated with macroscopic and histopathologic evaluations. These data suggest that QJ and QHE were effective to diminish inflammation and ulcer indices in this murine model of acute colitis. Although QHE with different doses was effective in induced colitis, the dose and/or route of administration dependency was not confirmed. So quince fractions could be considered as a suitable anticolitic alternative, however further studies are needed to support this hypothesis for clinical setting.

Keywords: *Cydonia oblonga*; Inflammation; Plant extract; Quince; Rats; Ulcerative colitis