Beneficial effects of maprotiline in a murine model of colitis in normal and reserpinised depressed rats

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Abstract:
Treatment of depression in people comorbid to ulcerative colitis through wide range of anti-depressant drugs is a challenge that needs to administer an anti-depressant drug that in addition to treat depression has a proper effect on intestinal inflammation.

The aim of this study was evaluation the effects of maprotiline on ulcerative colitis induced by acetic acid in normal and reserpine induced depressed rats.

All the animals were divided to normal and depressed groups. In normal rats colitis was induced by instillation of 2 mL of 4% acetic acid (vol/vol) and after 2 hour, maprotiline (10, 20, 40 mg/kg, i.p.) was administered. Treatment continued daily for four days. In reserpinised depressed rats, depression was rendered by injection of reserpine (6mg/kg, i.p.), prior to colitis induction and then treated with maprotiline (10, 20, 40 mg/kg). Dexamethasone (1 mg/kg, i.p.) was given as reference. Five days following colitis induction animals were sacrificed and distal colons were assessed macroscopically, histologically and biochemically (myeloperoxidase).

Maprotiline and dexamethasone significantly improved macroscopic and histologic scores and diminished myeloperoxidase activity in both normal and depressed rats while reserpine exacerbated the colonic damage.

Our data suggests that the salutary effects of maprotiline in acetic acid colitis are mediated first through mood changes that could be mediated through the gut brain axis and second for anti-inflammatory effect of its own drug.

Keyword: Depression; Reserpine; Maprotiline; Experimental colitis; Rat.