Effects of topical ropivacaine on eicosanoids and neurotransmitters in the rectum of patients with distal ulcerative colitis

**Background:** Topical administration of lidocaine has been suggested to have beneficial clinical effects in patients with active ulcerative colitis, but the mechanism of action, if any, remains obscure. As local anaesthetics may exert anti-inflammatory actions through their inhibition of nervous reflexes, we have studied the local effects of a single rectal dose of ropivacaine gel on rectal concentrations of eicosanoids and neurotransmitters in patients with relapsing ulcerative colitis.

**Methods:** In a randomized, double-blind, placebo-controlled study, concentrations of leukotriene B-4, thromboxane B-2 and prostaglandin E-2 in rectal dialysates and concentrations of substance P, neurokinin A, somatostatin, vasoactive intestinal polypeptide and calcitonin gene-related peptide in rectal biopsies from 19 patients with active, distally located, ulcerative colitis were measured before and after rectal administration of a 200-mg dose of ropivacaine- or placebo-gel by use of radioimmunoassays. For comparison with normal conditions, concentrations of neuropeptides were measured in another 19 patients with relapsing ulcerative colitis and 14 controls with non-inflamed colon.

**Results:** No significant changes in concentrations of eicosanoids or neuropeptides were observed after ropivacaine or placebo administration. Baseline concentrations of all neuropeptides, except somatostatin, were significantly lower in active ulcerative colitis than in controls with non-inflamed colon.

**Conclusions:** These findings reveal no evidence of anti-inflammatory actions by ropivacaine in active ulcerative colitis and thus provide no rationale for topical treatment with local anaesthetics.