Untoward effect of Non-steroid anti-inflammatory drugs administration on anastomosis wound healing in rat model of colon anastomosis

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Background: Non-steroid anti-inflammatory drug (NSAID) is one of the most common medicines given before, during and after operation, including colon anastomosis operation. Some research shows that NSAID can delay wound healing process. However, research about NSAIDs contribution in the colon anastomosis wound healing is not known yet. Objective: We aim to investigate the effect of various NSAID on anastomosis wound healing process in rats. Methods: Study was conducted on rat model of colon anastomosis. The rats were divided into 4 different groups. The groups treated either with diclofenac, metamizole, paracetamol or placebo. Three days after colonic anastomosis procedures, rats were sacrificed. Histologic study was done on hematoxylin eosin stained specimen. Result: Diclofenac and metamizole groups showed less sign of anastomosis wound healing signs compare with those on placebo and paracetamol groups. Discussion: NSAIDs administration halted inflammation whereas it is needed in wound healing process. Inflammation contributes to the production of cytokines and growth factors needed for anastomosis wound healing. Therefore, NSAIDs with strong anti-inflammatory effect such as diclofenac and metamizole, show less colon anastomosis wound healing due to strong inflammation suppression. Conclusion: NSAIDs administration after colonic anastomosis affects anastomosis wound healing. Therefore choosing NSAIDs with sufficient analgesic effect but less anti-inflammatory are suggested.

Keywords: NSAIDs, wound healing, inflammation, colon anastomosis