

Effects of peritoneal exposure to povidone iodine, heparin and saline in post surgical adhesion in rats

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Abstract

Background: Adhesions are common consequences of abdominal operations and they can cause significant complications such as bowel obstruction, infertility and abdominal pain. A wide variety of adhesion-reducing substances have been evaluated but we are still far from the ideal adhesion preventing agent. In this study, we decided to evaluate the effects of peritoneal exposure to betadine and heparin in post-surgical adhesions in rats. **Methods:** A total of 39 male Wistar-Albino rats weighting 200-250 grams were randomly assigned to three groups. Anesthesia was performed using intramuscular ketamine and xylazine. After a midline laparotomy, enterotomy and repair, bowels were irrigated by saline 0.9%, heparinized saline and betadine solution. Finally, adhesions were evaluated and scored after 20 days. **Results:** All groups were almost similar in mean adhesion score in the site of enterotomy but mean total abdominal adhesion score in betadine group was significantly higher than those of other groups. According to pathological studies, peritoneal inflammation was more severe in the betadine group but there wasn't any statistically significant difference between frequency of foreign body reaction and wound healing stage among three groups. Surprisingly, anastomosis leakage was significantly more common in heparin group. **Conclusions:** To date, the most effective means of limiting adhesions is a meticulous surgical technique although intraperitoneal irrigation with heparin seems to reduce adhesions but further studies should be done to evaluate the effects of local administration of heparin on anastomosis leakage.

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Indexed Keywords

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Chemicals and CAS Registry Numbers: heparin, 37187-04-0, 8057-48-0, 870-11-8, 900-48-0; ketamine, 1877-77-9, 7740-88-1, 81771-21-3; povidone iodine, 20600-41-8; sodium chloride, 7747-14-0; xylazine, 23076-30-9, 7371-71-7

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