

Summary of the DVSc thesis No: 17914, Faculty of Veterinary Medicine, Urmia University.
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Title of thesis: Evaluation of the therapeutic effects of linalool on peritoneal adhesions in rats.

Summary:

The current study examines the effects of linalool in preventing postoperative abdominal adhesions. Twenty male Wister rats were randomly divided into four groups: 1-Sham: In this group, the abdomen was approached and without any manipulations, it was sutured. 2- Control: Rats in this group underwent a surgical procedure to induce adhesions. This involved making three incisions on the right abdominal side and removing a 1×1 cm piece of peritoneum on the left abdominal side. 3- Treatment groups: These groups underwent the same surgical procedure as the control group to induce adhesions. Animals in these groups received linalool orally with doses of 50 and 100 mg/kg respectively, for a period of 14 days. Moreover, rats in the sham and control group received normal saline via gavage for 14 days. The evaluation of TNF- α , TGF- β , VEGF, and Caspase 3 was performed using western blot and IHC methods. Furthermore, oxidative stress biomarkers such as MDA, TAC, GSH, and NO were assessed in the peritoneal adhesion tissue. The findings revealed that linalool significantly reduced peritoneal adhesions by reducing TNF- α , TGF- β , VEGF, and Caspase 3 levels. Moreover, MDA concentration was significantly decreased, while NO, TAC, and GSH levels were notably increased. Overall, linalool was effective in preventing adhesion formation and reduced inflammation, angiogenesis, apoptosis, and oxidative stress. Therefore, linalool as a potent antioxidant is suggested for reducing post-operative adhesions in rats.

Keywords: Linalool, Adhesions, Peritoneal adhesions, Post-operative adhesions, Rat