

Evaluation of the anti-peptic ulcer activity of *sesamum indicum* oil in Indomethacin induced gastric ulcers in rats

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Peptic ulcers can be developed inside the inner lining of the stomach (gastric ulcers) or the small intestine (duodenal ulcer)⁽¹⁾. *Sesamum indicum* seeds is a great source of protein as each 100 grams of seeds contain approximately 19 grams of protein⁽¹⁾. Previous research has suggested that *sesamum indicum* oil can improve peptic ulcers^(1,2). However, there has been little research done on the effects of *sesamum indicum* oil on peptic ulcers, and findings remain inconsistent⁽²⁾. Therefore, the current study aimed to examine the effects of two different types of *sesamum indicum* oil (different in colours) available in Saudi local markets.

In total, 60 male albino Sprague Dawley rats weighing approximately 210 ± 15 grams were included. They were divided into four groups (15 in each): group 1: negative control, group 2: ulcer-induced rats (uir), group 3: uir + 1 mg/kg of type 1 *sesamum indicum* oil, and group 4: uir + 1 mg/kg of type 2 *sesamum indicum* oil. Gastric ulceration was induced with a single oral dose of indomethacin (30 mg/kg body weight) after a 24 hour food fast. The stomachs were washed, and the ulcer areas were identified on millimeter paper⁽³⁾. Then, the ulcer index was calculated as follows: Ulcer index = Ulcer size X ulcer number. The mucin content, volume of the gastric juice, and pH of the gastric juice were determined based on previous method⁽⁴⁾. Data were analyzed using IBM SPSS, (IBM Corp., Armonk, N.Y., USA). One-way analysis of variance (ANOVA) was used to compare the differences between groups.

Groups 3 showed a significant reduction ($p < 0.05$) in the ulcer size (3.4 ± 0.4), ulcer number (3.7 ± 0.55), ulcer index (12.58 ± 0.95), and volume of gastric juice (3.17 ± 0.08) compare to group 2 (24.7 ± 0.39), (13.5 ± 0.66), (333.45 ± 17.4), (8.25 ± 0.13) for ulcer size, ulcer number, ulcer index and volume of gastric juice respectively. Groups 4 showed a significant reduction ($p < 0.05$) in the ulcer size (4.2 ± 0.5), ulcer number (2.5 ± 0.48), ulcer index (10.5 ± 0.76), and volume of gastric juice (4.11 ± 0.23) compare to group 2. In addition, the pH of the gastric juice and Mucin were significantly higher ($p < 0.05$) in group 3 (4.76 ± 0.05 , 339.4 ± 2.2) and in group 4 (4.11 ± 0.11 , 344.3 ± 3.1) than group 2 (2.57 ± 0.04 , 221.8 ± 1.8). However, there were no significant differences between both types of *sesamum indicum* oil based on the mentioned parameters.

In conclusion, consuming both types of *sesamum indicum* oil can accelerate gastric healing in rats with Indomethacin induced ulcers, and *sesamum indicum* oil can be consider a potential protective natural agent against gastric ulcer complications. However, no clear inference can be drawn at this stage, so we offer this work for further extensive research.

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