An animal study on the effect of intra-nasal and topical administration of pumpkin seed oil on anesthesia induced by intramuscular injection of ketamine-xylazine

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Abstract:

Background and Purpose: According to Persian Medicine texts, pumpkin (*Cucurbita pepo* L.) oil has been suggested as a nasal drop for insomnia, but the hypnotic effect of pumpkin seed oil has not been studied despite recommendation by traditional medicine and general use. This study aimed to evaluate the clinical impact of topical pumpkin seed oil on anesthesia in New Zealand white rabbits and to evaluate its analgesic and hypnotic properties. We used a drug along with chemical anesthesia that increases its effectiveness and does not have significant side effects and eliminates the need for high doses of anesthesia.

Materials and Methods: Twenty-five adult New Zealand white rabbits were randomly divided into five groups of 5 and received ketamine-xylazine. The first group was anesthetized only with ketamine-xylazine anesthesia protocol. One hour before receiving the anesthesia protocol, the second group, received pumpkin seed oil by administering two drops in one nostril, while the fourth group received two drops in each nostril. The third group received ten drops of pumpkin seed oil on the inner skin of the long cartilage of one ear, and the fifth group received ten drops of pumpkin seed oil on the inner skin of the long cartilage of both ears as a topical application.

Results: In the analysis of variance (ANOVA), there was a significant difference between the mean duration of anesthesia in experimental and control groups. Substantial difference existed between the mean duration of anesthesia in the control group and the experimental group three. None of the vital signs were alarming in any groups, and all were within approved range during rabbit anesthesia.

Conclusion: The results showed that using pumpkin seed oil along with ketamine-xylazine anesthesia protocol significantly increases hypnotic and analgesic components of anesthesia.

Keywords: Cucurbita, Anesthesia, Ketamine, Xylazine, Rabbit, Tryptophan

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