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## The role of *Salvia officinalis* in preventing ischemia-reperfusion injuries in kidney of rats

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*Salvia officinalis* is a plant from the family Laniaceae which grows all over the world. The plant has been used for its pro-appetite, energetic, diuretic, anti-convulsant, and analgesic effects. It has also been believed that the plant is effective in gastric neuropathies. In some studies antifungal and antimicrobial effects of the plant are documented. In this study the water-soluble extract of the plant is used to control the experimental ischemia-reperfusion injuries (IRI) in kidney of rats. 18 male Sprague-Dowley rats were used in this study. The animals were randomly assigned into two equal groups. Under general anesthesia (90 mg/kg ketamine, 10 mg/kg xylazine, IP) and aseptic surgical conditions, right kidney of the animals was approached from right sublumbar region. A Rumel tourniquet was used to induce ischemia for 40 minutes in the kidney, followed by an hour reperfusion. The animals were sacrificed thereafter. In treatment group the plant extract was administered orally (0.08-0.1 cc of undiluted extract) on 48, 24 and 0.5 hours before surgery. In control group the same amount of normal saline was administered. Following sacrificing the animals the right kidney was removed and fixed in 10% buffered formalin. The sections were stained by hematoxylin and eosin and studied under light microscope. Severe vacuolar degeneration in the epithelium of proximal tubules of control group could be seen. There was also severe hyperemia and hemorrhage in control group. In treatment group the injuries were moderate in comparison to the control one. It can be concluded that *Salvia officinalis* extract can protect the kidney against the IRI.

**Keywords:** *salvia officinalis*, pathological finding; vacuolar degeneration

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## Ketamine induces despair behavior in the mouse

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**Introduction:** Dissociative anesthetics and barbiturates are used not only to induce general anesthesia, but also for several other clinical purposes. In addition, they may be considered as drugs of abuse in humans. The present study aimed at investigating the effects of two selected substances of these groups, i.e., ketamine hydrochloride (KHC) and sodium thiopental (STP) on some behavioral aspects in mice. **Materials & Methods:** Fifteen adult male mice were divided into three groups which received either saline solution (control), KHC (10 mg/kg), or STP (10 mg/kg) intraperitoneally. Thirty minutes later, the following parameters were studied: pain sensation, catalepsy, grooming behavior, resistance on inclined surface, floating in water, locomotor activity, and behavior on elevated plus maze (EPM). Data were presented as means  $\pm$  SEM and the means of three groups were compared by using one-way analysis of variance. Where permitted, the mean of an individual group was compared with that of the controls by Bonferroni's t test. A P value smaller than 0.05 was considered statistically significant. **Results:** No significant effect was exerted by KHC and STP on behavior in the mouse except the fact that of KHC on the floating activity of the animals. KHC-treated animals stopped swimming during 2 min  $1.75 \pm 0.55$  times which showed an increase in comparison to the control group ( $P < 0.05$ ). **Conclusion:** This study clearly showed that a single administration of KHC may produce despair in the animal model used. As ketamine-like drugs such as phencyclidine, are abused as street drugs, they are likely to increase the suicide tendency in the youth. Therefore, complementary surveys are suggested to be performed in human subjects.

**Keywords:** Barbiturates, Dissociative Anesthetics, Mouse, Behavior, Despair