



ORIGINAL RESEARCH

Effect of Oral Honey Administration on Sleep-Deprived Male Mice

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ABSTRACT

Background: Sleep is a biologic process that is essential for life and optimal health. Sleep plays a critical role in brain function and systemic physiology. The deleterious health consequences of sleep deprivation are associated with risks for a wide variety of medical conditions. Honey's potential role in restorative sleep may have implications in improving long term health.

Objective: To determine the effect of honey on sleep deprivation in male mice.

Method: The study was carried out using four (4) groups of young male mice (N=5-6 per group) deprived of sleep for a period of 6 hours. Bee honey was administered orally at three dose levels; 10 %, 20 % and 40 %^{V/v} respectively to three groups while the control group was administered normal saline (vehicle). Novelty-Induced Behaviour (NIB), Elevated plus-maze (EPM), Hole board and Y-maze models were used to evaluate the effects of honey on the mice.

Results: In the NIB model, a significant ($p < 0.05$) decrease in locomotion was observed dose-dependently. The same observation was recorded for rearing behaviour while a biphasic effect was observed in grooming behaviour. The results obtained in the other models showed that locomotor activity was significantly decreased suggesting that honey has central inhibitory effect. In the hole board test and EPM, there were significantly ($p < 0.05$) decreased activity of the mice due to the administration of honey.

Conclusion: This study demonstrates that honey exerts dose-dependent central inhibitory effects in sleep-deprived male mice therefore suggesting possible amelioration of sleep deprivation effects.

Keywords: Oral Honey, Sleep Deprivation, Behavioural Test, Neurological Effect, Mice