Preliminary study on the effect of co-administration of nicotine and tualang honey on testis histological features

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This study was conducted to investigate the effects of co-administration of nicotine and honey on testis histological features. Fifteen Sprague-Dawley rats (6-8 weeks old) were randomly divided into the honey (H), nicotine (N), and co-administration of nicotine-honey (NH) groups. The rats were daily injected with 0.5 mg/100g of nicotine and force-fed with 1.0 ml/100g of honey for the N and H groups, respectively. For the NH group, the rats were injected with 0.5 mg/100g nicotine and force-fed with 1.0 ml/100g honey. On day 61, the rats were sacrificed and the testes were fixed in Bouin's solution prior to histological processes followed with Haematoxylin and Eosin (H&E) staining technique. Co-administration of nicotine-honey (NH) group showed significantly larger diameter of seminiferous tubule (277.56±2.52 μm) and diameter of lumen (131.06±2.52 μm) as compared to N group (p<0.05). The honey treated rats also showed significantly increase in diameter of seminiferous tubule (272.66±2.52 μm) as compared to the nicotine treated rats (p<0.05). There were no significant differences between N, H and NH groups for width of spermatogonia and primary-secondary spermatocytes layers. These findings may suggest that Tualang honey has healing potential against toxic effects of nicotine.

Keywords: Tualang honey; Nicotine; Testis histology; Sprague-Dawley rat.