

Mucoprotective Effect of *Trigona* spp. Propolis on the Stomach of Rats Induced by Ethanol 99.5%

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Background: Natural remedies as preventive treatment for hemorrhagic gastritis have become a common choice owing to its lesser side effects. *Trigona* spp. propolis is known as potential anti-inflammatory that inhibit gastric acid secretion. This study aimed to understand the mucoprotective effect of *Trigona* spp. on the stomach of rats induced by ethanol 99.5%.

Methods: This was an experimental study was performed on wistar rats. The subjects were 28 male rats that were divided into four groups. Group 1 and 2 were given propylene glycol (1 milliliter), group 3 propolis (300 milligram/kilogram body weight) and group 4 ranitidine (50 milligram/kilogram body weight). Group 2, 3 and 4 were also given ethanol 99.5% (1 milliliter) one hour later. On the 3rd day, the rats were dissected, stomachs incised and the number and length of hemorrhagic lesions were recorded.

Results: The results for mean number of hemorrhagic lesions were 0.57 ± 1.13 cm, 5.57 ± 1.13 cm, 4 ± 1.15 cm, and 5.28 ± 1.38 cm respectively from group 1 to 4. As for mean length of hemorrhagic lesions it was 0.18 ± 0.31 cm, 0.82 ± 0.15 cm, 0.43 ± 0.09 cm, and 0.60 ± 0.12 cm for group 1 to 4. The p value from Analysis of Variance (ANOVA) testing showed 0.000 ($p \leq 0.05$) indicating significance.

Conclusion: Propolis was proven to have a mucoprotective effect and can be used as a preventive treatment for hemorrhagic gastritis induced by ethanol 99.5% in rats. Propolis also appeared to be more effective in comparison to Ranitidine (50 milligram/kilogram body weight).

Keyword: Hemorrhagic gastritis, Mucoprotective, Propolis

Fat Mass Profile in Early Adolescent: Nutritional Parameter and rs9939609 FTO Polymorphism Influence

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Background: Fat mass is one of important parameters for metabolic risk screening in adolescent. Dynamic environmental changes may have influenced to semi-urban people health status and disease risk. A genetic factor rs9939609 FTO gene of variant alleles is predisposed to greater adiposity fat mass. Nutritional intake in adolescent is an important factor to optimize growth spurt and maintain health status. The objective of the study is to identify the characteristic of fat mass with rs9939609 FTO polymorphism, macronutrient intake and nutritional status parameter in early adolescent.

Methods: As many 192 as early adolescents aged 10-14 years were genotyped for rs9939609 polymorphism, underwent body composition and anthropometric measurements, and were interviewed eating pattern of macronutrient.

Results: Applying a bivariate analysis, there are significant differences fat mass based on gender ($p: 0.03$), height ($p: 0.04$), and body mass index ($p: 0.00$); and non significant differences from rs9939609 FTO polymorphism ($p: 0.93$), calorie intake ($P: 0.93$), and protein intake ($p: 0.2$). The result from multivariate analysis showed that gender, BMI, height, and protein intake had influence to fat mass.

Discussion and conclusions: Hormonal influence in early adolescent has increased fat deposition in female. Body height affects body composition because of differences skeletal and muscle mass. There is no influence of rs9939609 gene FTO high variation of risk allele between races although FTO has the biggest risk allele among other genetic factors to fat deposition. Many multifactorial genetic and environment have influenced fat mass so that it is important to analyse another obesity gene and environment factor because it found many indirect correlation between chronic disease, genetic characteristic, trend of sedentary lifestyle in adolescent and a long term comorbidity.

Keyword: fat mass, nutritional parameter, polymorphism