

## **A56 Associations of genetics with abdominal obesity and metabolic syndrome among vegetarians in Malaysia**

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Genome-wide association studies have demonstrated that genetic variants of the fatty acid desaturase 1 (*FADS1*) gene are important determinants for abdominal obesity and metabolic syndrome (MetS) among the general population. However, the associations of the genetic variant of rs174547 in the *FADS1* gene with abdominal obesity and MetS are not well established among vegetarians in Malaysia. The present cross-sectional study aimed to identify the association of the genetic variant of rs174547 in the *FADS1* gene with abdominal obesity and MetS among 200 vegetarians (Male: 34.5%; Female: 65.5%) from selected community centres in Kuala Lumpur and Selangor. The data on socio-demographic characteristics and vegetarianism practices were self-reported by the vegetarians. Anthropometric measurements (body weight, height and waist circumference) and blood pressure were measured according to standard protocols. A total of 5.0ml of overnight fasting venous blood sample was collected by the registered phlebotomist for blood lipid profile analysis. Genotyping was performed using allele-specific polymerase chain reaction through extracted DNA. The average number of years for practicing vegetarianism was 13.7±9.2 years among the vegetarians. A majority of the vegetarians had a TT genotype of rs174547 in the *FADS1* gene (39.5%). Based on the Joint Interim Statement 2009, the prevalence of abdominal obesity and MetS were 35.5% and 21.0%, respectively. Multiple logistic regression analysis showed that vegetarians with homozygous TT genotype were 4.66 times (95% CI:1.40, 15.57,  $p=0.012$ ) and 3.57 times (95% CI:1.02, 12.47,  $p=0.046$ ) higher odds of developing abdominal obesity and MetS compared to vegetarians with homozygous CC genotype after the models being adjusted for age, sex and ethnicity. Overall, abdominal obesity and MetS were common among Malaysian vegetarians. There is an urgent need to investigate the causal associations of rs174547 in the *FADS1* gene with abdominal obesity and MetS through prospective studies among Malaysian vegetarians.