



Association of the *FTO* gene SNP rs17817449 with body fat distribution in Mexican women

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ABSTRACT. Polymorphisms in the *FTO* gene are associated with obesity, body mass index, hip circumference, and visceral and subcutaneous fat area. The objective of this study was to analyze the association of the *FTO* rs17817449 genetic variant (T>G polymorphism) with body fat distribution patterns in women. We included 65 women and 71 healthy subjects in this study. Anthropometric parameters were determined and laboratory studies were performed. The polymorphism was detected by a PCR-RFLP method. The groups were categorized by

type of body fat distribution: gynoid (N = 29) and android (N = 36). We found that the *FTO* gene polymorphism was not associated with body fat distribution according to the type of obesity ($P > 0.05$). The contribution of G and T alleles among groups indicated no statistically significant differences between the reference and gynoid group [$P = 0.93$; odds ratio (OR) = 0.97; 95% confidence interval (CI) = 0.46-2.02] and the reference and android group ($P = 0.56$; OR = 1.20; 95%CI = 0.54-2.82). Thorax circumference and thorax breast circumference were significantly different between the two groups ($P = 0.009$ and 0.021 , respectively) with the genotype TT. We conclude that the *FTO* rs17817449 TT genotype predisposes individuals to fat deposition in the thoracic and breast region; individuals carrying this genotype had a decrease in thoracic and breast dimensions indirectly causing the gynoid phenotype in Mexican women.

Key words: FTO; rs17817449; Polymorphism; Mexican women; Body fat