

# THE ROLE OF SERUM ICAM-1 LEVEL AND ICAM-1 GENE K469E POLYMORPHISM ON MICROALBUMINURIA IN OBESE INDIVIDUALS

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**Background:** A growing body of evidence suggest that obese individuals are under risk of renal parenchymal disorders when compared to nonobese counterparts. Microalbuminuria is the early marker of renal involvement. Although most of obese patients carries multiple risk factors for microalbuminuria, some obese individuals without risk factor may progress to microalbuminuria. The present study was performed to examine the role of ICAM-1 gene 1462A>G (K469E) polymorphism on microalbuminuria in obese subjects without diabetes mellitus, hypertension, hiperlipidemia and older age.

**Methods:** Ninety eight obese and 96 nonobese individuals without a comorbidity enrolled into the study. Serum ICAM-1 level was measured by enzyme linked immunoabsorbent assay (ELISA) method. ICAM-1 gene 1462A>G (K469E) polymorphism was examined by restriction fragment length polymorphism-polymerase chain reaction (RFLP-PCR). Nephelometric method was used to examine urinary albumin loss, and microalbuminuria was measured by albumin to creatinine ratio.

**Results:** Obese individuals had significantly higher microalbuminuria and proteinuria level compared to nonobese subjects(p:0.043 and p:0.011;respectively). GG genotype of ICAM-1 carriers have significantly higher microalbuminuria compared to individuals with AA or AG genotype carriers (p:0.042). Serum ICAM-1 level was significantly correlated with creatinine and microalbuminuria (p:0.002 and p:0.03; respectively). Logistic regression analysis indicated a 7.39 fold increased risk of microalbuminuria in individuals with GG genotype of ICAM-1 gene 1462A>G (K469E) polymorphism.

**Conclusions:** GG genotype of ICAM-1 gene K469E polymorphism is associated with increased microalbuminuria in obese individuals without another metabolic risk factor.

**Keywords:** Obesity, microalbuminuria, adhesion molecule, ICAM-1 gene, polymorphism

