Association between *MBL2* rs7096206 polymorphism and mannose-binding lectin in patients with atopic disease

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ABSTRACT

Background: The serum level of MBL is dependent on single nucleotide polymorphisms in the MBL2 gene. The MBL impairment can lead to immunological damages and autoimmune diseases, however, its pathogenic mechanisms are unclear. **Objective:** The aim was to study *MBL2* rs7096206 polymorphism in patients with atopic disease. **Methods:** A total of 180 patients were recruited in this study including atopic n=90 and non-atopic healthy control n=90. Blood samples were collected from patients in each group and DNA was extracted using gSYNC™ DNA Extraction Kit. The genotype of MBL2 rs7096206 polymorphism was determined by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP). Serum MBL levels were measured by an enzyme-linked immunosorbent assay (ELISA). **Results:** The XY genotype distribution in atopic patients were 18.9% (n=17) and 10% in control group (n=9). YY genotype was frequently observed in control group than in atopic group [n=81 (90.0%) vs. n=73 (81.1%); p=0.09]. The median serum levels of MBL were 3793.5±811.01 ng/ml in atopic group and 2665.55±922.23 ng/ml in control group (p<0.001). Additionally, the median of serum levels of MBL was quite higher in the atopic group (3775.4±840.6 ng/ml) than in the control group who has YY genotype (2711.3±945.9 ng/ml; p<0.001). For XY genotype, the median of serum levels of MBL was also significantly higher in the atopic group (3861.0±705.9 ng/ml) than in the control group (2453.9±795.7 ng/ml; p<0.001) those who is carrying XY genotype. There was no relation between YY, XY genotypes, and MBL level (p=0.808, p=0.773) in study groups. **Conclusion:** The frequency of risk X allele was not different between case and control groups. The serum level of MBL was significantly high in the atopic group comparing to controls. Serum MBL level in atopic patients was not differed by MBL2 rs7096206 polymorphism.