Abstract Paraoxonase (PON1) is a calcium-dependent esterase that is a component of high density lipoprotein. PON1 serves as a protective factor against oxidative modification of LDL. Serum PON1 activity decreases with diseases related to lipid metabolism which increases risk of atherosclerosis. Research has focused on two polymorphisms. PON 55 L>M polymorphism which is one of two polymorphism effects concentration of paraoxonase because of connection to polymorphism on PON 1 promoter region. PON 55 L>M polymorphism located on PON1’s N-terminal region which has role to bind HDL. Many researches were carried out to investigate relationship between PON1 gene polymorphism and plasma lipoproteins. In this study, patients whose lipid profile measured in biochemistry laboratory are investigated. We examined amino acid changes at codon 55 in the PON1 gene by polymerase chain reaction and using restriction enzymes in 80 patients (26 men, 54 women; mean age 55.31±14.6 years) with high total cholesterol and LDL-C levels and in 60 patients (15 men, 45 women; mean age 42.75±17.7 years) with normal serum lipoprotein profile. Distribution of genotypes in the patient and control groups were 17.5% and 5% for MM, 40% and 51.7% for LM, 42.5% and 43.3% for LL, respectively. While the frequency of PON1 55M allele was higher in the patient group (0.375 vs.0.308), PON1 55 L allele frequency was higher in the control group. There was a marginal significant relationship between the PON1 M/L 55 polymorphism and hyperlipidemia (p=0.065). These data suggest that the PON1 M/L 55 polymorphism may show a significant relationship with hyperlipidemia. Key words: Hyperlipidemia, genotype, PON 55, polymorphism.