International Journal of PharmTech Research
CODEN (USA): IJPRIF, ISSN: 0974-4304, ISSN(Online): 2455-9563
Vol.9, No.5, pp 269-276, 2016

Assessment of leptin levels in the different genotypes and leptin receptor genes in the women with polycystic ovary syndrome and diabetes mellitus type 2 in Iraq population

Maha F. Smaism*

Clinical biochemistry Dept.,College of Medicine, University of Babylon, P.O.Box 473 ,Hilla, Iraq.

Abstract : Polycystic ovary syndrome (PCOS) is one of the most common endocrine disorders, which is involved in the multi-system disease, and its etiology is still not clearly understood. It is currently considered that not only the genetic factors but also the environment factors play a crucial role in the pathogenesis of PCOS. Diabetes mellitus (DM)is a term that described a metabolic disorder with heterogeneous etiologies which has been characterizing by chronic hyperglycemia and disturbances of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action, or both. There is a complex interaction between obesity, insulin and leptin resistance, and the endocrine abnormalities in PCOS. The aim of this study was to assess the effect of G>A at nucleotide 2548 codon 849 of leptin gene and Q>R at nucleotide 668 codon 223(Gln223Arg) of leptinreceptor gene polymorphisms on serum leptin concentrations in PCOS and DM women patients.This investigate was done by extraction of DNA from whole blood and used PCR-RFLP technique to assess of the different genotypes of LEP and LEPR genes. Leptin concentration was assessed by competitive ELISA method. The present study showed a significant different in leptin levels of GG, QQ genotypes in PCOS patients compared to GA and AA genotypes and the frequency of GG genotypes in LEP and LEPR genes were 57% and 40% compare to controls(37%) and the odd ratios were(0. 443, CI $_{95\%}$ 0.2-0.7)(1.15,CI 95% 1.24-3.23), respectively. Conclusion. The GG and QQ genotypes was risk factors to PCOS patients, but not for DM patients. PCOS is associated with leptin levels in women with GG genotypes of LEP gene compared to those with GA and AA genotypes. In both PCOS and DM patients are not associated in LEP concentration in QQ genotypes of LEPR genes compared to QR and RR genotypes.

Key words: leptin, leptin receptor, polycystic ovarian syndrome, diabetes mellitus, genotypes.

Maha F. Smaism /International Journal of PharmTech Research**,** 2016,9(5),pp 269-276.

*****