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The relationship between cardiovascular complication risk and detection of Haptoglobin in Diabetes Mellitus type 2 patient in Al-muthanna province- Iraq

A Thesis

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Abstract

The present study aimed to investigate the evidence of cardiovascular risk in type 2 diabetic patient according to haptoglobin genotype ,eighty (80) samples (38males, 42females), and (30) healthy samples (15males, 15females) as a control group, collected between October 2013- May 2014 and it was carried out at Al-Hussein hospital in Al-Muthanna province/Iraq. The patients were classified into three groups 1st with DM-II, 2nd with heart disease 3rd with DM and heart disease in addition to the control group. All groups are classified according to their body mass index (18-24.9 normal, 25-39.9 over weight), the fasting blood sugar, lipid profile (cholesterol, triglyceride, high density lipoproteins, low density lipoproteins) have been studied. The results show that there is a high significant values ($p<0.01$) in all variance it showed a significant increase in level of cholesterol, HDL, TG and LDL, in patients with diabetes mellitus compared with the control group For FBS and BMI, age the results showed an increase in FBS level in patients with diabetes mellitus compared with control group with significant ($p<0.01$).

In case of patients with heart disease compared with control groupthe results showed a significant increase ($p<0.01$) in level of LDL-cholesterol and TG, and significant increase ($p<0.01$) of BMI in patients.in 3rd groups the results show that the cholesterol level increase in patient with heart disease compared with control group but not significant compared with control. The study also showed the existence of significant difference in LDL, TG and BMI for all heart patient ($p<0.01$) compared with normal volunteers.

The data also shows there are a negative correlations between each of the following variables: BMI with FBS ,HDL ,TG ; LDL with FBS and age

;TG with CHO ; while there are a positive correlation between other parameters . A high correlation appears between age and FBS, CHO; TG with FBS. The height was appear positive relationship with weight, age , TG, while its negative with FBS, Cholesterol, HDL, LDL, BMI .

In DM group the correlation between measured parameters in this study result show that the correlate between weight and TG, LDL, BMI, HDL, and age, are positive, while in heart patient group the result appear that the correlate between weight and TG, LDL, BMI, HDL, FBS, and age, are positive. in group with DM and heart disease the result appear that the correlate between weight and height , TG, LDL, BMI, and age , are positive , while the correlation between Cholesterol , FBS and HDL, are negative .

On molecular level, HP1 and HP2 were detected with pcr products of 1757 and 3481 bp were amplified from genomic DNA containing alleles Hp 1 and Hp 2, respectively.After electrophoresis using 1% agarose gels , Hp genotype-specific banding patterns were obtained; genotypes Hp 1-1 and Hp 2-2 were characterized by single bands representing the 1757- and 3481-bp products, respectively. Inthepresenceofthe1757-bpproduct,itwasnotpossible to conclusively determine whether the 3481-bp Hp 2-specific PCR product was also present. In these cases, an alternative protocol (protocol 2), consisting of two separate reactions, was chosen: one reaction, using primers A and B, was aimed at detecting the 1757-bp Hp 1-specific product, and the other reaction, using primers C and D, was aimed at detecting the 349-bp Hp 2-specific product. The haptoglobingenotypesof40consecutivepatientsweredeterminedwithgenomicDNApreparedfrombloodsamples of diabetes-heart patients.