MEAN PLATELET VOLUME AND IN PATİENT WİTH MALE HYPOGONADOTROPİC HYPOGONADYSM

THE RELATİONSHİP BETWEEN LOW TESTOSTERONE, METABOLİC SYNDROME, IMPAİRED FASTİNG GLUCOSE, CARDİOVASCULAR RİSK

RUNNİNG TİTLE: MPV AND HYPOGONADOTROPİC HYPOGONADYSM

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Aim: Isolated male hypogonadotropic hypogonadism can be congenital or acquired. Mean platelet volume (MPV), which is a determinant of platelet function, is an independent risk factor for cardiovascular disease. The aim of this study was to evaluate MPV values in untreated, normosmic, isolated,male, idiopatic hypogonadotropic hypogonadism (IHH) patients,and MPV the relationship betweenlow testosterone levels, metabolic syndrome, impaired fasting glucose (IFG) ,cardiovascular risk in these patients

Material and methods: 31 patients with untreated, normosmic, isolated, male, idiopatic hypogonadotropic hypogonadism mean age 22 ± 4.931, 30 healthy control mean age 22.5 ± 7.5 who came to Erzurum Region Education and Research Hospital, out-patient clinic of Endocrinology were included in the study. Patient group and the control group were matched for age, BMI. It was used the IDF criteria (2005) for diagnosis of metabolic syndrome, and the ADA criteria (2007) for diagnosis of impaired fasting glucose. All hormonal analyses were done by chemiluminesance assay.All the study subjects were evaluated by biochemical and platelet parameters. Hypogonadotropic Hypogonadism was defined as total testosterone less than 229 ng/dL, absent or inadequate aspituitary gonadotropins.

Result: The MPV levels were also significantly higher in IHH patients than controls (8.6±0.65 and 7.6±0.54 fL, respectively; P=0.000). To assess the correlation with MPV, a Pearson correlation analysis was performed on each variable. MPV had a positive correlation between metabolic syndrome (r=0.444; P=0,000), IFG (r=0.371; P=0,04), insulin (r=0.820; P=0,02), HOMA-IR (r=0.822; P=0,023), BMI (r=0.373; p=0.012). MPV had a negative correlation between total testosterone (r=-0.586; P=0,000), free testosterone (r=-0.634; P=0,000), LH (r=-0.471; P=0,000) , FSH (r=-0.434; P=0,000).

Metabolic syndrome, IFG inIHH patients had significantly more often than controls (P=0.003, P= 0,000 respectively).

The multiple regression analysis of MPV and other risk factors was performed. Age, metabolic syndrome, IFG, BMI, fasting glucose, insülin, CRP and HOMA-IR were independent predictive factors of MPV.

Conclusion: These results suggest that subjects with male IHH are susceptible to increased platelet activation and increased MPV values which contribute to increased risk of cardiovascular complications.From this study it has been observed that hypogonadotropic hypogonadism with low testosterone may be a feature of the metabolic syndrome, impaired fasting glucose, increased MPV levels, and cardiovascular risk in young adult males. Thus, in IHH patient, testosterone replacement therapy can be protecting from the cardiovascular disease (CVD).

Key words: hypogonadotropic hypogonadism, MPV, low testosterone, metabolic syndrome, impaired fasting glucose, cardiovascular risk