

COAGULATION PARAMETERS and PLATELET FUNCTION ANALYSIS in PATIENTS WITH ACROMEGALY

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Objective: Acromegaly is associated with increased cardiovascular morbidity and mortality. But the data about the evaluation of coagulation and fibrinolysis in acromegalic patients is very limited and to our knowledge, platelet function analysis has never been investigated. So we aimed to investigate the levels of protein C, protein S, fibrinogen, antithrombin 3 and platelet function analysis in patients with acromegaly.

Methods: Thirty-nine patients with active acromegaly and 35 healthy subjects were included in the study. Plasma glucose and lipid profile, fibrinogen levels, GH and IGF-1 levels and protein C, protein S and antithrombin III activities were measured in all study subjects. Also, platelet function analysis was evaluated with collagen/ADP- and collagen-epinephrine- closure times.

Results: Demographic characteristics of the patient and the control were similar. As expected, fasting blood glucose levels and serum GH and IGF-1 levels were significantly higher in the patient group compared with the control group (p_{glc} : 0,002, p_{GH} : 0,006, $p_{\text{IGF-1}}$: 0,001, respectively). But lipid parameters were similar between the two groups. While serum fibrinogen and antithrombin III levels were found to be significantly higher in acromegaly group ($p_{\text{fibrinogen}}$: 0,005 and $p_{\text{antithrombin III}}$: 0,001), protein S and protein C activity values were significantly lower in the patient group ($p_{\text{protein S}}$: 0,001, $p_{\text{protein C}}$: 0,001). Also significantly enhanced platelet function (measured by collagen/ADP- and collagen/epinephrine- closure times) was demonstrated in acromegaly ($p_{\text{col-ADP}}$: 0,002, $p_{\text{col-epinephrine}}$: 0,002). The results did not change, when we excluded six patients with type 2 diabetes in the acromegaly group. There was a negative correlation between serum GH levels and protein S (r : -0,25, p :0,04) and protein C (r : -0,26, p :0,04) values. Likewise, there was a negative correlation between IGF-1 levels and protein C values (r : -0,39, p :0,002), protein S values (r : -0,39, p :0,001), collagen/ADP-closure times (r : -0,28, p :0,02) and collagen/epinephrine- closure times (r : -0,26, p :0,04). Also we observed a positive correlation between IGF-1 levels and fibrinogen levels (r : 0,31, p :0,01).

Conclusion: Acromegaly was found to be associated with increased tendency to coagulation and enhanced platelet activity. This hypercoagulable state might increase the risk for cardiovascular and cerebrovascular events in acromegaly study subjects. Also, platelet function analysis was evaluated with collagen/ADP- and collagen-epinephrine- closure times.

References:

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