HEMOSTATIC BIOMARKERS IN SELECTED GROUP OF PATIENTS WITH TYPE 1 DIABETES: ARE THEY ASSOCIATED WITH DIFFERENT DEGREES OF DIABETIC RETINOPATHY

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BACKGROUND

➢ Diabetic retinopathy (DR) is the leading cause of blindness in the world.

➢ Retinopathy and nephropathy can still progress in diabetics despite optimal metabolic control.

➢ This suggests that factors other than hyperglycemia, such as abnormal hemostatic parameters, may play a role in the disease pathogenesis. Based on this hypothesis, several markers of hypercoagulation including fibrinogen, plasma activator inhibitor (PAI), and alpha-2-anti-plasmin have been identified.

➢ The aim of the present study was to determine whether different degrees of DR (proliferative or non-proliferative) were associated with abnormally modulated hemostatic parameters in patients with type 1 diabetes mellitus (DM).

MATERIALS AND METHODS

➢ 52 type 1 diabetic patients and 40 healthy controls were enrolled in the study. Patients were then subdivided into three categories. Group I was defined as those without retinopathy, group II with non-proliferative retinopathy (NPRP), and group III with proliferative retinopathy (PRP).

➢ We have compared these subgroups with each other and the control group (group IV) according to the serum fibrinogen, plasminogen, α2-anti-plasmin, and PAI.

RESULTS

➢ We detected that PAI-1 levels were higher in the diabetic groups than control, but this was not statistically significant whereas serum fibrinogen (p=0.224) and plasminogen (p=0.224) were similar between the diabetic and control groups.

➢ Alpha-2-anti-plasmin in groups I, II, and III was higher compared to the control group (p<0.01, p<0.05, and p<0.001, respectively) and the positive correlation identified between serum α2-anti-plasmin and HbA1c levels (r=0.268, p=0.031).

CONCLUSION:

➢ To our knowledge there are only a small number of studies measuring α2 anti-plasmin levels in type 1 diabetes.

➢ A positive correlation between α2 anti-plasmin with HbA1c suggests that fibrinolytic markers may improve with disease regulation, and better glycemic control.

➢ High α2-anti-plasmin level might be a novel risk factor for development of DR. Confirmation of these data would allow a better understanding of the pathogenesis of DR.