HIGH SENSITIVITY C-REACTIVE PROTEIN IN TYPE 2 DIABETES MELLITUS WITH VASCULAR COMPLICATIONS

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SUMMARY

There has been great interest in the last few years in the pathogenesis of diabetic vascular complications. Diabetic subjects exhibit a high prevalence of accelerated atherosclerosis; the exact etiology of the pathogenesis of this is uncertain but numerous observations support the theory that chronic low- grade inflammation is involved in the progression of atherosclerosis. A feature of inflammatory activity is the increase in circulating plasma concentrations of acute-phase proteins produced by the liver, one of the most sensitive acute-phase proteins is high sensitivity C-reactive protein (hs-CRP).

The present study was conducted on 79 subjects divided into 3 groups: Group I (controls) which included 20 healthy non-diabetic subjects; Group II, which included 20 diabetic subjects without vascular complications, and Group III, which included 39 diabetic subjects with vascular complications.

A detailed history, thorough physical and clinical examination and radiological investigations including ophthalmoscopic examination, ECG, abdominal ultrasound, duplex examination and brain CT scan (only for patients with ischemic stroke) were performed for each subject included in the study.

A fasting blood sample was collected from each subject for determination of F.B.S., HBA_{1c}, total cholesterol, triglycerides, creatinine, urea, uric acid, ALT, AST and hsCRP. After oral glucose meal of 75 g glucose, another blood sample was collected for determination of PP.B.S. Urine samples were collected for detection of microalbuminuria.

Statistical analysis was performed to demonstrate any relation between diabetic vascular complications and those laboratory profiles.

Concerning FBS, PPBS and HBA_{1c}, they were significantly higher in Group III when compared to both Group I and Group II and also between Group II when compared to Group I.

As regard triglycerides, microalbuminuria and hsCRP, they were significantly higher in Group III when compared to both Group I and Group II.

There was a statistically significant negative correlation between hsCRP and microalbuminuria in diabetic patients within Group III. There was also a statistically significant negative correlation between microalbuminuria and microvascular and both micro- and macrovascular complications in diabetics within Group III.

In conclusion, elevated plasma level of hsCRP as inflammatory marker may be an independent predictor of type 2 diabetes. The findings of the present study support the hypothesis that low-grade systemic inflammation is an underlying factor in the pathogenesis of type 2 diabetes. These findings may have important implications for the prevention and treatment of type 2 diabetes.