Role of factor VII in visceral and overall obesity and its implications in CAD (coronary artery disease)

Rubina Karatela Khatri and G S Sainani
Jaslok Hospital and Research Centre, India

Background and Aim: Coagulation Factor VII plays a vital role in initiation of coagulation reaction. An increase of plasma FVIIc levels (coagulation Factor VII activity) may indicate hypercoagulability related to the early phase of tissue factor-induced coagulation. We aimed to examine associations between plasma FVIIc levels and obesity (visceral and overall) among middle-aged CAD and healthy Indian subjects.

Method: 130 middle-aged subjects were studied, of which 65 subjects had CAD and 65 subjects were age- and sex-matched healthy controls. They underwent cardiac investigations (2D Echocardiography, stress test), anthropometric measurements (body-mass-index: BMI, waist circumference: WC), biochemical (fasting plasma levels of lipid parameters, insulin resistance, glucose, leptin etc) and hematological (FVII and fibrinogen) investigations.

Results: We observed significantly raised levels of FVII activity among the viscerally obese CAD compared to non-viscerally obese CAD (p<0.01). Similar pattern was observed among the overall obese and non-overall -obese CAD subjects. We also observed significantly raised (p<0.05) FVIIc among the obese controls compared to non-obese controls. Hypercoagulant FVIIc activity among the CAD subjects was found correlated with WC (r=0.3, p<0.05) and BMI (r=0.2, p<0.05) as well as hyperlipidemia (r=0.3, p<0.05). On multiple regression analysis, among CAD subjects, hypercoagulant FVII activity was found associated significantly with abdominal and visceral obesity, independently of systolic blood pressure, leptin, insulin resistance and glucose(β:0.32, p<0.01), but not dyslipidemia.

Conclusion: We observed that Factor VII hypercoagulant activity plays a significant role in obesity in CAD subjects. Excess risk for CAD associated with obesity may be mediated in part by enhanced potential for acute thrombosis through FVII activation.

Biography
Rubina Karatela Khatri has completed PhD in 2006 from Jaslok Hospital and Research Centre, University of Mumbai. She works as a Research Associate at Cardiothoracic surgery department, Jaslok Hospital and Research Centre in Mumbai. She has published seven research papers in internationally reputed journals.
rubina_k@msn.com