

## β<sub>2</sub>-Microglobulin as a Biomarker in Coronary Artery Disease

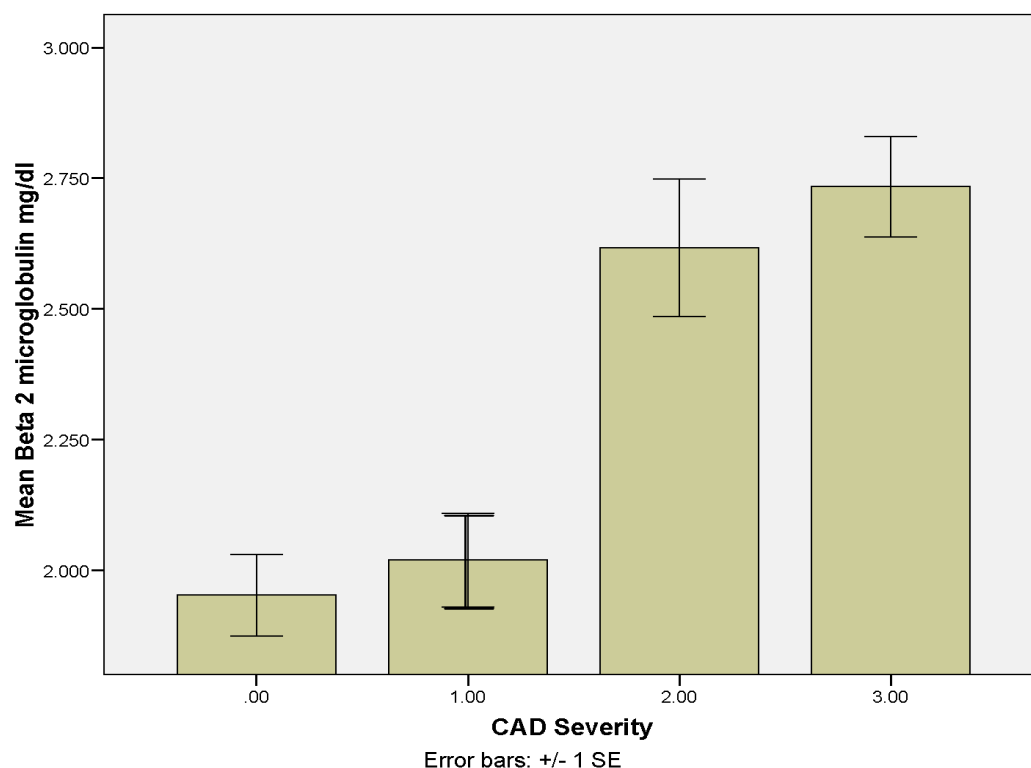
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**Introduction:** The polypeptide β<sub>2</sub>M is a major histocompatibility complex class I molecules on the cell surface of all nucleated cells. Free β<sub>2</sub>M circulates in the blood as a result of shedding from cell surfaces or intracellular release, and it is exclusively eliminated by the kidneys. Increased plasma levels of β<sub>2</sub>M occur renal failure and in a variety of autoimmune, neoplastic, and inflammatory diseases. Recently it was shown that in patients with PVD, circulating β<sub>2</sub>M is elevated and correlates with disease severity, independent of other risk factors. The association between β<sub>2</sub>M serum levels and CAD severity has never been evaluated.

**Methods:** The association between CAD severity and serum β<sub>2</sub>M levels was prospectively tested in 1010 patients undergoing coronary angiography. In order to ascertain the importance of β<sub>2</sub>M, a linear regression analysis was conducted with CAD severity as the dependant variable, and WBC, CRP, fibrinogen, troponin, GFR, serum creatinine, glucose, HbA1c, LDL, HDL, and triglycerides levels as the independent variables.

**Results:** Four variables correlated with CAD severity: β<sub>2</sub>M (r=0.18, p=0.0001), HbA1c (r=0.1, p=0.008), Fibrinogen (r=0.1, p=0.005), and HDL (r=-0.09, p=0.02). This correlation did not change after dividing the cohort into normal and abnormal GFR.



**Conclusion:** Circulating β<sub>2</sub>M is elevated and correlates with the severity of CAD independent of other risk factors. The association of β<sub>2</sub>M with CAD provides a new biomarker for CAD and an additional insight into the role of its inflammation in the pathophysiology of