Can vascular inflammation correlate to angiographic severity of coronary artery disease in young Asian Indians?

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Background: India is estimated to have the largest coronary artery disease (CAD) burden in the world. Indians manifest CAD at a younger age. Inflammation plays a key role in CAD progression. Inflammatory markers serum hsCRP and serum uric acid (UA) may predict CAD risk either by correlation with CAD extent (disease marker) or as an indicator of inflammatory event that leads to plaque rupture (a process marker).

Aim: To assess the role of vascular inflammation and correlate with coronary atherosclerosis in an economically and relevant section of population of young Indians.

Methods: Serum hs-CRP (measured by immune-turbidimetry) level and serum UA (measured colorimetrically by xanthine oxidase method) were measured in young adults (18-45 years) with angiographic proven CAD (60 patients), and compared with those >45 years age (24 patients), and in controls with no CAD (14 patients). Later, their levels were compared with the angiographic stenosis and extent score in young CAD patients.

Results: Mean hsCRP and mean UA were elevated in young CAD patients more than in those of old CAD patients and controls, and this trend was found to be significant by ANOVA (p = 0.028/p = 0.015 respectively). Both hs-CRP and UA levels were found to be in direct proportion to both stenosis (both p < 0.01) and extent score of coronary artery disease in young adults (p < 0.001/p = 0.0022 respectively).

Conclusion: Serum hs-CRP and serum UA levels and inflammation have a positive correlation with the disease burden in the young CAD patient. Premature CAD in young Asian Indians could be partly explained by increased vascular inflammation. Further studies and interventions to identify and reduce risk factors in an economically and socially relevant section of population of a fast developing country like India are urgently needed.