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Elevated levels of neopterin are associated with coronary complex plaques in patients with acute coronary syndrome

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Background: Neopterin, an immune modulator, produced by activated macrophages. Neopterin and many other proteins implicated in disruption, and plaque progression.

Aim: To investigate the association between plasma neopterin levels and the complexity of coronary angiographic lesions.

Patients and methods: During a 12-month period, Forty five patients (Pts) had acute coronary syndrome without ST segment elevation and 15 age matched healthy subjects serve as control group were included in our study. None of the included subjects had ongoing systemic or cardiac inflammatory processes. All underwent a detailed clinical evaluation, routine laboratory investigations, troponin I, electrocardiogram and echocardiography. Quantitative assay of neopterin was measured using enzyme linked immunosorbent assay (ELISA) technique. Angiographic extent and severity of coronary artery disease were assessed and scored according to a Syntax score.

Results: There was a significant difference in neopterin level in Pts with high syntax score (14.66 ± 2.81 nmol/L) and those with Intermediate syntax score (11.12 ± 1.5 nmol/L) when compared with low syntax score Pts (8.91 ± 1.59 nmol/L) P value 0.001. Also this significance was noted when high syntax score Pts were compared with intermediate score (P value 0.03).

Conclusion: Serum neopterin concentration is associated with the presence of angiographically demonstrated complex lesions in patients with acute coronary syndrome. Our results suggest that neopterin level may be useful for risk stratification in patients with coronary artery disease.

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