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Correlation between Serum Vitamin D concentration status and Matrix Metalloproteinase-9 in patients undergoing Elective Percutaneous Coronary Intervention

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Backgrounds: Cardiovascular diseases (CVD) including atherosclerosis and coronary artery diseases (CAD) have become increasingly threatening to people's lives during recent decades. Several studies have shown that matrix metalloproteinase-9 (MMP-9) plays an important role in the process of atherosclerosis and heart remodeling and it has been suggested that higher MMP-9 levels are associated with higher risk of CVD. On the other hand, Vitamin -D deficiency have been recognized as a risk factor for CAD. According to the prevalence of vitamin D deficiency in our country, Iran, we aimed to evaluate the relationship between vitamin D status and the level of MMP-9 in patients undergoing percutaneous coronary intervention (PCI).

Methods: In this prospective cross-sectional study, patients who were candidates for elective coronary intervention were included. Baseline serum MMP-9 and vitamin D levels were measured. Patients were categorized into three groups according to their vitamin D serum level: Vitamin D-severely deficient (≤ 10 ng/ml), vitamin D-moderately deficient (11-20 ng/ml), and vitamin D-insufficient/sufficient (> 21 ng/ml).

Results: Totally, 150 patients were assessed for the serum level of MMP-9 and vitamin-D. The analysis showed that serum MMP-9 levels were higher in patients with lower vitamin-D concentrations. A significant inverse correlation was found between MMP-9 concentration and 25(OH) vitamin D level (P = 0.039).

Discussion: It may be concluded that low vitamin D level may lead to more vulnerable plaques and consequently more cardiovascular adverse effect in post-PCI patients.

Speaker Biography

Mahtabalsadat Mirjalili is currently working as a Junior Clinical Pharmacy Resident in Shiraz University of Medical Sciences, Iran. She has completed Doctor of Pharmacy from Shahid Sadoughi University of Medical Sciences, Iran. Her research works focus on antibiotic therapy and intensive care unit. She has published her research works in several National and International Conferences as well as in several reputed Journals.

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