

عنوان مقاله:

Alteration in expression of matrix metalloproteinase-9 in peripheral blood mononuclear cells could be considered for estimating the severity of coronary artery stenosis

محل انتشار:

مجله دانشگاه علوم پزشکی شهرکرد، دوره 25، شماره 2 (سال: 1402)

تعداد صفحات اصل مقاله: 7

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خلاصه مقاله:

Background and aims: Atherosclerosis is one of the main reasons why people die from cardiovascular disease. The pathogenesis of atherosclerosis may have been aided by the deregulation of cellular and molecular events in peripheral blood mononuclear cells (PBMCs). This study aimed to investigate the alteration of the expression of matrix metalloproteinase-9 (MMP-9) in PBMCs of subjects who underwent angiography. Methods: Following a thorough clinical examination and anthropometric assessments, 90 individuals were divided into two groups: 56 coronary artery disease (CAD) participants (subjects with coronary artery stenosis $\geq 50\%$) and 34 non-CAD participants (subjects with coronary artery stenosis $\leq 30\%$). Then, this study evaluated fasting serum glucose (FSG), total cholesterol (Chol), high-density lipoprotein-cholesterol (HDL-C), low-density lipoprotein-cholesterol (LDL-C), and triglyceride (TG). Next, the severity of coronary artery stenosis was recorded. Additionally, real-time polymerase chain reaction (PCR) was used to assess the gene expression of MMP-9. MMP-9 protein level was also assessed using western blot techniques. The overexpression of MMP-9 and elevated level of FSG were positively associated with coronary artery stenosis. Results: Our results revealed that MMP-9 was upregulated both at the level of transcription and translation. Moreover, the upregulation of MMP-9 had a significant positive correlation with the severity of coronary artery stenosis. Conclusion: Significant correlation between the overexpression of MMP-9 and coronary artery stenosis confirms our hypothesis that the upregulation of MMP-9 in PBMCs has an important role in the pathogenesis of atherosclerosis before monocyte recruitment and its subsequent processes.

کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1914016>

