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## **Article: IS CIRCULATING GLA-RICH PROTEIN LINKED WITH CORONARY CALCIUM AND CARDIOVASCULAR PATHOLOGY IN PATIENTS WITH ATRIAL FIBRILLATION OR HEART FAILURE? A PILOT STUDY**

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In recent years, medical science has redirected its efforts mainly into searching for solutions to problems related to the rapidly increasing incidence of oncological diseases and this last year—predominantly into gaining control over the global pandemic of COVID-19. However, with or without COVID-19, cardiovascular diseases remain an essential and important factor defining the length of human life. Heart pathology is directly linked to the evolution of atherosclerosis. Until now the conception of atherosclerosis has been as a chronic, progressive, relapsing aseptic inflammation of the vascular wall, leading to local and diffuse narrowings. The developing processes in the vascular wall and especially in the left-sided cardiac valvular apparatus are frequently combined with intensive calcium accumulation, which significantly reduces the opportunities for optimal influence in routine practice. Many, mostly preclinical trials have focused on finding the intimate mechanisms connected with the pathological build-up of calcium at abnormal sites.

Enough evidence has been collected showing that in these processes a key role is played by the matrix Gla-rich protein (MGP), part of vitamin K-associated proteins, which take part in the Ca/P exchange at tissue level. From a clinical point of view, especially important is that when vitamin K antagonists are administered, reduced production of vitamin K-associated proteins may follow, which can accelerate the mineralisation process in the tissues due to the fact that MGP is its natural inhibitor.

Great amount of the trials about the role of Gla-rich protein are conducted on experimental animals or ex-vivo specimens and show no connection between its circulating levels and the actual condition of patients with cardiovascular pathology. In this context, the current research is one of the few, linking the actual levels of the circulating Gla-rich protein to the level of the calcium accumulation in the cardiac vessels. In perspective, it is hopeful that this marker may become a part of the individual evaluation of the risk profile for developing cardiovascular disease.

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