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Editorial

Adropin as a Serum Marker in Coronary Artery Disease. To be or not to be?

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Coronary artery disease (CAD) remains as a major health problem for high and middle income countries and a raising problem for low income countries. Acute Coronary Syndrome is the most critical expression of CAD and early diagnosis and treatment is mandatory to improve survival rates. Therefore, accurate markers are needed to enhance diagnostic criteria and identify patients with high cardiovascular risk.

Adropin is secreted protein consisting of 76 amino acids with a molecular weight of 4,999.9D. The word Adropin derived from Latin roots "aduro" (to set fire to) and "pinquis" (fats or oils) is a relativity new protein encodes by Energy homeostasis associated gene *(Enho)* discovered in 2008 by Kumar and his coworkers during an investigation of obese insulin resistant mice as a novel factor linking with metabolic homeostasis [1]. Adropin is expressed in many tissues and organs, such as pancreatic tissue, liver, brain, kidney. And the key of the landmark question...endocardium, myocardium and epicardium!!! An exclamation mark for each layer of the heart.

According to Kumar liver *Enho* expression is regulated by energy status and dietary nutrient content and is altered with obesity. He was particular focused how Adropin attenuates components of the metabolic distress associated with obesity independently on body weight or weight loss and finally stated "...Adropin could provide a promising new lead for developing therapies against the metabolic disorders associated with obesity" [1].

Very soon this "metabolic disorder" was identified as Acute Coronary Syndrome although low levels of Adropin were founded in patients with stable angina pectoris and CAD free healthy people. The Nanchong Group designed and interesting meta-analysis and obtain strong evidence of association between serum Adropin level and CAD. A total of seven articles involve 945 participants and the results indicated that serum Adropin level in CAD group were lower than healthy control group with and considerable Standard Mean Difference (SMD = -2.96, P = 0.0008). In the subgroup analysis, the levels of serum Adropin in Acute Myocardial Infarction group (SMD = −2.96, P < 0.00001), Unstable Angina Pectoris group (SMD = −2.09, P = 0.0001) and Stable Angina Pectoris group (SMD = −1.23, P = 0.007) were also lower than that of healthy control. Although this meta-analysis has some limitations: the quality is relatively general, the sample size is rather small and is based on a summary of past research literature, may suggest that serum Adropin levels could be associated with the pathogenesis of CAD. Furthermore, serum Adropin inversely is associated with angiographic severity of coronary atherosclerosis. Serum Adropin level may be referred to as a novel biomarker for evaluation and follow up in patients with CAD [2].

Several mechanisms have been suggested to explain Adropin effect in CAD patients. Endothelial dysfunction has been introduced as main mechanism. The endothelium plays a crucial role in the maintenance of vascular homeostasis, and endothelial dysfunction contributes to the development and progression of cardiovascular diseases. Adropin is an endogenous bioactive substance that is mainly expressed in the heart, brain, liver and coronary endothelial cells. It is also involve in regulating lipid metabolism, improving insulin resistance, protecting vascular endothelial cells, and anti-inflammatory effects [3].

Adropin can increase the endothelial nitric oxide synthase expression, which has a certain endothelial cell protection potential. Circulating low levels of Adropin are associated with endothelial dysfunction; thus, decreased serum Adropin levels weaken endothelial protection and may cause or accelerate atherosclerosis.

In spite of the growing evidence contributed by the study models in animals and humans in favor of considering Adropin as a safe serum marker to identify patient with CAD, it has not received the approval from those who write the guides or consents. However, contrary to the traditional serum markers it is capable of contributing with profitable information in the sharp phase as chronicle of this illness besides allowing us to identify patient with high cardiovascular risk. To be, or not to be, that is the question. More than 400 years later the drama is still on!

Conflict of Interest

The author states that he has no conflict of interest.

Bibliography

1. Kumar KG., *et al*. "Identification of Adropin as a Secreted Factor Linking Dietary Macronutrient Intake with Energy Homeostasis and Lipid Metabolism". *Cell Metabolism* 8.6 (2008): 468-481.

2. Zheng J., *et al*. "Association between serum adropin level and coronary artery disease: a systemic review and meta-analysis". *Cardiovascular Diagnosis and Therapy* 9.1 (2019): 1-7.

3. Lovren F., *et al*. "Adropin is a novel regulator of endothelial function". *Circulation* 122.11 (2010): S185-S192.

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