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# ENDOTHELINS AND THEIR IMPORTANCE IN PREDICTION OF CARDIOVASCULAR DISEASES

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Endothelins (ET) are biologically active peptides that have a broad spectrum of action. ET is an important regulator of the functioning of the endothelium, which is closely related to the hemostasis system and the muscular wall of blood vessels, causing contraction of the latter and the release of various vasoactive factors from the endothelium. Numerous works have been devoted to studying the role of ETs, their structure and origin. The possible importance of ET-1 in the pathogenesis of cardiovascular diseases was investigated soon after its discovery, and increased levels of circulating ET-1 in the blood plasma began to be described in vascular diseases such as systemic hypertension, pulmonary hypertension and atherosclerosis. These studies, in turn, raised the question of whether plasma levels of ET-1 or ET-1-related molecules could serve as biomarkers for predicting adverse long-term outcomes in diseases in which ET-1 may play a pathogenetic role.

The purpose of this work is to analyze and summarize the current state of knowledge on the potential use of ET-1 and ET-related peptides for predicting cardiovascular risk.

Currently a more detailed comprehension of the role that ET-1 plays in the pathogenesis of vascular diseases and, consequently, in the prediction of cardiovascular morbidity has been required. This is due to the fact of an increased understanding of the complexity of ET-1's actions, which extend far beyond purely vasoreactivity and include effects on myocardial contractility, sodium excretion, inflammation and other physiological functions,

This paper reviews the current state of knowledge about circulating ET-1 levels and future research directions, including the use of plasma ET-1 or related peptide levels to develop personalized treatment regimens and select patients for primary prevention strategies.

It has been proven that ET is very important for the human body. Numerous experiments have revealed that activation of the endothelin system, the marker of which is an increase in the level of ET and its precursor, is observed in many pathologies, including cardiovascular diseases. Currently, it is considered a predictor of the severity and outcome of coronary heart disease, cardiac arrhythmia, pulmonary and systemic hypertension, and specific vascular disorders. In addition, most studies have shown that ET-1 is involved in the development of non-cardiac pathologies, such as postpartum vascular complications, kidney damage (glomerulonephritis), ischemic brain damage, diabetes, etc.

As the analysis shows, ET-1 can be used as a prognostic factor for various cardiovascular diseases, including a predictor of their adverse outcomes. However, the use of ET-1 or related peptides as risk markers has not yet been implemented in clinical practice. Future studies measuring plasma levels of ET-1 or ET-1 precursors will provide an opportunity to clarify the added value of these indicators for clinicians in identifying many pathologies.