Role of extracellular vesicles in cardiovascular pathology.

Alberto Cook Calvete[a], Sandra Sánchez Esteban, María Delgado Marín, Marta Saura

UAH.

a. mcooky_8@hotmail.com

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Abstract

Microvesicles are a group of small extracellular vesicles which have been observed to participate as intercellular modulators in numerous physiological and pathophysiological mechanisms. The microparticles are ubiquitous and they have released by cells into both the blood plasma and the extracellular matrix. In recent years, they have been described as an intercellular signaling mechanism that seems to play a very relevant role in numerous pathologies such as cardiovascular diseases. It has been studied that microvesicles can contain a wide variety of biomolecules, such as proteins or nucleic acids like mRNA or miRNAs. They are so closely related to the onset and development of numerous pathologies that their potential as possible biomarkers is being studied. This review article summarizes the evidence derived from research, related to the genesis and the function of microparticles in the presence of various cardiovascular risk factors and conditions. The current data provide a substrate for several theories of how microparticles influence various cellular pathophisiological mechanisms by transferring biological information. Currently, the first approaches of our laboratory have served to fine-tune the necessary techniques to carry out future studies and analyzes of the microvesicles of our animal and cell model.

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