

Extracellular vesicles as therapeutic tools in cardiovascular diseases.

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R�sum� en anglais	<p>Extracellular vesicles (EVs), including microvesicles (MVs) and exosomes, are small vesicles secreted from a wide variety of cells. Whereas MVs are particles released by the outward budding of the plasma membrane, exosomes are derived from endocytic compartments. Secretion of EVs can be enhanced by specific stimuli, and increased plasma circulating levels of EVs have been correlated with pathophysiological situations. MVs, already present in the blood of healthy individuals, are considerably elevated in several cardiovascular diseases associated with inflammation, suggesting that they can mediate deleterious effects such as endothelial dysfunction or thrombosis. Nonetheless, very recent studies also demonstrate that MVs may act as biological information vectors transferring proteins or genetic material to maintain cell homeostasis, favor cell repair, or even promote angiogenesis. Additionally, exosomes have also been shown to have pro-angiogenic and cardio-protective properties. These beneficial effects, therefore, reveal the potential therapeutical use of EVs in the field of cardiovascular medicine and regenerative therapy. In this review, we will provide an update of cellular processes modulated by EVs of specific interest in the treatment of cardiovascular pathologies. A special focus will be made on the morphogen sonic hedgehog (Shh) associated with EVs (EVsShh+), which have been shown to mediate many pro-angiogenic effects. In addition to offer a potential source of cardiovascular markers, therapeutical potential of EVs reveal exciting opportunities to deliver specific agents by non-immunogenic means to cardiovascular system.</p>
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Liens

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