

Is there a role for exosomes in foetoplacental endothelial dysfunction in gestational diabetes mellitus?

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Abstract

Gestational diabetes mellitus (GDM) is a disease of pregnancy associated with endothelial dysfunction in the foetoplacental vasculature. Foetoplacental endothelial dysfunction is characterized by changes in the L-arginine–adenosine signalling pathway and inflammation. The mechanisms involved in these alterations are suggested to be hyperglycaemia, hyperinsulinemia, and oxidative stress. These conditions increase the release of exosomes, nanovesicles that are generated from diverse cell types, including endothelial cells. Since exosomes can modulate vascular function, they may play an important role in foetoplacental endothelial dysfunction seen in GDM pregnancies. In this review, we summarized current knowledge on the potential role of exosomes in foetoplacental endothelial dysfunction seen in this disease of pregnancy.

Keywords

Exosomes, Gestational diabetes, Foetoplacental vasculature, Endothelial dysfunction