Perivascular Adipose Tissue can be Considered a Risk Factor for Atherosclerosis?

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Introduction

Perivascular adipose tissue (PV AT) is an ectopic deposition of adipose tissue surrounding the vasculature and your influence on the vasculature changes with increasing adiposity. PV AT involves coronary arteries, aorta, mesenteric, and small arteries in the body, and its likely function differs in each of these anatomical regions [1-4].

PVAT secretes a wide variety of adipocytokines and other substances, including hormones, cytokines, chemokines, oxygen radicals, angiotensinogen, leptin, resistin and fatty acids [5]. The rate of secretion of various adipocytokines varies in different places in the vascular tree, adipocytokines as TNF-α, IL-6 and others. Adiponectin can affect insulin sensitivity, inflammatory responses, hemostasis, appetite and atherosclerosis [6-10]. The factors secreted by PVAT that act in the regulation of vascular function are presented in Table 1.

Cytokines/Chemokines | Vasoactive agents | Hormones and Fatty acids
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IL-6 IL-8 | H2S C2 | Adiponectin Visfatin
IL-10 IL-1β | ADRF NO | Leptin Oestrogen
IL-1β MCP-1 | Ang (1–7) Ang II | FFA Androgen
TNFα MIP-1α | ROS H2O2 | Resistin HGF
MIF RANTES | Angiotensinogen | FABP4 Adrenomedullin Glucocorticoids
PAI-1 HB-EGF | Methyl-palmitate | |

Table 1: Product of PVAT involved in the regulation of vascular function.

PVAT is related to the vascular contractility, endothelial dysfunction, neointima formation, arterial stiffness, aeurysm formation, and produce substances that can interfere in the process of atherosclerosis and contribute to the pathogenesis of type 2 diabetes and cardiovascular diseases [11-16].

An understanding of the pathophysiology of PVAT and its potential role in cardiovascular morbidity and mortality can be significant in preventing and treating of atherosclerosis.

References


