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Impact of type 2 diabetes on the plasma levels of vascular endothelial growth factor and its soluble receptors type 1 and type 2 in patients with peripheral arterial disease

Key words: Angiogenesis, Vascular endothelial growth factor, Soluble receptors, Peripheral arterial disease, Type 2 diabetes mellitus

Research Summary

Type 2 diabetes coexistent with lower extremity artery disease – peripheral arterial disease (PAD) can be observed in numerous patients. The mechanism compensating for ischemia and contributing to healing is angiogenesis – the process of forming new blood vessels. The purpose of this study was to assess the likely impact of type 2 diabetes on the values of proangiogenic factor (vascular endothelial growth factor – VEGF-A) and angiogenesis inhibitors (sVEGFR-1, sVEGFR-2) in patients with PAD.

Conclusions

- The coexistence of type 2 diabetes and PAD is demonstrated by a tendency to lower plasma levels of proangiogenic factor (VEGF-A) and higher levels of angiogenesis inhibitors (sVEGFR-1 and sVEGFR-2) at the same time.

- Regardless of the coexistence of type 2 diabetes, hypoxia appears to be a crucial factor stimulating the processes of angiogenesis in PAD patients comparable with healthy individuals, whereas hyperglycemia may have a negative (inhibitive) impact on angiogenesis in lower limbs.