Endothelial functions changes as predictors of endovascular treatment outcomes?

Martyna Schönborn, Jakub Krężel, Paweł Kaczmarczyk, Marzena Frołow, Rafał Januszek, Mikołaj Maga, Paweł Maga

Department of Angiology, Jagiellonian University Medical College
2nd Department of Cardiology and Cardiovascular Interventions, University Hospital in Krakow
Department of Rehabilitation in Internal Medicine, Jagiellonian University Medical College

Background

It is commonly known that endothelial dysfunctions lead to the formation of atherosclerotic plaque, which causes peripheral arterial occlusive disease (PAOD). However, the real-life impact of the changes in endothelial parameters on the clinical outcomes remains unexamined.

The aim of study was to assess such dependence in PAOD patients after percutaneous transluminal angioplasty (PTA).

Materials and methods

Mean age 66.3 ± 7.2
57 males, 15 females

72 patients with PAOD

30 critical limb ischemia
42 non-critical limb ischemia

24 h before PTA

ABI & TBI
FMD
RHI
IMT
aPWA

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1) Significant improvement of walking distance after PTA.
2) Transient improvement of ABI and FMD.
3) No significant change in aPWA indices and RHI.
4) The mean ABI, TBI, RHI did not correlate with each other at baseline.
5) Patients with CLI, hypercholesterolemia, lower diastolic blood pressure, higher SEVR, greater number of pack-years and lower TBI at baseline presented significantly poorer clinical outcomes in terms of end points events.

Conclusions

Endothelial function assessed as FMD does improve as the result of endovascular treatment which is accompanied by clinical condition improvement. On the other hand, preoperative endothelial parameters cannot be taken into consideration as significant predictors of clinical outcomes during the one-year follow-up. This may be caused by multiple stronger co-factors and comorbidities which occur in patients with PAOD.