Prognostic role of polyvascular involvement in patients with symptomatic peripheral artery disease

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Background: Patients with peripheral artery disease (PAD) are at very high risk of future cardiovascular events. However, clinical experience suggests that PAD has a wide range of prognosis due to a different atherosclerotic extent with further vascular beds affected, i.e. coronary artery disease (CAD) and/ or cerebrovascular disease (CeVD).

Purpose: We hypothesized that patients with a polyvascular extent (+ CAD and/ or CeVD) of PAD have poorer prognosis compared to those with PAD alone.

Methods: Single center longitudinal observational study with 1380 symptomatic PAD patients over a period from 2009 to 2019 (mean observational time: 60 ± 32 months). We related the atherosclerotic extent (PAD, +1 vascular region (+/- CAD or CeVD) (+1V), +2 vascular regions (+CAD and CeVD) (+2V) to all-cause and cardiovascular mortality as well as to cardiovascular event rate.

Results: Baseline demographics showed that polyvascular patients (+1V and +2V) were older, suffered more often from diabetes, hypertension, dys-

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lipidemia and had more severe impairment of their kidney function (all p<0.0001) compared to PAD patients without further vascular beds affected. Polyvascular patients received more often a complete guideline conform treatment with anti-platelet therapy, ACE Inhibitors, smoking cessation and statin medication. This was mainly due to the low rate of statin use in PAD aonly patients compared to polyvascular patients (+1V and +2V; p<0.001). Despite of the adequate treatment, all-cause and cardio-vascular mortality rate was higher in polyvascular patients (+1V: 22%; +2V: 35%) than in PAD only patients (13%; p<0.0001), as well as the rate of cardiovascular events (p<0.05).

Conclusion: PAD patients with a polyvascular involvement receive an adequate guideline conform treatment. Nevertheless, mortality is higher in this population. Conversely, our data suggest, that an intensified treatment for patients with PAD alone might help to avoid progression into a polyvascular disease and in consequence an increased mortality in this population.



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