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The perils of polyvascular disease with concomitant type 2 diabetes in a real-world cohort of patients with acute coronary syndrome

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Background: Despite substantial improvement in type 2 diabetes (DM2) care, the burden of recurrent cardiovascular (CV) events remains high. Polyvascular disease (PVD), has recently emerged as a potential marker of heightened residual ischemic risk in DM2 patients, that are likely to derive a greater absolute risk reduction from more intense, individualized therapy.

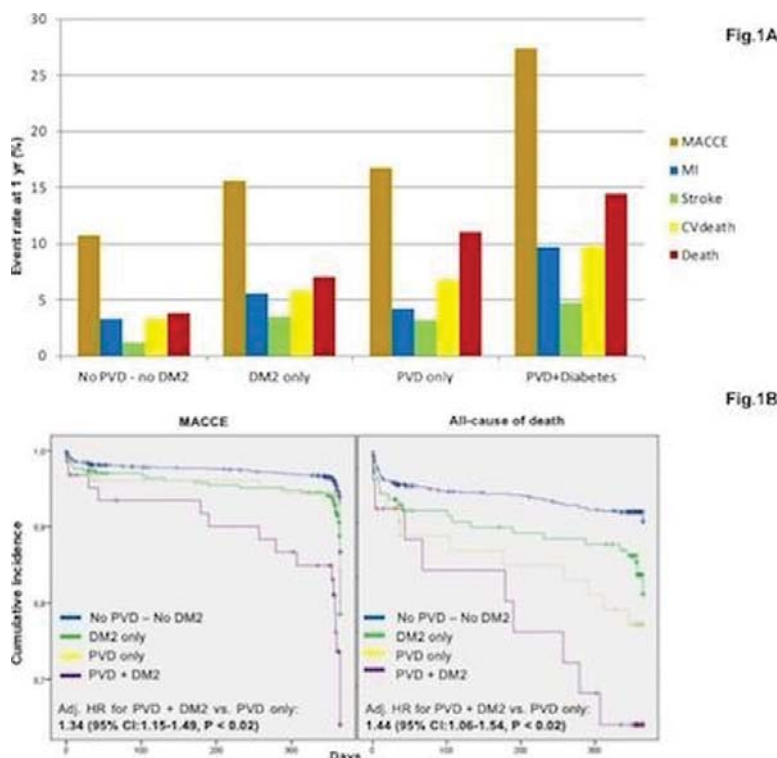
Purpose: We sought to assess the relationship between DM2, PVD and CV outcomes among 2,168 all-comers patients admitted to four Swiss University Hospital for acute coronary syndrome (ACS) and enrolled in the prospective multicenter SPUM registry (NCT 01000701).

Methods: PVD was defined as concomitant peripheral artery disease, stroke or transient ischemic attack, or both. The composite primary endpoint was major adverse cardiac and cerebrovascular events (MACCE: Stroke, myocardial infarction, CV death). Adjusted Cox proportional hazards regression models were implemented to determine the risk associated with PVD disease in DM2 and outcomes, and intention-to-treat analysis was performed.

Results: Out of 2,168 ACS patients, 396 patients (18.3%) had DM2; of these 62 (15%) had PVD. Despite compared with the general ACS popula-

tion, those with PVD + DM2 were more likely to have a complex history of CV disease, such as previous MI (27.4% vs 14.7%, p=0.021), prior percutaneous (37.1% vs 17%, p<0.001) or surgical (24.2% vs 5.1%, p<0.001) coronary revascularization, one third was not on statin therapy. At 1 year, patients with PVD + DM2 had a higher rate of MACCE compared to those presenting with PVD or DM2 alone. Rates of the single components of the primary endpoint and all-cause of death were all significantly higher in patients with PVD + DM2 vs. PVD or DM2 alone (Fig. 1A, all p<0.001). This enhanced risk persisted after adjustment for significant baseline differences, with a 34% (Adj. HR 1.34, 95% CI 1.15–1.49, p=0.02) increase in MACCE and a 44% increment of all cause of death (Adj. HR 1.44, 95% CI 1.06–1.54, p=0.02, Fig. 1B).

Conclusions: Among a real-world cohort of ACS-patients, the coexistence of PVD and DM2 highlights the highest CV risk phenotype, being associated with significant increased rates of MACCE and all-cause of death. These observations might help clinicians to furtherly stratify the very high risk population and to identify patients who may derive the greatest benefit from more intense secondary prevention therapies.



Outcomes by PVD and DM2 status.