Prevention

A systematic review and meta-analysis of the role of statins and their intensity in peripheral artery disease

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Background: Peripheral artery disease (PAD) affects more than eight million Americans. However, several studies have shown that those patients are often undertreated, and that statin utilization is suboptimal. American Heart Association guidelines highlight statins as the first-line lipid-lowering therapy to treat patients with PAD. Our objective with this meta-analysis was to further explore the impact of statins on PAD outcomes and examine whether the actual statin (high vs low intensity) dose impacts outcomes.

Methods: We performed a systematic review and meta-analysis according to the PRISMA guidelines. Any study that presented a comparison of statins vs no statins for PAD patients or compared high vs low intensity statins and provided outcomes with hazard ratio was considered as potentially eligible. The Medline (PubMed) database was searched up to August 30, 2020. A random effects meta-analysis was performed.

Results: In total, 38 studies and 275,670 patients were included in this meta-analysis. In total, 136,025 (49.34%) were on statins vs 139,645 (50.66%) who were not on statins. Statins had an association with a reduction in all cause-mortality by 42% (HR:0.58, 95% CI: 0.49-0.67, I2= 96.26%) and cardiovascular death by 43% (HR:0.57, 95% CI: 0.40-0.74, I2= 80.39%). Statins use was associated with an increase in amputation-free survival by 56% (HR:0.44, 95% CI: 0.30-0.58, I2 = 15%). The risk of amputation and loss of patency was reduced by 35% (HR:0.65, 95% CI:0.41-0.89, I2 = 86.91%), 46% (HR:0.54, 95% CI: 0.34-0.74, I2 = 0%), respectively. Statins use was also associated with a reduction in the risk of major adverse cardiovascular events (MACE) by 35% (HR:0.65, 95% CI: 0.51-0.80, I2= 93.22%) and the incidence of myocardial infarction (MI) by 41% (HR:0.59, 95% CI: 0.33-0.86, I2 = 76.78%). Among patients treated with statins, high-intensity treatment group was associated with a reduction in all cause-mortality by 36% (HR:0.64, 95% CI: 0.54-0.74, I2 = 96.49%) compared to patients treated with low intensity statins.

Conclusion: Statin treatment among patients with PAD was associated with a statistically significant reduction in all-cause mortality, cardiovascular mortality, MI, MACE, risk for amputation or loss of patency. Statins were also associated with a higher amputation free survival.