



Statin use in patients undergoing carotid artery endarterectomy: still much to be uncovered

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With great interest, we read the article by Ironside N et al. entitled “Systematic review and meta-analysis of perioperative and long-term outcomes in patients receiving statin therapy before carotid endarterectomy” published in the September 2018 issue of *Acta Neurochirurgica* [1]. The authors performed a meta-analysis to investigate the effect of pre-operative statins on perioperative outcomes in patients undergoing carotid endarterectomy (CEA) for internal carotid artery stenosis. The study is of profound academic importance, and there are some points we would like to address.

Regarding the outcome of perioperative stroke events among statin-users and statin-free patients that underwent CEA, the heterogeneity according to the *Cochrane Handbook for Systematic Reviews of Interventions* [2] is $I^2 = 53%$ ($P = 0.06$), which means the heterogeneity of the pooled data is considerable and the results are possibly not robust and reliable. Therefore, to get a reliable result,

following the guidance of the guideline [2], we performed sensitivity analysis with REVMAN software (version 5.3 for Windows. Copenhagen: The Nordic Cochrane Centre, the Cochrane Collaboration). After excluding one study by McGirt et al. [3], the heterogeneity significantly decreased ($I^2 = 0%$, $P = 0.75$), and the P value for the overall effect is 0.08 (as shown in Fig. 1). This, however, indicates that compared to the statin-free patients, statin did not significantly reduce the occurrence of perioperative stroke in the statin-users. This is different from the conclusion the authors drew regarding this point.

We appreciate the authors' contribution in providing a meta-analysis to investigate the effect of pre-operative statins on perioperative outcomes in patients undergoing CEA for internal carotid artery stenosis. Based on the current evidence, however, the use of statin in patients undergoing CEA did not significantly reduce perioperative stroke events. Future randomized controlled trials are warranted to further address this issue.

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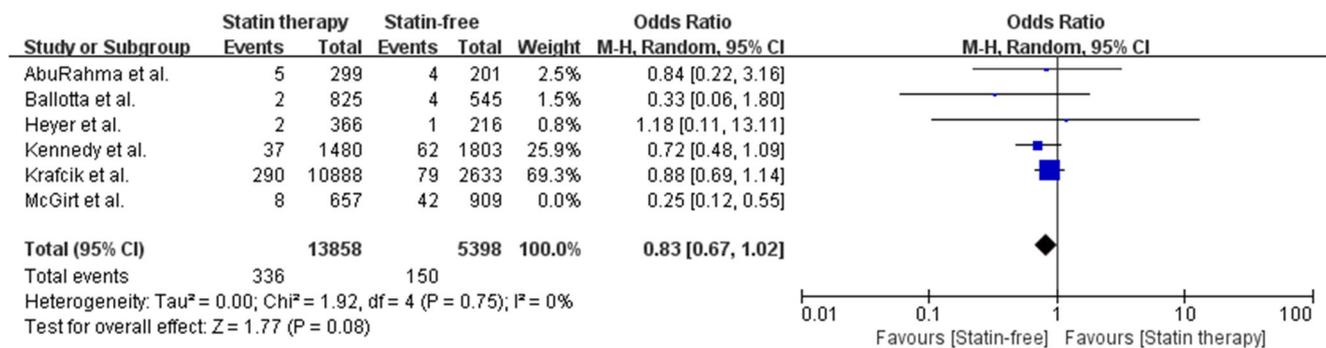


Fig. 1 The outcome of perioperative stroke events among statin-users and statin-free patients that underwent CEA after sensitivity analysis

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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