



Invited Commentary

Commentary on 'Effects of Statin Therapy on Abdominal Aortic Aneurysm Growth: A Meta-Analysis and Meta-Regression of Observational Comparative Studies'

M. Vega de Céniga*

Department of Angiology and Vascular Surgery, Hospital de Galdakao-Usansolo, Barrio Labeaga s/n, 48960 Galdakao, Bizkaia, Spain

This is the third meta-analysis aiming to assess the impact of statins on abdominal aortic aneurysm (AAA) growth. A previous meta-analysis by the same authors, published in 2010, which included 697 patients with small AAA from five clinical controlled, non-randomised studies, obtained similar results.¹ Twine and Williams updated this meta-analysis in 2011, adding two more observational studies, for a total of over 800 patients, and failed to show a significant reduction in AAA growth rates in statin users.² This paper is the latest update and includes the largest number of studies (11) and patients (more than 4600) and the greatest statistical power. The fact that six studies published in 2010–2012 have been included shows how timely the topic is and how interested clinicians are. Could this meta-analysis finally change current guidelines? It might, but the evidence is still not conclusive, as all the included studies are observational; thus, it is impossible to completely rule out potential confounding factors, and only two studies include more than 100 patients in each arm.

In contrast to Mosorin, who suggested that the beneficial effect of statin therapy might be more significant in patients with very small AAA, during the initial stage of aneurysmal degeneration,³ Takagi et al. suggest that statins preferably reduce growth of larger AAA. If so, they would benefit the patients doubly, not only by stabilising the AAA but also by reducing perioperative cardiovascular events if an elective repair is eventually indicated. Still, the inhibition of AAA expansion in smaller AAA could be the most cost-effective if it eventually proved to reduce the number

of both elective and urgent procedures as well as cardiovascular events.

The trend towards a greater effect of statins on small AAA in women is very interesting. Considering the fact that women develop AAA at an older age and that rupture risk is greater than in men for similar-sized AAA, the benefit of any given drug would be particularly useful in this population.

Takagi's meta-analysis is very welcome and its clinical application is indubitable. Still, many questions remain: Do all the different statins (simvastatin, pravastatin, atorvastatin, etc.) exert this inhibitory effect on AAA growth? What is the minimum effective dosage? Are we missing any confounders? Could the association of statin + aspirin increase the effect? And so on. We all agree that an orthodox randomised trial would be unethical in the light of current knowledge but some sort of large-scale, multicentre, well-designed study is called for to firmly establish statins as a first-line medical treatment for AAA.

References

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- 3 Mosorin M, Niemelä E, Heikkinen J, Lahtinen J, Tiozzo V, Satta J, et al. The use of statins and fate of small abdominal aortic aneurysms. *Interact Cardiovasc Thorac Surg* 2008;**7**:578–81.

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* Tel.: +34 94 4314062; fax: +34 94 4007006.

E-mail addresses: melina.vegadeceniga@osakidetza.net, melinavega@hotmail.com.