Are statins more effective in male patients?

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Most large statin trials have predominantly enrolled male individuals. Although women have been included at different proportions, there have been conflicting results on the benefits obtained in women with cardiovascular disease compared with men in the prevention of secondary cardiovascular disease [1–6]. A recent guideline (2011) from the American Heart Association (AHA) [7] recommended statin therapy to achieve the same low-density lipoprotein (LDL) goals in women as in men. However, determining if a differential statin benefit exists for men and women was not the primary focus of the AHA guideline.

In June 2012, Gutierrez et al. [8] from the Department of Neurology, Neurological Institute, Columbia University, New York, published a study in the Archives of Internal Medicine entitled *Statin therapy in the prevention of recurrent cardiovascular events: A sex-based meta-analysis statin therapy to prevent recurrent cardiovascular events*. To that purpose, the authors included randomised, double-blinded, placebo-controlled trials evaluating statins for secondary prevention of cardiovascular events. The investigators looked at data from 11 secondary prevention, double-blinded, placebo-controlled trials, which included 43,193 patients consisting of 11,229 women and 31,962 men. In both sexes a similar, significant overall cardiovascular benefit from the lipid-lowering drugs was observed. Statins were about as effective for preventing heart attacks in male and female patients who have previously experienced a heart attack, although the drugs may not benefit women as much when it comes to preventing other problems. For women, although statins reduced the risk

of a second heart attack, they did not appear to reduce the risk of a second stroke or death from any cause. Overall, it was concluded by the authors that statin therapy is an effective intervention in the secondary prevention of cardiovascular events in both sexes, but there is no benefit on stroke and all-cause mortality in women. To summarise, Gutierrez et al. [8] reported similar findings for coronary events in men and women, but the stroke and all-cause mortality findings cause them to doubt the efficacy of statins for these outcomes.

In an accompanying editorial in the Archives of Internal Medicine [9], Fiona Taylor and Shah Ebrahim, from the London School of Hygiene and Tropical Medicine, contradict these findings. They point out that earlier reviews have shown at-risk women to benefit as much as men from statins. Taylor and Ebrahim refer to a recent meta-analysis using more inclusive criteria which reports similar benefits in women and men for stroke outcomes [10]. In addition they clearly state that the biggest relevant trial, the Heart Protection Study [11], contributes substantially more deaths than all the trials pooled by Gutierrez and colleagues [8]. The editorialists further remark that the study by Gutierrez et al. [8] in fact shows that the effect on stroke and all-cause mortality in women is consistent with the effect in men. Finally, Taylor and Ebrahim contend that the researchers failed to include relevant studies that would have shown a clear survival benefit associated with statin use in women with heart disease.

To date, the current available evidence at least suggests that statins work just as well in women as in men, both for preventing heart attacks and strokes.

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