Stroke severity and the combination of antiplatelets, ACE inhibitors, and statins

Kumar et al. examined data on 210 patients to determine whether pre-stroke combination therapy with antiplatelets, statins, and ACE inhibitors has additive protective effects. Triple therapy reduced ischemic stroke severity and the volume of penumbral tissue-at-risk, compared to dual therapy, antiplatelets alone, or no pre-stroke therapy.

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Are statins and ACE inhibitors useful in acute stroke?

Commentary by Tanya N. Turan, MD, and Marc I. Chimowitz, MB, ChB

Studies have shown that monotherapy with antiplatelet agents, ACE inhibitors, or statins lowers the risk of myocardial infarction (MI) or stroke. More recently, there has been interest in combining these therapies for both primary and secondary prevention of MI and stroke. Preliminary data suggest that combination therapy with antiplatelet agents, ACE inhibitors, and statins lowers 1-year mortality after MI¹ but rigorous studies have not been performed to evaluate the role of combination therapy for secondary prevention after stroke.

Other properties of statins and ACE inhibitors that are unrelated to their antihypertensive and lipid lowering effects have emerged as an area of increasing research interest in cerebrovascular disease. These pleiotropic properties include stabilizing atherosclerotic plaques, enhancing endothelial function, decreasing

oxidative stress and inflammation, inhibiting thrombosis, and possibly exerting neuroprotective effects.^{2,3} The retrospective study by Kumar et al. showed that pretreatment with a combination of an antiplatelet agent, ACE inhibitor, and statin was associated with improved functional outcome after acute ischemic stroke. One possible explanation for this finding is that the primary prevention effect of combination therapy could have resulted in fewer disabling strokes due to atherosclerotic large artery disease. Arguing against a solely primary prevention role of combination therapy is the fact that there was no difference in the frequency of various stroke subtypes between the treatment groups. Providing further support for a pleiotropic effect of combination therapy in this study is the novel finding of a significantly smaller mean perfusion-diffusion mismatch lesion vol-

ume in patients treated with combination therapy.

This important study adds to the growing evidence that statins and ACE inhibitors may be useful as neuroprotective agents in the setting of acute ischemic stroke. However, these findings need to be validated in adequately powered prospective randomized trials before statins and ACE inhibitors can be recommended as part of our armamentarium for treating acute ischemic stroke.

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