Potency of Office Blood Pressure From Hydrochlorothiazide and Chlorthalidone Fails to Explain Cardiovascular Events

To the Editor:

Peterzan et al.1 provide a meta-analysis that examines the dose-response relationships on blood pressure for thiazide-like diuretics and find that chlorthalidone is ~3 times more potent than hydrochlorothiazide (HCTZ) in reducing office systolic blood pressure. Their primary conclusion is that, “These differences in potency allied to the differences in pharmacokinetics are likely to account to a large extent for the reported differences in effectiveness in some studies comparing hydrochlorothiazide with chlorthalidone or other antihypertensive classes.” Our network meta-analysis in the same issue of Hypertension shows that, when ignoring differences in antihypertensive potency, the latter drug reduces cardiovascular events by 21% (95% CI: 12% to 28%; P<0.0001) compared with the former.2

However, at odds with the primary conclusion of Peterzan et al.,1 we found that, even when the average reduction in office systolic blood pressure is identical in the HCTZ and chlorthalidone arms, the latter reduces cardiovascular events by 18% more than the former (95% CI: 3% to 30%; P=0.024).2 This suggests that the inferiority of HCTZ cannot be explained “to a large extent” by its lesser potency on office systolic blood pressure reduction. Other possible explanations for the inferiority of HCTZ include the pleomorphic effects of alternative medications,3,4 differences in the metabolic profiles of the 2 drugs,5 or the short duration of action of HCTZ.6

Disclosures

None.

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