Alcohol and blood pressure

The systematic review and meta-analysis by Michael Roerecke and colleagues[1] extends our knowledge of the association between alcohol and blood pressure by showing a dose-dependent association between baseline alcohol intake and the blood pressure-lowering effect of a subsequent reduction in alcohol intake, with an apparent threshold at two standard drinks—ie, 24 g pure alcohol per day. In other words, although no significant effect of lowering alcohol consumption was recorded in individuals with a daily intake of two or fewer drinks, effect sizes were greatest in those who had the highest intake beyond two drinks per day, irrespective of baseline cardiovascular risk. For example, in people who drank six or more drinks per day, a reduction in alcohol intake of about 50% was associated with mean reductions in systolic and diastolic blood pressure of 5·50 mm Hg and 3·97 mm Hg, respectively, similar to the benefit of other lifestyle changes—eg, increased physical activity and weight loss.[2]

Three closely linked key questions require further clarification: the mechanisms for the observed association; strategies for ensuring a sustained reduction in alcohol consumption and subsequently in blood pressure as median trial duration was limited to 4 weeks; and the prognostic implications of blood pressure-lowering due to reduced alcohol consumption. In this regard, an inherent weakness of the study was the paucity of information about potentially related behavioural and lifestyle changes, including treatment compliance, stress coping, physical activity, diet, and weight.[3] This is especially important because individuals capable of reducing their alcohol intake from 6–10 to 3–5 drinks per day might represent a highly motivated group, who are willing to adopt additional healthy lifestyle changes. Furthermore, this mechanistic uncertainty obscures prognostication with respect to cardiovascular outcome. However, because several components of lifestyle modification have proven advantageous without adverse effects,[4,5] it is likely that a sustained reduction in alcohol consumption in people drinking more than two drinks per day will be accompanied by a reduction in both blood pressure and subsequent cardiovascular events.

Recent findings have brought into question the previous idea of a protective benefit of low-moderate alcohol intake (ie, 1–2 drinks per day).[6,7] Whereas consumption of more than two drinks per day is associated with adverse outcomes, it remains unclear whether one to two drinks per day have protective, neutral, or harmful effects. Therefore, contemporary guidelines for both hypertension[2] and cardiovascular disease prevention[8] recommend moderation of alcohol consumption, corresponding to approximate daily intakes of less than 20 g in men and less than 10 g in women. Although the results presented agree with the recommendations for men, data for women were scarce and should be interpreted cautiously. For this reason, it seems reasonable to continue with the current sex-specific recommendations until further evidence is available.

Roerecke and colleagues should be commended for their important study, which shows that a reduction in alcohol consumption in people with a baseline intake of more than two drinks per day is associated with a significant blood pressure reduction that increases with higher baseline alcohol intake. This finding is of great public health interest because both alcohol intake and raised blood pressure are important risk factors for the global burden of non-communicable diseases[3] and, therefore, are targets for the WHO global action plan for the prevention and control of non-communicable diseases[9] and the collaborative HEARTS[10] initiative addressing healthy lifestyle, evidence-based protocols, access to essential medicines and technologies, risk-based management, team-based care and training, systems for monitoring and implementation module. Soon, HEARTS might help to answer the unanswered mechanistic questions through a combination of intervention and monitoring.

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