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Population appropriate blood pressure lowering for prevention of cardiovascular diseases

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Dena Ettehad and colleagues[1] show that the lowering of blood pressure significantly reduces vascular risk across various baseline blood pressures and comorbidities. However, this result will only be applicable to populations in whom the trials were done because the mechanisms of hypertension—and hence the responses—could be dissimilar in different cardiovascular diseases in diverse populations. For example, the prevalence of hypertension and its association with cardiovascular disease is not increased in south Asian populations when compared with European populations. In the INTERHEART study, 29·6% of cases of acute myocardial infarction from south Asia had hypertension, compared with 40·5% of cases from the other countries 2. 20·2% of cases from south Asia had a history of diabetes, compared with 18·2% of cases from the other countries. Because blood tests were not done, the glucose statuses of any cases with hypertension and without a history of diabetes was not known.3 Another UK study found that the increased risk of myocardial infarction in south Asians with hypertension was due to higher diabetes prevalence than in other populations.4 The combination of hyperglycemia and hypertension appears particularly detrimental for south Asians for stroke too.5 Moreover, the prevalence of ankle-brachial index less than 0·9 is lower in south Asians than in Europeans.6 Two particular challenges need to be faced. First, research is required on mechanisms of blood pressure increases in individuals with or without insulin resistance in different cardiovascular diseases, and on differential changes in these blood pressures in different vascular beds (ie, a greater increase in ankle blood pressure than in brachial blood pressure) in different populations. Second, insulin-resistant south Asian or hypertensive Afro-Caribbean representative models in mice need to be created to aid the study of these mechanisms. These two research programmes will help hypertension management be population appropriate.

I declare no competing interests.

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