Abstract

This article aims to compare the importance of systolic blood pressure (SBP), diastolic blood pressure (DBP), mean arterial pressure (MAP), and pulse pressure (PP) as risk factors for stroke and ischemic heart disease and to assess whether the patterns are consistent by age and gender. Cox proportional-hazards regression, adjusted for cholesterol and smoking, was used to assess the associations of the 4 BP indices with stroke and ischemic heart disease by age and gender. The relative importance of individual indices was assessed with a hazard ratios for a 1-SD change in BP and by likelihood-ratio chi² tests. The influence of >1 BP index in the Cox model was also estimated. The analyses demonstrated similar associations of SBP, DBP, and MAP with both fatal stroke and ischemic heart diseases, which were stronger than those of PP. Both SBP and MAP tended to be more important in the regression model than DBP or PP. In Cox models including DBP, addition of SBP improved the goodness of fit at all ages and for both genders. However, in Cox models including SBP, addition of DBP typically resulted in little incremental benefit over and above that of SBP alone. These data suggest that if time or resources are highly constrained, such as in much-needed epidemiologic surveys in developing countries, very little is lost from only measuring SBP.