

TEACHING COURSE – STROKE PREVENTION

BLOOD PRESSURE AND STROKE

Petar Kes

Department of Dialysis, University Hospital Centre Zagreb, Zagreb, Croatia

Cohort studies have demonstrated that the strong association between (blood pressure (BP) and stroke appears to be continuous down to levels of at least 115/75 mm Hg. The strength of the associations was similar for men and women and for fatal and nonfatal events but attenuated with age. Despite a potentially weaker relative association for older age groups, the higher overall stroke rate in this group means that in absolute terms, the benefits of a given reduction in BP are likely to be greater. The analyses have not consistently demonstrated a difference in the association between intracerebral hemorrhage and ischemic stroke. Regional comparisons are very limited because most of the cohort studies have been conducted primarily in the “developed” parts of the world. The broad consistency of the results across overviews was more evident than any differences. The proportional associations are likely to be reasonably generalizable to the many populations in the world for which there are limited data on stroke epidemiology.

Data from trials provide more reliable data on the likely short-term benefits of BP lowering on stroke. Randomized controlled trials have been conducted predominantly in populations of Western countries, and data for developing countries (where approximately three quarters of stroke deaths occur worldwide) are very scarce. The results of the updated meta-analysis

of trials are consistent with those of several previous meta-analyses and confirmed the risk reduction of stroke with BP lowering compared with placebo (regardless of the agent used) as being between 30% and 40%. Limited data were available on treatment effects by age, and the treatment effects by age within individual trials and between trials have not been consistent. Few data are available on stroke subtypes, limiting the scope for meta-analyses. The limited data from the Perindopril Protection Against Recurrent Stroke Study and the Heart Outcomes Prevention Evaluation study are insufficient to draw definitive conclusions regarding the impact of BP lowering on stroke subtypes. Analyses have indicated that a more intensive BP-lowering regimen with a given agent may produce a greater risk reduction than a less intensive regimen and that overall the trials demonstrate a dose-response relationship between magnitude of BP reduction and reduction in risk of stroke. When different classes of BP-lowering drugs were directly compared, there was very little difference in either the magnitude of the BP reduction achieved or the impact of different agents on stroke. The similarities between the effects of different drug classes are more striking than the differences, but there is uncertainty over the extent to which any differences are explained by differences in BP reduction and chance.