

Prevalence, treatment and control of hypertension in middle-aged Mexicans

Louisa Gnatuic^{1*}, Jesus Alegre-Diaz^{2*}, Will Herrington¹, Malaquias Lopez Cervantes², Richard Peto¹, Rory Collins¹, Roberto Tapia-Conyer², Jonathan Emberson^{1*} and Pablo Kuri-Morales^{2*} (* equal inputs)

¹Clinical Trial Service Unit and Epidemiological Studies Unit, University of Oxford, Oxford, UK

²School of Medicine, National Autonomous University of Mexico, Mexico DF, Mexico

Background: Hypertension is common in Mexican adults, but the extent of medication among hypertensives, and of blood pressure control among those receiving medication, is unknown. The Mexico City Prospective Study is a blood-based cohort of 150,000 adults aged ≥ 35 years when recruited in 1998-2004.

Methods: The baseline questionnaire, completed by 52,644 men and 107,111 women, asked about previous doctor diagnoses of hypertension and current medication. Blood pressure was measured 3 times in the seated position. "Hypertension" was defined as a recall of a doctor diagnosis, blood pressure lowering drug use, average SBP ≥ 140 mmHg or average DBP ≥ 90 mmHg. Logistic regression assessed the odds of receiving treatment for hypertension and the odds of such treatment successfully controlling blood pressure (ie, SBP < 140 mmHg and DBP < 90 mmHg).

Results: Mean blood pressure increased with age in both sexes, from 120/80 mmHg at ages 35-44 to 138/85 at ages 75-84. Consequently, the prevalence of "hypertension" increased strongly with age from 25% at ages 35-44 to 61% at ages 75-84 in males and, even more sharply, from 20% at ages 35-44 to 72% at ages 75-84 in females (**Figure**). Among those with hypertension, 59% of males and 38% of females had no previous diagnosis of it and were not taking any BP-lowering drug while 30% of males and 44% of females were taking one or more blood pressure lowering drug. Among those with hypertension, the prevalence of blood pressure lowering drug use increased sharply with age, with a lower prevalence at every age for males compared with females (**Figure**). Among those who were taking a blood pressure lowering drug, blood pressure was "controlled" for 39% of males and 37% of females, which did not vary markedly by age in males, but was somewhat higher for younger females than older females (**Figure**). In addition to older age and female sex, hypertension was more likely to be treated (and treated hypertension more likely to be controlled) among those with a higher level of education. Treatment of a hypertensive participant with a blood pressure lowering drug was also more likely for those having insurance provided by the largest health care provider (IMSS) than for those who had other insurance or no insurance.

Conclusions: Elevated blood pressure is common in middle-aged Mexican adults and is often untreated. Future prospective analyses of this cohort will investigate the full effects of blood pressure on cause-specific mortality.

Figure: Age and sex-specific prevalences of hypertension, of treatment among those with hypertension, and of blood pressure control among those treated, in the Mexico City Prospective Study

