

Increased prevalence of hypertension and long-term arsenic exposure

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摘要

Abstract

To examine the association between long-term exposure to inorganic arsenic and the prevalence of hypertension, we studied a total of 382 men and 516 women residing in villages where arseniasis was hyperendemic. Hypertension was defined as a systolic blood pressure of 160 mm Hg or greater, a diastolic blood pressure of 95 mm Hg or greater, or a history of hypertension treated regularly with antihypertensive drugs. The long-term arsenic exposure was calculated from the history of artesian well water consumption obtained through standardized interviews based on a structured questionnaire and the measured arsenic concentration in well water. Residents in villages where long-term arseniasis was hyperendemic had a 1.5-fold increase in age- and sex-adjusted prevalence of hypertension compared with residents in nonendemic areas. Duration of artesian well water consumption, average arsenic concentration in drinking water, and cumulative arsenic exposure were all significantly associated with hypertension prevalence. The higher the cumulative arsenic exposure, the higher the prevalence of hypertension. This dose-response relation remained significant after adjustment for age, sex, diabetes mellitus, proteinuria, body mass index, and serum triglyceride level. The results suggest that long-term arsenic exposure may induce hypertension in humans.