



S18. ARSENIC EXPOSURE AND THE RISK OF PRECLINICAL AND CLINICAL ENDPOINTS OF CARDIOVASCULAR DISEASE

Yu CHEN

Departments of Population Health and Environmental Medicine, New York University School of Medicine, USA

Epidemiologic studies have linked arsenic exposure from drinking water to elevated risks of cardiovascular disease (CVD). However, prospective studies are lacking, and the underlying mechanism by which arsenic may lead to CVD is unclear. We conducted a series of cross-sectional and prospective analyses using data from the Health Effects of Arsenic Longitudinal Study (HEALS) in Arahazar, Bangladesh, involving more than 20,000 participants. We found that chronic arsenic exposure from drinking water was positively associated with the risk of fatal and fatal cardiovascular disease, especially in those with high levels monomethylarsonic acid in urine or smokers. There was a positive association between arsenic exposure with plasma levels of sVCAM-1 and the association was stronger in people with higher body mass index. In addition, past long-term arsenic exposure was related to subsequent QT-interval prolongation, especially in women. Arsenic was also related to higher levels of intima-media thickness, an early marker for atherosclerosis. Our results indicate that mechanisms underlying arsenic exposure-related CVD may involve inflammation, endothelial dysfunction, electrocardiogram abnormalities, and incomplete arsenic methylation capacity.