

Dose-response relationship between ingested arsenic and cataracts among residents in Southwestern Taiwan.

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摘要

Abstract

This association study was carried out to examine the effect of long-term exposure to ingested arsenic on various types of cataract. A total of 349 residents living in arseniasis-hyperendemic villages of southwestern Taiwan were recruited. Cumulative arsenic exposure was derived from the history of consuming artesian well water and the arsenic level in well water. The Lens Opacities System III was used to classify different types of cataract. The cataract surgery prevalence was 10% for the age group of 50 or more years. Cortical opacity was most common (35%), while nuclear and posterior subcapsular opacities were observed in 24% and 22% of subjects, respectively. Diabetes mellitus was a significant risk factor for all types of cataract. Occupational sunlight exposure was associated with cortical and posterior subcapsular opacities in a dose-response relationship. The cumulative exposure to arsenic from artesian well water and the duration of consuming artesian well water were associated with an increased risk of all types of lens opacity. But statistically significant dose-response relations with the cumulative arsenic exposure and the duration of consuming artesian well water were observed only for posterior subcapsular opacity ($P = 0.014$ and $P = 0.023$, respectively) after adjustment for age, sex, diabetes status, and occupational sunlight exposure. It was concluded that there was an increasing prevalence of posterior subcapsular opacity with the increase in exposure to ingested arsenic.