飲水砷暴露與中風盛行率之相關研究

A study on the association between prevalence of stroke and arsenic exposure through water consumption

中文摘要

自 1983 年以來，中風即位居台灣十大死因之第二位，僅次於癌症，且為 65 歲以上銀髮族之頭號殺手。而過去研究發現，台灣西南沿海的嘉義、台南平原及東北角的蘭陽盆地，其地下水中含有高濃度砷，且本土流行病學研究發現，台灣之砷暴露地區居民罹患心血管疾病、腦梗塞等疾病之危險性確實較高。故本研究欲探討宜蘭地區居民飲水砷暴露與腦血管疾病盛行之相關情形。材料與方法: 研究母群為宜蘭縣礁溪、壯圍、冬山及五結四鄉鎮始於民國八十年，四十歲以上居民之追蹤世代，共 8,102 位。中風個案之調查乃利用宜蘭縣羅東博愛醫院、羅東聖母醫院之臨床診斷資料核對，並合併台北醫學大學邱弘毅教授截至民國八十六年之中風盛行個案，另加入民國八十九年之全國死亡登記檔及民國八十六年之全民健康保險檔中的中風個案一併列入。結果: 所得之樣本數共計 641 位，中風盛行率為 79.1 ‰，多變項模式分析中調整了年齡、性別、抽菸年數、喝酒年數、糖尿病、高血壓及中風家族史後發現，飲水砷濃度在 50 μg/L 以上者其不分類型中風、梗塞型中風之盛行危險對比值是飲水砷濃度在 10 μg/L 以下者之 1.32 倍及 1.66 倍，且本研究發現飲水砷濃度、糖尿病、高血壓及中風家族史皆為不分類型中風及梗塞型中風之重要危險因子。結論: 長期砷暴露會增加不分類型中風及梗塞型中風之危險。

英文摘要

Stroke has been the second leading cause of death for persons of all ages and the leading killer for those aged 65 years or over in Taiwan since 1983. This study was performed to investigate the prevalence of stroke among residents of the Lanyang Basin on the northeast coast of Taiwan where residents had used well water containing arsenic for more than 50 years. Methods — A total of 8102 men and women had been recruited in the study as a follow-up cohort since 1991 . The status of stroke of study subjects was identified through 5 databases, included the clinical records of Lo-tung Poh-ai Hospital and St. Mary's Hospital, the prevalence data of cerebrovascular disease from the study of Professor HY Chiou in 1997, and the database of Bureau of National Health Insurance in 1997 and the Death Registry of Taiwan in 2000. Information on consumption of well water, sociodemographic characteristics, cigarette smoking, and alcohol consumption habits, as well as personal and family history of disease was also obtained since 1991. Follow-up interviews were carried out in 1997. Logistic regression analysis was used to estimate multivariate-adjusted odds ratios and 95% confidence intervals for various risk factors of stroke. Results — Finally, 641 of our cohort were stroke patients, with a crude point prevalence rate of 79.1 per 1000. Arsenic concentration in well water was a strong risk factor of all stroke and ischemic stroke, as well as diabetes mellitus, hypertension, and family history of stroke. The odds ratios of all stroke and ischemic stroke were 1.32 and 1.66, respectively, for those who consumed well water with an arsenic content of ≥50μg/L compared with those who consumed well water with an arsenic concentration under 10μg/L after adjustment for age, sex, duration of cigarette smoking、alcohol consumption, and the disease status of diabetes、hypertension and the family history of stroke. The interaction between arsenic and risk factors were not prominent in this study. Conclusions — Long-term exposure to inorganic arsenic from well water was associated with an increased prevalence of all stroke and ischemic stroke.