

Seasonal Variation in Ischemic Stroke incidences and the Associations with Climate: A 6-year Population-based Study

林恆慶

Lee HC;Hu CJ;Chen CS;Lin HC

Abstract

Questions about the seasonality of stroke remain controversial. Using a nationwide population-based dataset, this study presents a time series analysis of seasonal patterns in ischemic stroke occurrence, along with their association with climate in Taiwan. Using data from the Taiwan National Health Insurance Research Database, a total of 168,977 visits to emergency departments between 1998 and 2003 for ischemic stroke were identified for patients ranging between 20 and 84 yrs of age. Monthly stroke incidences were calculated for 72 months, by sex and stroke subtype, and for the age groups 20-54, 55-64, 65-74, and ≥ 75 yrs per 100,000 of the population. We performed auto-regressive integrated moving average (ARIMA) analysis to investigate the presence of seasonality and any association with climate for acute ischemic stroke events. We found no significant seasonal variation in the incidence of ischemic stroke for any age or sex groups. Furthermore, after adjusting for seasonality, month, and trend, the ARIMA regression model revealed only associations between ischemic stroke incidence and atmospheric pressure. We conclude that seasonality of ischemic stroke does not exist in Taiwan. Ischemic stroke incidence is, however, significantly related to atmospheric pressure.