

Seasonal Variations in Urinary Calculi Attacks and the Association with Climate: a Population

Baswd Study

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摘要

Abstract

PURPOSE: In this nationwide population based study we used 5-year data on urinary calculi patient visits to emergency departments in Taiwan to investigate the seasonal variation in urinary calculi attacks and the association with 5 climatic parameters.

MATERIALS AND METHODS: Comprehensive details on total admissions to emergency departments were obtained from the Taiwan National Health Insurance Research Database (1999 to 2003), providing monthly urinary calculi attack rates per 100,000 of the population. Subgroups of urinary calculi incidences were created based on gender and 3 age groups (18 to 44, 45 to 64 and 65 years old or older). Following adjustment for time trend effects, evaluation of the monthly urinary calculi attack rates and the effects of climatic factors was performed using auto-regressive integrated moving average regression methodology. **RESULTS:** The seasonal trends in the monthly urinary calculi attack rates revealed a peak in July to September, followed by a sharp decline in October, with the auto-regressive integrated moving average tests for seasonality demonstrating significance for each gender group, for each age group and for the whole sample (all $p < 0.001$).

Although significant associations were found between ambient temperature, atmospheric pressure and hours of sunshine vis-à-vis monthly urinary calculi attack rates for the total population, after adjustment for trends and seasonality, ambient temperature was found to be the sole major factor having any positive association with the monthly attack rates.

CONCLUSIONS: We conclude that seasonal variations do exist in the monthly urinary calculi attack rates for all age and gender populations, and that following time series statistical adjustment, only ambient temperature had any consistent association with monthly attack rates.