

Relationship Between Death by Drowning and Air Temperature in the 23 Wards (Municipalities) of Tokyo

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Abstract

Background: Accidental death is one of the major causes of death in Japan. And the death rate due to drowning is higher than that of traffic accidents. So far, there have been some studies of drowning in Japan, the relationship between death by drowning and temperature in the 23 wards of Tokyo has not been investigated.

Study design: This is an ecological study. **Aim:** The aim of this study was to explore the link between the number of accidental deaths by drowning and air temperature in the 23 wards (municipalities) of Tokyo, Japan.

Methods: Monthly data of accidental death by drowning from Jan 2002 to Dec 2014 were obtained from the Tokyo Medical Examiner's Office official website. Air temperature parameters i.e. mean air temperature, mean of the highest air temperature, mean of the lowest air temperature, the highest air temperature and

the lowest air temperature for the same period were obtained from the Japan Meteorological Agency official website. The relation between the number of deaths by drowning and air temperature was evaluated.

Results: The number of deaths by drowning was 11.1 ± 7.0 deaths per month and the mean air temperature was 16.6 ± 7.5 °C. The total number of deaths by drowning in January was the highest among the months in both men and women. In addition, the number of deaths by drowning was significantly and negatively correlated with air temperature parameters.

Conclusion: The number of deaths by drowning was closely associated with air temperature, and effective measures for preventing accidental death by drowning are urgently required.

Keywords: drowning, accident, sudden death, air temperature