Cerebrovascular Disease

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Association of Temperature with Cerebrovascular and Cardiovascular Diseases in Beijing in the Context of Climate Change

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Objectives: Firstly, to elucidate the relative importance of temperature on human health. Secondly, to interpret the importance of temperature variation with respect to observed Cardiovascular and Cerebrovascular diseases. Thirdly, to estimate the direct effects of temperature on local people in some big cities.

Methods: Data from the meteorological database of China Meteorological Administration was selected and the temperature characteristics in terms of daily average temperature, daily mean temperature, and daily temperature difference from January 1 to December 31 of 2012 were analyzed. The data set of cardiovascular and cerebrovascular diseases including the daily myocardial infarction (ICD: 21–22) and cerebral infarction (ICD: 63) were chosen from a class A hospital in Beijing, totally amounting to 12933 cases. Four patient groups including under the age of 44, 45–59, 60–74 and over 75 years old were analyzed by the aid of spss17.0.

Results: We found that the number of male cardiovascular and cerebrovascular patients was more than the number of female patients in the four groups, with the highest increase in the 45–59 group. In the female cardiovascular and Cerebrovascular patients showed a peak within the group of 60–74. The temperature factor, to certain content, induced some effects on cardiovascular and cerebrovascular diseases. It seemed the effect of temperature is much greater in persons of middle-aged and aged over 70 years, with patients appearing annual maximum peak in winter and larger fluctuation in autumn. Furthermore, the maximum and minimum numbers of patients just appeared shortly after the peak temperature peak, probably implying a lagged effect between the number of cardio-vascular and cerebrovascular diseases and the temperature difference.

Conclusions: A statistically significant correlation has been found between temperature and mortality. This relationship is not monotonic, but mortality increases in proportion to the variance in ambient temperature from a range of temperatures that varies from winter to summer in Beijing.

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Long-term risk of stroke in female part of general population aged 25-64 years with sleep disorders in Russia: based on MONICA-psychosocial epidemiological study

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Objectives: To determine the effect of sleep disturbances (SD) on health behavior and relative risk of stroke in female part of population aged 25-64 years depending on social gradient in Russia over 16 years of follow-up.

Methods: Under the third screening of the WHO “MONICA-psychosocial” (MOPSY) program random representative sample of women aged 25-64 years (n=870) were surveyed in Novosibirsk. Jenkins’s questionnaire was used to estimate quality of sleep. From 1995 to 2010 women were followed for 16 years for the incidence of stroke. Cox proportional regression was used for hazard ratio (HR) assessment. Chi-square test ($\chi^2$) was used to assess the statistical significance between groups. Women having cerebrovascular diseases at the baseline were not included in the analysis.

Results: The prevalence of SD in women aged 25-64 years was 64.9%. Women with SD significantly extended negative behavioral habits: smoking and unsuccessful attempts to give it up ($\chi^2$=41.4 df=20 P<0.001), low physical activity, they were less likely to follow a diet ($\chi^2$=33.9 df=16 P<0.01). Stroke was developed in 35 (6.3%) women over 16 years of study. Within 16 years of follow-up women with SD had 1.95-fold risk of stroke ($\chi^2$=9.04 df=1 P=0.05) than those without SD. Depending on the age groups the risk of stroke incidence was highest in group of 45-59.