

A CASE-CONTROL STUDY ON THE IMPACTS OF HIGH AMBIENT TEMPERATURE ON THE INCIDENCE OF UROLITHIASIS AMONG OUTDOOR WORKERS IN GUANGZHOU, CHINA

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Background and Aims: High temperature exposure impacts the prevalence of urolithiasis on people, especially on those who are exposed to high temperature at their workplaces in tropical and subtropical areas in developing countries. Many previous studies compared prevalence between subjects exposed to, and not exposed to, high temperatures using cross-sectional designs. In this study, we proposed a retrospective matched case-control study to identify potential predictors for urolithiasis occurrence among outdoor workers in Guangzhou, China

Methods: Health surveillance data of a shipbuilding company were collected from Guangdong Institute of Health Inspection, including kidney B-ultrasonography results □ strong medical diagnosis evidence for urolithiasis □, electrocardiography results, blood pressure, departments of work, length of service, daily exposure time, gender and age for the period 2003-2010. We matched cases and controls at 1:4 with gender and age as criteria, and used Conditional Logistic Regression (Cox Regression Model) for identifying potential predictors, including B-ultrasonography results with departments of work, length of service, daily exposure time, electrocardiography results and blood pressure results

Results: Of 950 workers in the shipbuilding company, 190 (20.00%) had presented with at least one episode of urolithiasis. Of these, 149 were among workers exposed to high temperature (30.66%) and 41 among the workers not exposed to high temperature (8.84%) ($\chi^2=70.65$, $P<0.001$). Length of service, departments of work, and daily exposure time were all identified as predictors for urolithiasis occurrence ($OR_1=1.012$, $OR_2=0.233$, $OR_3=0.001$, $p<0.001$), and length of service had the highest odd ratio of the three.

Conclusions: This study shows that length of service, departments of work, and daily exposure time represent risk factors for urolithiasis among outdoor workers in Guangzhou, China.