67 ASBESTOS EXPOSURE AND MORTALITY IN A CHINESE MINER COHORT

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Objectives Although asbestos has been banned in many countries, chrysotile asbestos has continued to be mined and used in China. This study observed cause-specific mortality

in a cohort of asbestos miners to evaluate its association with asbestos exposure.

Methods The cohort consisted of 1539 male workers from the largest chrysotile asbestos mine, which was observed from 1981 to 2006. Information on vital status, occupational and smoking history was obtained from individual contact and personnel records. Causes and dates of deaths were verified from death registry. Workers were divided into two groups: miners (frontline workers) and internal controls (service workers). Standardised mortality ratios (SMR) were calculated based on national mortality. Cox proportional hazard models were fit to obtain hazard ratios for mortality associated with asbestos exposure, while considering age, smoking and employment years.

Results All mortality were significantly higher in the cohort than national level. However, the controls had a similar mortality as general population, except for non-malignant respiratory disease. In contrast, miners had significantly higher mortality, among which SMRs for lung cancer and non-malignant respiratory disease were 4.71 (95% CI, 3.57 to 6.21) and 3.53 (2.78 to 4.48), respectively. Multivariable analyses revealed that asbestos exposure (miners vs controls) was related to five-time mortality risk for lung cancer, and 3-time risks for all cancers, GI cancer and non-malignant respiratory disease.

Conclusions The results suggested excessive cause-specific mortality, in particular from lung cancer, in the cohort, which was strongly associated with exposure to chrysotile asbestos.