In the 1970s, South Africa was the world's third largest producer of asbestos. The amphiboles, amosite and crocidolite, were mined in large quantities along with chrysotile. Most asbestos was exported but some was used locally to manufacture products including asbestos cement (AC) roof sheets which were used to build houses and schools. Although asbestos was banned in South Africa in 2008, there are over a million houses with AC roofs. Asbestos Regulations promulgated in 2002 prescribe the method for working with and demolishing asbestos containing materials and a key step is the identification of asbestos. The NIOH provides a national service to identify asbestos in materials and from 2003 to 2016, some 2657 samples have been analysed, including 155 roofs. Of these, 135 (87%) contained asbestos and 97 (72%) of the AC roofs contained amphibole asbestos fibres either alone or in a mixture. This suggests that several million people are living under a roof containing amphibole asbestos. Studies that sampled the air for asbestos fibres in a township built with AC roofs indicate that fibres are not normally liberated from the roofs. Another study in the same township has shown that over many years, asbestos can be leached from roofs by rainwater and fibres can be found in the soil below roofs which have no gutters. The legacy of AC roofs on homes and schools is a concern for residents and parents. The magnitude of the problem raises concerns about the safe removal, disposal and cost to replace these roofs.

Poster Presentation

Cancer

0253

ESTIMATED FUTURE INCIDENCE OF MALIGNANT MESOTHELIOMA IN KOREA : PROJECTION FROM 2015 TO 2034

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Background Malignant mesothelioma is a malignant tumour on the pleura or the peritoneum caused mostly by asbestos. Although asbestos is not currently used in Korea, the incidence of mesothelioma is increasing due to its long latent period. This study was the first to predict the future incidence of malignant mesothelioma in Korea over the next 20 years.

Method Mesothelioma incidence data from 1995–2014 was acquired from the Korea Central Cancer Registry (KCCR). Demographic data was acquired from the Korean Statistical Information Service (KOSIS) for 1995–2034. An APC model with Möller's power-link function was utilised to estimate the future incidence of mesothelioma.

Result It was predicted that 2684 and 1270 new cases of mesothelioma in men and women would occur over the next 20 years. For both sexes, the mesothelioma incidence rate was predicted to be greater in 2030–2034 (men, 0.622; women, 0.224) compared to that in 2010–2014 (men, 0.280; women, 0.152). The age-standardised incidence rate (ASR) was

predicted to be slightly greater in 2030–2034 (men, 0.229; women, 0.109) relative to the rate in 2010–2014 (men, 0.216; women, 0.104) in both sex. The changes in mesothelioma incidence were mostly caused by changes in the population structure of Korea due to ageing and not by changes in the mesothelioma risk ratio.

Conclusion The projected mesothelioma incidence continuously increases in Korea over the next 20 years. Although it was not related to an increase in the mesothelioma risk ratio, continuous preventive efforts are necessary.

Poster Presentation

Injuries

0254

OUTDOOR TEMPERATURE, AIR POLLUTANTS AND OCCUPATIONAL INJURIES RISK: A SYSTEMATIC REVIEW OF EPIDEMIOLOGICAL STUDIES AND A CASE-CROSSOVER STUDY

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Introduction We have carried out a systematic review of epidemiological studies about the association between extreme weather conditions and work-related injuries (WRI). Furthermore, we have analysed the association between extreme temperature, air pollutants and WRI in three Italian cities identifying more susceptible workers' categories by the means of a case cross over study.

Methods We have performed a systematic review of epidemiological studies concerning the risk of WRI for extreme temperature. All occupational injuries between 2001–2010 in Milan, Turin and Rome have been extracted from the Italian workers compensation claims archives. Associations between temperature (T), air pollutants (PM10, NO2, O3) and WRI have been estimated using a time-stratified case-crossover study, separately in May–September (warm season, WS) and November–February (cold season, CS).

Results The epidemiological studies for estimating the association between extreme temperature and WRI appeared to be few and conducted with different methodologies. In our study exposure to NO2 (lag 0–8) showed the highest positive effect on the risk of WRI ranging, in the warm season, between +20% (CI 95%: 1.16–1.24) in Milan and +30% (CI 95%: 1.24–1.37) in Turin. Temperature, in WS, was associated to an increased risk of WRI among those working in construction, transport and energy industry with bricklayer, metal-worker, mechanic, and asphalter as the most involved workers' categories.

Conclusions The findings of our study should be considered for planning health and safety prevention programs and correctly identifying measure targeted to risk mitigation for specific categories of workers.