

EDITORIAL

Asbestos-related diseases: time for technology sharing

Industrialization has increased dramatically in Asia since the early 1990s as reflected in the soaring growth rates of recent years. Historically, industrialized countries have invested heavily in infrastructure. In these efforts, asbestos was long considered a valuable commodity with a wide range of applications.

As the health risks associated with asbestos became more apparent, however, many Western countries reduced or eliminated their use of this material. Unfortunately, many Asian countries have continued to use asbestos, with few countries implementing bans on its use. Collectively, Asia has increased its global share of asbestos use in the raw form from 19% (i.e. 840 of 4350 thousand metric tons) in 1985 to 47% (i.e. 950 of 2040 thousand metric tons) in 2000 as calculated by the author using the Virta database [1]. Thus, Asia has become the world's centre for asbestos consumption.

The long-term implications of asbestos use are grim, particularly from the standpoints of occupational and public health. Consumption of raw asbestos intensifies human exposure and can increase the disease burden on society in as few as 20–40 years [2,3]. In Asia, while such effects are not fully apparent, they are nevertheless realistic concerns. Even more troubling is the second-hand treatment of asbestos, a practice that remains common in the region involving machinery repair, maintenance and demolition, as well as shipwrecking. Therefore, the golden opportunity for prevention should be seized at its primary and most effective level: by discontinuing the use of asbestos.

Fortunately, Asia has not yet experienced the bulk of the disease burden. According to the mortality database maintained by the World Health Organization (WHO), mesothelioma contributed to 46 476 deaths in 62 countries between 1994 and 2004 [4]. During this time, 8258 (i.e. 17.8%) of these deaths occurred in four (i.e. 6.5%) Asian countries, with almost all remaining deaths occurring in Western countries. The heavy burden of disease in Western countries is likely attributable to rampant use of asbestos during the 1960s and 1970s [2], whereas the relatively low burden of disease in Asia probably reflects an insufficient latency time as well as inadequate recognition of asbestos-related diseases (ARDs). These ecologic perspectives reinforce the need for action at global, regional and national levels.

Japan is in the midst of an epidemic of ARDs [5,6]. Hence, the country's primary objectives have shifted towards developing technologies to treat and compensate

patients. On the other hand, the country possesses a wealth of experience in primary and secondary prevention as it has experienced a lengthy period of 'controlled use' of asbestos. Singapore and Korea are more or less in a similar situation, including the recent political move towards implementing an asbestos ban. Similar to countries in Western Europe, Oceania and the United States, these three Asian countries have the potential to lead technology sharing and should unite in their fight to defeat the epidemic of the region.

Heavily impacted countries will undoubtedly be motivated to improve technologies geared towards the latter phases of prevention. More importantly, these countries should consider the advantages of sharing relevant technologies at all phases of prevention with other countries that are not as heavily impacted but remain dependent on asbestos (e.g. Vietnam, China and Thailand). Academia can play an important role in bridging technological gaps while capitalizing on the window of opportunity afforded by long latency times. As some countries will benefit from technologies that address particular preventive phases, the challenge is to develop a coherent strategy that will promote international collaboration while taking into account circumstances that are unique to each country.

The Asian Initiative for the Elimination of ARDs (i.e. the Asian Asbestos Initiative or AAI) aims to develop an academic platform on which researchers and administrators from different countries can share relevant core technologies. The ultimate goal of this project is consistent with the efforts of the WHO [7] and the International Labour Organization [8], to eliminate ARDs. Proponents

Table 1. Preventive technologies which merit sharing/transferring in international cooperation for the elimination of ARDs

Primary prevention
Substitution technologies
Measurement of fibre concentration in work environment and asbestos-containing products
Exposure reduction, e.g. containment, local exhaust systems, use of protective masks
Secondary prevention
Chest X-ray techniques including detection of plaques and classification of pneumoconiosis
Pathological diagnosis of mesothelioma
Identification and measurement of asbestos fibres in lung specimen
Tertiary prevention
Effective treatment of asbestos-related diseases, in particular new treatment options for mesothelioma
Design and implementation of just compensation schemes

agree that the most effective means to prevent ARDs is to discontinue the use of asbestos; however, they acknowledge that the process will require a gradual transition involving progressive steps.

The AAI considers the traditional public health approach as the central pillar on which to develop intervention strategies as this model addresses all three levels of prevention (Table 1). Thus, clinical technologies (i.e. including the diagnosis and treatment of ARDs) are as important as technologies at the primary level of prevention (i.e. reducing or eliminating exposure). These efforts will focus on Asian countries, while attempting to formulate a regional model from which other parts of the world may benefit. The time is ripe for technology sharing.

Funding

Asia and Africa Science Platform Program of the Japan Society for the Promotion of Science. Funding to pay the Open Access publication charges for this article was provided by the Japan Society for the Promotion of Sciences.

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