Asbestos exposure: challenges for Australian clinicians

The unique properties of asbestos that still make it valuable for industry make it extremely hazardous to health.

Due to the extensive past use of asbestos in Australia, known exposure is common and causes anxiety, especially because of the acknowledged increased risk of thoracic malignancies. With the increasing use of computed tomography for routine diagnostic purposes, more people are being identified with pleural plaques from minor asbestos exposure. This has led to increased concerns about the risks of more serious asbestos-related diseases (ARDs) developing, and has resulted in an increased number of diagnostic tests being performed, even though the presence of pleural plaques is not as such a risk factor for (pleural) malignant mesothelioma (MM) or bronchogenic cancer.1 Nevertheless, anxiety2 and the inability to reduce MM risk following exposure3 or to halt progression of established asbestosis result in significant health care problems and expenditure.

Although overall rates of MM in Australia have levelled off at around 50 per million per annum in men and tenfold less in women,4 the pattern of exposure of patients with MM is changing.5 Three waves of disease have been described: disease resulting from exposure to asbestos in the mining and milling of ore and the manufacturing of asbestos products; disease among people who have used asbestos products; and disease among those engaged in the repair, renovation and demolition of buildings.6 Landrigan also predicted disease resulting from serious environment exposure among residents, tenants and users of these buildings. These will continue to evolve. Since prohibition of the production and importation of asbestos in Australia in 2004, patterns of workforce and domestic exposure have further changed. Increasingly, claimants are presenting with MM arising solely from domestic exposure.7

Pleural plaques — the most common benign ARD — have minimal effect on lung function. However, plaques calcify with age and become more readily visible radiographically.

While there is no evidence that early diagnosis improves the survival of people with benign asbestos-related pleural diseases, asbestosis or MM, low-dose (albeit high-cost) computed tomography-based detection of early stage lung cancer in heavy smokers has been demonstrated to improve their survival, resulting in the establishment of screening programs.8 The level of risk justifying participation in such programs is yet to be established.

Asbestosis also remains a problem because it cannot be distinguished on clinical or pathological grounds from diffuse interstitial pulmonary fibrosis of other or unknown cause, other than on the basis of evidence (historical, radiological or pathological) of asbestos exposure;9,10 As exposure to asbestos in the community declines, it will be increasingly unlikely that clinicians will be mindful of the condition and diligent in taking an asbestos exposure history. There is still no treatment shown to be effective for asbestosis.

“Immunotherapies currently provide the most promise for new treatment advances”

Lung cancer and MM remain the outcomes of asbestos exposure which are most feared in the community. As there is no exposure threshold for either asbestos or smoking in causing lung cancer, and because smoking and asbestos interact in lung cancer causation, it is difficult to attribute disease solely to asbestos unless an exposed patient has never smoked. The principles of treatment and prognosis of asbestos-related lung cancer are identical to those of lung cancer in non-asbestos-exposed patients, with special consideration of lung function in the assessment of fitness for surgical resection.

Epidemiological observations have shown that the risk of MM is doubled in first-degree relatives of index cases,12 leading to a need to understand the mechanism of such inheritance that could provide an understanding of the molecular changes in the process of carcinogenicity in general. MM has also become more readily and accurately diagnosed with cytology,9 reducing the need for more invasive diagnostic procedures. MM remains universally fatal, with a median survival of 9–12 months, and epithelioid disease is the least rapidly progressive.13 Most patients present with advanced disease, and
palliative cytotoxic chemotherapy has been the mainstay of treatment for the past 15 years, prolonging survival modestly in selected patients.14 A recent randomised clinical trial reported a survival benefit from the addition of a monoclonal antibody targeting vascular endothelial growth factor,15 and there are early reports of responses to immunotherapies targeting the checkpoint blockade molecules cytotoxic T lymphocyte antigen 4 and programmed death 1. Immunotherapies currently provide the most promise for new treatment advances.

Fortunately, in the face of an ongoing ARD burden, liability issues in common law damages claims have largely been resolved across Australia, and most people with disabling ARD are compensated. However, workers’ compensation schemes for ARD vary among the states — there is still a disparity in the awards of general damages (for pain and suffering) in the various jurisdictions such that there is a strong case to harmonise the approach nationally.

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References are available online at www.mja.com.au.


