Sydney researchers raise hopes for easier and earlier detection of mesothelioma

Hopes for easier and earlier diagnosis of mesothelioma, an almost invariably fatal asbestos-related cancer, have risen after researchers led by Dr Glen Reid and Professor Nico van Zandwijk from the Asbestos Diseases Research Institute (ADRI) at Concord Repatriation General Hospital presented ground-breaking findings at an international cancer conference in Geneva.

The researchers’ findings, reported at the European Society for Medical Oncology’s 3rd European Lung Cancer conference in Geneva, Switzerland, identified a small molecule that is more abundant in the blood of people with mesothelioma than in healthy people.

Speaking at the conference, ADRI researcher, Dr Michaela Kirschner, said currently the diagnosis of mesothelioma, the aggressive cancer caused by asbestos exposure, depended on the availability of a tissue biopsy.

“However, suitable biopsies are not always available, which can leave doctors uncertain about the patient’s diagnosis, sometimes resulting in a delay to the start of treatment”. Dr Kirschner said.

“If doctors could use a diagnostic marker based on a simple blood test, it could circumvent the problem of availability of tumour tissue, and help to accelerate the diagnostic process.

“So far, a number of proteins have been proposed as blood-based markers for malignant pleural mesothelioma, however none of these has so far reached the accuracy required for routine clinical use,” she said.

In the new study, Dr Kirschner and colleagues explored whether molecules known as microRNAs were present in the blood of patients and whether they could serve as a diagnostic marker for the disease. These studies revealed that the level of a particular microRNA known as miR-625-3p was four-fold higher in the blood of mesothelioma patients.

Measuring levels of that molecule in two independent series of blood samples allowed the researchers to discriminate between MPM patients and controls with an accuracy of 82.4 per cent.

“Nevertheless, additional studies are needed to support these promising findings and to confirm that miR-625-3p is sensitive and specific enough for the proposed diagnostic task,” Dr Kirschner said.
“Should further studies prove that microRNAs in plasma are accurate enough for the diagnosis of malignant pleural mesothelioma, this may eventually lead to the development of a diagnostic test for routine clinical use.

“This test would then represent a relatively simple way to circumvent the problems associated with obtaining a tissue biopsy. For a patient this would not only mean a simplification of the diagnostic process but also that appropriate treatment could begin at an earlier stage,” she said.