

**MEDIA RELEASE**

**EMBARGOED: AEST Midnight Sunday 21 November 2010**

**AUSTRALIA'S NEW ASBESTOS DISEASES RESEARCH INSTITUTE  
ONE STEP CLOSER TO TREATING PATIENTS WITH MESOTHELIOMA**

*Asbestos Awareness Week Is - 20-27 November*

New research conducted by the Asbestos Diseases Research Institute (ADRI) (the world's first stand-alone research facility dedicated to asbestos-related diseases) has identified a new tumour marker for mesothelioma – a breakthrough toward better treatment for patients with a disease that has an average survival time of only 6-18 months after diagnosis.

With malignant cancers characterised by uncontrolled growth of tumour cells, the rate of growth of tumour cells can differ significantly from one patient to another making effective treatment of the cancer difficult. However, recent oncological research conducted at the ADRI has shown certain markers in blood or tumour tissue can reflect the aggressiveness of the disease.

Professor Nico van Zandwijk, Director of the ADRI said, "This is a significant research outcome in that some of these markers have become very important in the treatment of malignant diseases such as asbestos-related mesothelioma by assisting clinicians in guiding specific treatment for each person diagnosed with the disease.

"By enabling us to individualise treatment we can now avoid demanding therapy in some cases and institute radical treatment in other cases when required," said Professor van Zandwijk.

"With the findings currently validated in a new series of patients, this is an important step forward in offering better treatment selection for patients while bringing our researchers closer to understanding the mechanisms and origin of disease progression," he said.

Australia has the world's highest incidence of malignant mesothelioma per capita, with more than 700 new cases diagnosed each year. It is estimated that the incidence of malignant mesothelioma will continue to increase for the next 10 to 20 years.

With the aim of improving the diagnosis and treatment of asbestos-related diseases and identifying new preventative measures, the ADRI conducts research focused on clinical and epidemiological aspects of asbestos-related diseases and is located in the Bernie Banton Centre (Concord Hospital Campus) which opened on the 21st January 2009.

"After a period with almost no progress in asbestos-related diseases, there is now a light on the horizon and the ADRI is committed to making further progress in this important research," Professor van Zandwijk said.

The Asbestos Diseases Research Institute is Australia's leading research institution into asbestos-related diseases. It is a charitable, not-for-profit foundation dedicated to paving a better future for all those Australians exposed to asbestos fibers while being instrumental in determining effective preventative measures. The ADRI has also coordinated experts from around Australia to draft uniform national guidelines for the treatment of mesothelioma.

During Asbestos Awareness Week, the ADRI is appealing for donations to help support this vital research into asbestos related diseases including pleural disease, asbestosis, lung cancer and mesothelioma.

To make a donation please call 02 9767 9800 (during business hours) or visit [www.adri.org.au](http://www.adri.org.au)

All donations of \$2.00 or more will be gratefully received and fully tax deductible.

-ENDS-

- Professor van Zandwijk is available for interview from Tuesday 16th November 2010 and is also available for interview on Monday 22nd November – Asbestos Awareness Week.
- A full transcript of the research paper is available on request.

**For more information or to arrange an interview please contact:**

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## JOURNALIST NOTES

The research findings were first published by American Association for Cancer Research.

### The Research

**High blood neutrophil-to-lymphocyte ratio is an indicator of poor prognosis in malignant mesothelioma patients undergoing systemic therapy**

### Researchers

Kao SC, Pavlakis N, Harvie R, Vardy JL, Boyer MJ, van Zandwijk N, et al.

### Abstract

**Purpose:** Asbestos-induced chronic inflammation is implicated in the pathogenesis of malignant mesothelioma (MM). We have investigated blood neutrophil-to-lymphocyte ratio (NLR), an index of systemic inflammation, as a prognostic factor in MM patients.

**Experimental Design:** Patients with MM who had systemic therapy at participating institutes were studied. Potential prognostic factors such as age, gender, performance status, histological subtype, baseline laboratory parameters, including NLR were analysed. Overall survival from commencement of therapy was determined by the Kaplan Meier method. Multivariate analyses using Cox Regression model were performed with significant factors ( $p \leq 0.05$ ) to determine their independent effect.

**Results:** A total of 173 MM patients undergoing systemic therapy including 119 patients receiving first line therapy and 54 patients receiving second or third line therapy, were included in this retrospective evaluation. Forty two percent of patients had an elevated NLR at baseline. The following variables were predictive of survival: female gender ( $p=0.044$ ), epithelioid histological subtype ( $p<0.001$ ), baseline WCC  $<8.3 \times 10^9/l$  ( $p=0.008$ ), baseline platelet count  $\leq 400 \times 10^9/l$  ( $p=0.05$ ), and  $NLR < 5$  ( $p<0.001$ ). After multivariate analysis, histological epithelioid subtype (HR 2.0; 95% CI, 1.3-2.9;  $p=0.001$ ), and  $NLR < 5$  (HR 2.7; 95% CI, 1.8-3.9;  $p<0.001$ ) remained independent predictors. The one-year survival rate was 60% vs. 26% while the two-year survival rate was 34% vs. 10% for  $NLR < 5$  and  $\geq 5$ , respectively. In the separate analyses of chemotherapy-naive and previously-treated patient groups, NLR was an independent predictor of survival in both groups.

**Conclusion:** Our results indicate that NLR is an independent predictor of survival for patients with MM undergoing systemic therapy.

## **Asbestos Diseases Research Institute**

The Asbestos Diseases Research Institute (ADRI), established by the Asbestos Diseases Research Foundation (ADRF), a charitable, not-for-profit foundation, is dedicated to pave a better future for all those unfortunate Australians exposed to asbestos and to be instrumental in effective prevention measures. On the 21st January 2009, the then Prime Minister, the Hon. Kevin Rudd, officially opened the Bernie Banton Centre. This state-of-the-art Centre integrates the research efforts of the ADRI and the ANZAC Research Institute on the Concord Hospital Campus.

## **ASBESTOS RELATED DISEASES INFORMATION**

Imbedded asbestos fibres irritate lung tissue around them, causing a number of diseases:

### **Pleural disease**

Inflammation and irritation of outer lining of lung, the pleura. The pleura stiffens and thickens widely (diffuse thickening) or in patches (plaques), and can fill with fluid. This thickening can restrict breathing.

### **Asbestosis**

This is scarring of the lungs: the airways become so inflamed and scarred that oxygen is no longer able to pass from the lungs into the blood. The lungs become stiff and inelastic, making breathing progressively difficult. Symptoms include tightness in the chest, dry cough, and in the later stages, a bluish tinge to the skin caused by lack of oxygen. Asbestosis is usually seen in former asbestos miners, asbestos manufacturing workers and insulation workers, and usually takes a decade or more to develop.

### **Lung cancer**

Exposure to asbestos fibres greatly increases a person's risk of developing lung cancer, particularly if they are also a smoker.

### **Mesothelioma**

Australia has the highest incidence of malignant mesothelioma per capita and unfortunately this rate is increasing.

Mesothelioma is a cancer of the pleura. It typically grows quickly and spreads widely before symptoms appear, making an early diagnosis and effective treatment very difficult. The average survival time after diagnosis is only 6-18 months. A very small exposure to asbestos can be enough to trigger the cancer, however only a small percentage of people exposed to asbestos develop mesothelioma. There may be a lag of 20 to 40 years after asbestos exposure before mesothelioma results.