The immunological effects of asbestos exposure on various lymphocytes such as the regulatory T cell (Treg), responder CD4+T helper cell (Tresp), CD8+cytotoxic T lymphocytes (CTL) and natural killer (NK) cells were investigated. Results show that asbestos exposure impairs anti-tumour immunity through enhancement of regulatory T cell function and volume, reduction of CXCR3 chemokine receptor in responder CD4+T helper cells, and impairment of the killing activities of CD8+cytotoxic T lymphocytes (CTL) and NK cells. These findings were used to explore biological markers associated with asbestos exposure and asbestos-induced cancers, and suggested the usefulness of serum/plasma IL-10 and TGF-β, surface CXCR3 expression in Tresp, the secreting potential of IFN-γ in Tresp, intracellular perforin level in CTL, and surface expression Nkp46 in NK cells. Although other unexplored cytokines in serum/plasma and molecules in these immunological cells, including Th17, should be investigated by experimental procedures in addition to a comprehensive analysis of screening methods, biomarkers based on immunological alterations may be helpful in clinical situations to screen the high-risk population exposed to asbestos and susceptible to asbestos-related cancers such as mesothelioma.

**Conclusion**

Our data confirmed that workplace nickel exposure can cause occupational allergic contact dermatitis among workers producing ferronickel alloys, and determined the need of preventive activities in order to decrease the pathogenic dermal effect of nickel.

**Methods**

For MLR, human PBMCs were cultured with irradiated allogenic PBMCs upon exposure to chrysotile B asbestos at 5 μg/ml for 7 days. After 2 days of culture, IL-15 was added at 1 ng/ml. After 7 days of MLR, PBMCs were collected and analysed for phenotypic and functional markers of CD8+ T cells with fluorescence-labelled anti-CD3, anti-CD8, anti-CD45RA, anti-CD45RO, and anti-granzyme B Abs using flow cytometry.

**Result**

IL-15 didn’t recover the asbestos-caused decreases in% CD25+ and% CD45RO+ cells and increase in% CD45RA+ cells, but recovered the decrease in cell numbers of CD3+CD8+ cells and% granzyome B+ cells, in contrast to IL-2.

**Discussion**

These results indicate that IL-15 is more effective on recovery from asbestos-caused suppressed induction of CTL than IL-2, although the interfered expressions of cell surface markers were not recovered even by addition of IL-15. Further study about the characteristics of CD3+CD8+granzyome B+ cells induced by addition of IL-15 will contribute to clarification for the mechanism of asbestos-caused suppression in CTL induction and to finding out a clue to restore it.