Occupational Health-2013

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference and Exhibition on
Occupational Health & Safety

May 21-22, 2013 DoubleTree by Hilton Beijing, China

Expression and significance of death receptors in alveolar macrophages from silicosis patients

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Abstract

Objective: To explore the expression of death receptors in alveolar macrophages from silicosis patients were detected and the relationship between death receptors level and lung fibrosis.

Methods: 48 male silicosis patients and 13 male observers treated by whole lung lavage were choosen as subjects. 13 male health people with normal lung X-ray photograph were selected as the control group. The alveolar macrophags (AM) were collected, purified and incubated at 37 ℃ for 24 hours. After that three kinds of soluble death receptors (sDR) were determined by ELISA, while the membrane-bound death receptors (mDR) were detected by Western blot. The relationship between DR and silica exposure related factors was analyzed.

Results: The grayscale of mDR in those exposed to silica was thicker than those of controls, and increased with the lung fibrosis progression. The mDR level in silicosis patients was higher than those of the control group and observers（$P<0.05$）.

Conclusion: The upregulated mDR and downregulated sDR induced by silica in human AM may play important role in the development and progression of silicosis, death receptor pathway activation may be the important mechanism of silica pathogenesis.

Keywords: Death receptor ; Silicosis ; Apoptosis related factor ; Tumor necrosis factor receptor ; TNF related apoptosis inducing ligand receptor 2.

Biography

Sanqiao Yao, Professor, PhD. Director of Department of Preventive Medicine, School of Public Health, Hebei United University; Member of standing committee of Radical Preventive Medicine Society, China Preventive Medical Association; Member of Occupational Medicine Society, China Coal Labor Protection Association & Occupational Psychology and Stress Group, China Occupational Health and Medicine Association; Member of the editorial board of Chinese Preventive Medicine; Reviewer of China Occupational Medicine, Toxicology Letter, Environ Monitoring & Assessment and Biomedicine & Environ Science. Research focus

** This work was supported by the Natural Science Foundation of China (30671741), the Pneumoconiosis Treatment Foundation for China Coal Miners (2005-03), and the Science and Technology Support Program of Hebei Province (09276196D).