Tobacco and immunology: A cross link

Tobacco and its smoke consist of several thousand toxic and carcinogenic substances. Ingredients of tobacco products have numerous extremely harmful effects on human health and are related to the occurrence of various diseases such as oral and respiratory infections, chronic obstructive pulmonary disease (COPD) and oral cancer, lung cancer and other cancers also. The increased incidence of these diseases in smokers is possibly caused by the effects of tobacco on the function disorder of the immune system. Whereas the acute effect of smoking on the function of the immune system is less known, chronic exposure to tobacco ingredients causes a decreased function of T-lymphocytes. Tobacco contains trace amounts of microbial cell components, including bacterial lipopolysaccharide. These and other carcinogenic substances (CS) constituents induce chronic inflammation at mucosal surfaces and modify host responses to exogenous antigens. The effects of CS on immunity are far-reaching and complex; both pro-inflammatory and suppressive effects may be induced. The net effect of CS on immunity depends on many variables, including the dose and type of tobacco, the route and chronicity of exposure and the presence of other factors at the time of immune cell stimulation, such as toll receptor ligands or other inflammatory mediators. The recognition of specific mechanisms by which CS affects host immunity is an important step toward elucidating mechanisms of tobacco-induced disease and may identify novel therapeutic approaches for the management of diseases that afflict smokers.

Biography

Rohit B Moharil has completed his Master of Dental Surgery in 2010 at VSPM Dental College in India and his Bachelor of Dental Surgery in 2002 at SPDC Dental College, Maharashtra University of Health Sciences in India. He has 10 publications to his credit and was also selected for FAIMER Fellowship.

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