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A brief review on cigarette induced cellular damage

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Abstract

Cigarette smoking has become one of the most common addictions in context to the present scenario of tobacco consumption. Comprising of nearly 7000 chemicals, cigarette smoke have both free radicals and oxidizing agents in both smoke tar and gas phase, both of which can cause oxidative stress in human health. Long time smoking causes decreased serum immunoglobulin level but increased level of auto-antibodies. During chronic oxidative stress resulting from cigarette smoking, cells secrete mucus and increased viscosity of mucus in airways makes it susceptible to bacterial infection. Furthermore, chronic exposure of lungs to tobacco smoke causes unfolded protein response, ER stress and altered ceramide metabolism. Apart from the above mentioned facts, Cigarette smoking can also cause senescence resulting in abnormal wound healing that exaggerates pathogenesis of COPD. Although there are several management therapies available for COPD management, but the permanent cellular damages due to smoking are irreparable and results in disease exaggeration and suffering.

Keywords: Auto-immune disease, oxidative stress, ROS.

Introduction

Smoking is the practice of inhaling and exhaling smoke of tobacco. Cigarette is tobacco filled long thin paper tube. In today's society smoking cigarette is a common practice. In spite of knowing that it has many adverse effects on our body, there are about 1.3 billion smokers in our world and the number is gradually increasing. Smoking is highly addictive and it is the reason why many people do not quit smoking. Tobacco contains nicotine which causes a rush of Adrenalin, it also trigger dopamine-Brain's happy chemical. Nicotine has many harmful effects like

suppression of appetite, increases blood sugar, disruption of metabolism (Mishra et al., 2015). Separate study on male and female twins by the Medical College of Virginia and St. Louis University shows that nicotine addiction is more genetic influence than environmental influence. When people smoke cigarette about 7000 chemical enter in their body, which has severe destructive effects on body, moreover it is also found that many of its component is carcinogenic (Hecht, 1999). The chemicals of cigarette rapidly absorbed in cells and affects from internal functioning to