

Ban on Tobacco Consumption – A Right Step to improve Public Health

Recently the Union Health Ministry, Government of India banned tobacco consumption in all government or private places by introducing “Prohibition of smoking in public places rules-2008” with effect from 2nd October 2008 which is the birth day of Mahatma Gandhi. The ban includes small café, restaurants, schools, pubs or discotheques, stadium, airports, hospitals, railway and bus stations. Also, under the new rules, cigarette and bidi packs will feature either a glossy photo of infected human lungs or an X-ray plate of the chest of a man suffering from cancer. Packets of chewing and smokeless tobacco products will flaunt a graphic image of a scorpion that depicts cancer. It is well known fact that almost 250-300 million Indian including around 14.1% of school-going children consume some form of tobacco. It is really a serious public health problem. Though the tobacco usage had dropped from 52 per cent to 26 per cent in the US, in India the number had increased from 15 per cent to 26 per cent. According to the report, smoking kills an estimated 440,000 Americans each year. On average, men who smoke cut their lives short by 13.2 years, and female smokers lose 14.5 years. The economic toll exceeds \$157 billion each year in the United States - \$75 billion in direct medical costs and \$82 billion in lost productivity [1]. WHO has reported that the tobacco epidemic kills 5.4 million people a year from lung cancer, heart disease and other illness. If it is not controlled that number will increase to more than eight million a year by 2030. It was also mentioned that tobacco use is a risk factor for six of the eight leading causes of deaths in the world. As per WHO reports tobacco consumption epidemic is now rapidly shifting towards the developing world, where 80% of tobacco-related deaths may occur within a few decades. The shift is caused by a global tobacco industry marketing strategy that targets young people and adults especially women population currently who do not use tobacco in developing countries [2]. A new study has concluded that nicotine addiction can be triggered in children by passive smoking. Symptoms such as depressive moods, anxiety and difficulty in concentrating were also associated with an increased exposure to smoke in the car and home, according to a Canadian research [3]. Cigarette smoke is a complex mixture of more than 4700 chemical compounds including free radicals and oxidants. It was reported that cigarette smoke contains 10^{14} - 10^{16} free radicals / puff. Toxicity exhibited by cigarette smoke may be due to combined action of these compounds inducing many cellular processes mediated through reactive oxygen species (ROS). Major player probably nicotine as it is present in tobacco, in higher concentrations [4]. Study observed that nicotine induces ROS levels in a dose dependent manner in rat mesencephalic cells. Electro mobility shift analysis showed that nicotine activates inducible NF- κ B by binding to consensus sequence of DNA. Nicotine added to cell culture stimulates the degradation of I κ B- α subunit in 2 h. Further activation of c-Jun terminal kinase indicates that nicotine induces oxidative stress leading to activation of stress dependent NF- κ B pathway in mesencephalic cells [4]. Hence it can be clearly pointed out that cigarette smoke is a potent source of oxidative stress, DNA damage, and apoptosis for HFL-1 cells, and could be contributed to the development of pulmonary emphysema in the lungs of smokers [5]. Taking such a bold step to ban smoking in public places Union Health Ministry certainly deserves appreciation from all of us.

References:

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