

VARIOUS COMPLICATIONS OF TOBACCO (NICOTINA TABACUM) TO THE USERS IN INDIA AND ITS SOCIO ECONOMIC IMPACT

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Article Received on
24 July 2022,

Revised on 14 August 2022,
Accepted on 04 Sept. 2022

DOI: 10.20959/wjpr202213-25538

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ABSTRACT

According to modern medical science as well as in Ayurveda Tobacco is regarded as Cardiac poison. Tobacco is a most common drug abused by not only the village people but also it is often used in various modes by the urban people from ancient to present India. The tobacco hazards occur according to the doses, frequencies, health status of the users and the environment. *Nicotiana tabacum* or *tambakhu* belong to the family Solanaceae and is originally a native plant of South America. Nicot of Nismas introduced it to France from where Spanish traders took it to Philippines and reached India via China. However it is now widely cultivated all over India. The dried leaves of tobacco are used in India by almost all class of people. The

people use them either in form of smoke or snuff, or chew them with lime or alone or with beetle. The leaves are used for manufacturing cigars (cheroots) or cigarettes. Keeping in view to its toxic effect and because mass people are involved due to lack of knowledge regarding the consequence, an awareness should be created among the users. In order to renounce this drug it should be banned like other toxic drugs.

KEYWORDS: Tobacco, nicotine, cancer, cardiac arrhythmia.

INTRODUCTION

Nicotine is a stimulant drug that speeds up the messages travelling between the brain and body. It is the main psychoactive ingredient in tobacco products and so this Drug Facts page will focus on the effects of nicotine when consumed by using tobacco. Tar and carbon monoxide (a toxic gas) are also released when tobacco is burned, such as when it's smoked.

Products such as cigarettes, cigars, pipe tobacco, chewing tobacco, and wet and dry snuff and the dried leaves from the tobacco plant all contain nicotine.^[1]

Cigars, darts, durries, rollies, smokes, fags, butts, cancer sticks (the Alcohol and Drug Foundation include synonymous terms.^[3]

Gudakhu' is a paste-like tobacco preparation used widely in Orissa and neighboring states of India. During use it is rubbed over the teeth and gum with a fingertip. Besides tobacco, it contains molasses, lime, red soil and water.^[4]

India has the second highest number of tobacco users in the world with 229 million users behind China's 311 million. Nicotine acts on nicotine receptors present in autonomic ganglia, adrenal medulla, central nervous system, spinal cord, neuromuscular junction and chemo receptors of carotid and aortic bodies. Electronic cigarettes (also known as vapes) do not contain dried tobacco leaves, but they may still contain nicotine in evaporable liquid form.^[5]

Active principle

The leaves carry two active principles 1. Nicotine. 2. Nicotianine

Nicotine ($C_{10}H_{14}N_2$) is very toxic and exists in all parts of tobacco plant, but notably in the leaves which contain from 0.6 to 0.8 percent in combination with malic and citric acid. It has a burning, acrid taste and penetrating, disagreeable odor. It is soluble in lipid soluble, alcohol and ether.

Nicotianine: ($C_{10}H_{12}N_2O_4$) Nicotianine is also known as tobacco camphor and is a volatile crystalline substance. Of course it has no such importance from a medico-legal point of view.^[1]

According to Ayurveda the Sanskrit name of tobacco is *Tamraparna*, because the leaves become tamra varna (copper color) after its drying.^[3]

And the properties according to Ayurveda are^[3]

| | |
|---------------|---|
| <i>Rasa</i> | <i>Tikta, Katu</i> |
| <i>Guna</i> | <i>Laghu, Vyavayi, Vikasi</i> |
| <i>Karma</i> | <i>Kapha-vatahara, Sukrahara, Vasti sodhana and Anulomana</i> |
| <i>Virya</i> | <i>Ushna</i> |
| <i>Vipaka</i> | <i>Katu</i> |

Mode of action of Nicotine

Tobacco first stimulates and then represses the vagal and autonomic ganglia. Similarly, it first stimulates and then paralyses the cerebral and spinal centers. In smaller doses it contracts pupils but when toxicity develops it dilates them¹. Nicotine acts on nicotine receptors present in autonomic ganglia, adrenal medulla, central nervous system, spinal cord, neuromuscular junction and chemo receptors of carotid and aortic bodies.^[4]

Acute poisoning symptoms

Acute poisoning symptoms include burning and acid sensation in the mouth and throat, which spreads down the esophagus to the stomach and is followed by salivation, nausea, headache, vomiting and severe diarrhea. The breath stinks of tobacco, giddiness, faintness, numbness, muscular weakness, tremors, cold sweat, clammy skin and partial or complete unconsciousness. Hearing and vision may also be affected. There may be confusion, non-coordination. The pulse generally slows at first and then becomes very rapid. Cardiac arrhythmias may occur and blood pressure may be raised. After very large dose, the pulse may be accelerated and then slow and feeble. The respiration at first rapid and labored and after wards slow and sighing. Death occurs from respiratory failure caused by the paralysis of respiratory muscles. Sometimes there may be delirium, convulsions and areflexia. Sudden paralysis of central nervous system also may cause death.^[1]

After acute exposure, the symptoms followed a biphasic pattern. In the first phase stimulation of nicotinic cholinergic receptors results in abdominal pain, hypertension, tachycardia and tremors.

The second phase is inhibitory and the symptom includes hypotension, bradycardia and dyspnea, which finally leads to coma and death due to respiratory failure.^[1]

Chronic poisoning

Chronic poisoning symptoms are commonly seen in heavy smokers and other tobacco users and the workers who work in tobacco factories. Chronic cough, Bronchitis associated with laryngitis and pharyngitis are the common complications. Smoking reduces the ventilator efficiency and increases the risk of pulmonary emphysema. Risk of Coronary heart disease (CHD) may be twice in heavy smokers. Excessive tobacco chewing may cause the carcinoma of buccal mucosa. Chronic smokers of strong tobacco lead to tobacco amblyopia followed by optic atrophy. A rise of blood pressure may occur first and then irregular. The percentage of

lung cancer is now an established fact In heavy smokers and this is due to Polonium-210, a radioactive drug found in tobacco.^[1]

Complications

From tobacco smoking several complications can be noted such as: poor vision, anxiety and irritability, early menopause, mood stimulation, smelly hair, unhealthy teeth, dull sense of smell and taste, bronchitis, constricted blood vessels, persistent cough, COPD, Heart diseases, loss of appetite, high cholesterol, low immune system, yellow finger, lung cancer, infertility, erectile dysfunction, wrinkly skin, blood clotting, cervical cancer and increased risk of blood cancer etc. Tobacco smoke is incredibly harmful to your health. There's no safe way to smoke. Replacing your cigarette with a cigar, pipe, or hookah won't help you avoid the health risks.^[6]

Tobacco use is a major risk factor for many chronic diseases, including **cancer, lung disease, cardiovascular disease and stroke**. It is one of the major causes of death and disease in India and accounts for nearly 1.35 million deaths every year. India is also the second largest consumer and producer of tobacco.^[7]

Socio - Economic impact

Some smokers feel that they are being looked down on. As smoking rates decline, many people do not want to be exposed to other peoples' smoke and are intolerant of smoking.^[8]

Due to foul smell from their mouth as well as breathing also non users hesitate to go near or talk to them.

At beginning financial problem does not occurs generally but when a tobacco user becomes morbid seriously and a lot of money expends or if death of family head occurs in a early age and if he is the only source of income to manage his family then the economic status of that family goes ruined.

Ayurvedic treatment

- Nidanam parivarjanam- Users have to avoid the uses of tobacco in any form.
- Sodhan chikitsa according to Panchakarma therapy simultaneously proper Ayurvedic medicines according to aggravation Vatadi dosa and cardio protective drugs like arjuna, dashmool, vala, aswagandha, swarna bhasma, hirak bhasma etc.

- Yoga therapy for mental control because, many patients are addicted with nicotine. Pranayama has a significant role to control the mind.
- In order to avoid tobacco or its preparations any substitutes like salty amla, sweet saunf can be given.
- Awareness among the tobacco users is very necessary by which they can renounce their habits.

CONCLUSION

At any cost using tobacco is harmful. In any form like cigarette smoking or chewing tobacco may cause morbid symptoms and even death. The habits of using tobacco can't be treated by medicines. In this situation all family members should be awakened and particularly the person concern should be taught regarding the adverse effect and the toxicity of tobacco. Many people do not know that tobacco creates heart problem. In statutory warring in the cover of cigarette or tobacco products it is written that it causes cancerous, but in my view other complication like cardiac and other diseases should also mentioned in the cover.

REFERENCES

1. Modi. J.P. Text book book of medical jurisprudence and toxicology. 12th chapter, page – 249, Lexis Nexis publication.
2. Modi. J.P. Text book book of medical jurisprudence and toxicology. 12th chapter, page – 250, Lexis Nexis publication.
3. Sastry. J.L.N. Text book of Dravya guna vijn'an 161st chapter, page no. 869, Choukhamba Orientalia.
4. Bardele Rajesh. Forensic medicine and Toxicology, 41st Chapter. Page 500. Jaypee Brothers Medical Publishers. 2011.
5. <https://adf.org.au/drug-facts/nicotine/>.
6. <https://www.healthline.com/health/smoking/effects-on-body>
7. <https://www.who.int/india/health-topics/tobacco>