

EFFECTS OF TOBACCO CONSUMPTION ON GASTROINTESTINAL TRACT IN RELATION TO MAHASTROTASA - A REVIEW

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ABSTRACT

Mahastrotas represents a tubular tract extending from cavity of mouth to the terminal part of anal opening. Chewing of tobacco in any form for a longer time hazardously affects the GIT. Tobacco is derived from two main species *Nicotiana Tobaccum* and *Nicotiana rustica*. Tobacco contains a volatile alkaloid Nicotine which is one of the most addictive and stimulant drug. Smokeless Tobacco use has many side effects including Oral Cancer, Leucoplakia, Erythroplakia, Oral sub mucous fibrosis, loss of periodontal support and staining of teeth. In this paper I am going to review the consequences of tobacco chewing on GIT health and role of Ayurveda in their reduction.

KEYWORDS: Tobacco; Toxicity; *Mahastrotas*; Gastrointestinal Tract.

INTRODUCTION

Tobacco is one of the most common addictions found worldwide. According to Global Adult Tobacco Survey (GATS) Conducted in India in 2009 -10 among the ages of 15 yrs and above revealed that smokeless tobacco is the most common form of tobacco used. Prevalence of current smokeless tobacco use was 26% and of daily use was 21%. The average age of initiation to smokeless tobacco use was 17.9 years similar to that of smoking.^[1] In *Agadtantra* 'Visha's are classified into three types viz. *Sthavara*, *Jangam* and *Kritrima*. 'Sthavara Vishas' are those which belong to minerals or to group of poisonous herbs, while 'Jangama Vishas' are obtained from the animals. The 'Kritrima Vishas' are formed as a result of compounding of poisonous or non-poisonous substances. Ktitrim vishas are again categorized into dooshivisha ana garavisha.^[2] In India tobacco is used in variety of forms such as Chewing, Smoking, Local Application, Drinking and Gargling. Long term use of tobacco acts

as a slow poison leading to hazardous health effects such as mortality from cardiovascular diseases, cerebrovascular diseases, respiratory diseases and cancer. Addition to this deterioration of dental and oral diseases along with GIT disturbances are seen.^[3] In Ayurveda, such side effects are considered as the poisonous effects of low potent poisons known as *Gara visha*. *Gara visha* is the term used for any artificial poison or combinations of low potent poisons which may kill the person or if retained in a body for prolonged period.^[2] It may produce symptoms like Anorexia, Palpitations, Flatulence, Anemia, Malnourishment, Enlargement of abdomen etc. By virtue of its potency.^[4]

Aim: To study the effects of tobacco consumption on Gastro Intestinal Tract.

MATERIALS AND METHODS

Materials for the review will be collected from

1. Ancient Classical Texts
2. Modern literature.
3. New Researches related to this topic.

Review of literature

Gastrointestinal tract (*Mahastrotasa*)

GI tract is a series of hollow organs joined in a long, twisting tube from the mouth to anus. The hollow organs that make up the GI Tract are Mouth, Esophagus, Stomach, Small Intestine, Large Intestine, Rectum and Anus. GI Tract resembles the *Mahastrotasa* in Ayurveda.

Tobacco

Tobacco was introduced in India by Portuguese nearly 400 years ago and since then it rapidly became the part of socio cultural milieu in various communities. Tobacco is derived from two main species *Nicotiana Tobaccum* and *Nicotiana rustica*. Tobacco contains a volatile alkaloid Nicotine which is one of the most addictive and stimulant drugs. In Ayurveda tamraparna i.e. *Nicotiana Tobaccum* is included in Sthavar Vanaspatij Vishsa.

Drug Review^[5]

Tobacco

Latin name – *Nicotiana Tobacum*

Synonyms – *Tamal, Tamraparna, Gucchafala, Tambaku* etc.

Classification – Sthavar Vanaspatij Visha, Cardiac Poison.

Toxic principles – Nicotine, Nicotianamine.

Concept of *Garavisha*

Gara visha is the term used for any artificial poison or combinations of low potent poisons which may kill the person or if retained in a body for prolonged period. Concept of *Garavisha* was explained by Charaka, Susruta and Vagbhata.

Symptoms of *Garavisha*^[6] – Anemia, Malnourishment, Anorexia, Palpitations, Flatulence and Edema etc. are found in *Garavisha*. GIT disturbances, irritable bowel symptoms, fever are also important symptoms seen in *Garavisha* and most of these symptoms are also found in tobacco addicted person.

Relation between Tobacco consumption and GIT

In tobacco addicts nicotine intake is usually higher. Due to tobacco chewing Saliva is mixed with the tobacco juice and the large amount of this tobacco contaminated saliva is swallowed, thereby affecting the whole GI tract it shows following side effects.^[7]

A. Effects of tobacco on oral cavity^[8]

1. Oral Cancer
2. Erythroplakia, Leukoplakia
3. Oral Sub Mucus Fibrosis
4. Loss of Periodontal Support
5. Staining of Teeth etc.

B. Effects of tobacco on esophagus^[9]

1. Heartburn - Heartburn is a painful burning feeling in the chest due to reflux of stomach contents in esophagus.
2. GERD i.e. Gastro-esophageal Reflux Disorder is the commonest disease found in tobacco addicts.
3. Esophageal ulcers – chronic and long lasting GERD may lead to bleeding ulcers in esophagus of esophageal lumen.
4. Esophageal cancer

C. Effects of tobacco on stomach^[9]

Peptic ulcers

Tobacco Increases - The production of substances that harm the lining of stomach like pepsin.

Tobacco Decreases

1. Blood flow of lining
2. Secretions of mucus – a clear liquid that protects lining.
3. Production of sodium bicarbonates – A salt like substance that neutralizes acid by pancreas.

This increase in substances that may harm the lining of stomach and decrease in factors that protect or heal the lining may lead the peptic ulcer.

D. Effects of tobacco on Intestines^[9]

1. Intestinal Inflammation
2. Irritable bowel syndrome
3. Crohn's disease
4. Ulcerative colitis
5. Colorectal carcinoma

DISCUSSION

Tobacco use is more popular in lower socio economic groups. In a cross sectional study done in 130000 construction workers, tobacco users reported GIT disturbances more often than non tobacco users.^[10] It has been shown in studies in patients and in population based studies that tobacco is the risk factor for GIT disorders. Doctors should look after tobacco consumption as one of the important *Hetu* i.e. causative factor for GIT disorders. In Ayurveda we can correlate tobacco consumption for long time as a *Garavish sevan* and *Garvishnashak Chikitsa* along with *Doshdushya* and *Vyadhi Vichar* may give us better results in management of most of the GIT disorders caused due to tobacco consumption.

RESULTS

Tobacco consumption in India is continuing day by day despite of tobacco control policies. Despite all these efforts tobacco consumption is a major health issue globally. In India nearly 1/3 of population use tobacco. For preventing the devastating effects of tobacco, tobacco control policies need to be strictly implemented and for better implication of policies culture

based strategies need to be devised. In Ayurveda Formulations in the form of dietary supplements or medications can reduce the side effects caused by tobacco consumption.

CONCLUSION

According to studies no matter in which form you consume the Tobacco, It is dangerous to our health and affects the entire body. A proper awareness education, Counseling and Ayurveda can stop or reduce the use of Tobacco.

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