



ORIGINAL RESEARCH PAPER

Ayurveda

A LITERARY REVIEW ON EFFECTS OF GUTHAKA - AS A GARVISHA

KEY WORDS: *Guthaka*, *Garvisha*, tobacco, betel nuts, *Visha* etc.

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ABSTRACT

Tobacco is the most prevalent and preventable cause of disease and death. *Guthaka* is a composition of tobacco, betel nuts, catechu, lime, permitted spices and flavors. *Guthaka* also contains numerous toxic chemicals having adverse effects varying from minor throat irritation to Carcinogenesis. As *Guthaka* contains above material it acts as a slow poison or *Garvisha* which is described in Ayurveda. The toxic combination of two or more substances is called '*Garvisha*'. This combination includes two types of substances i.e. non-poisonous or poisonous which exerts toxic effect after interval of some time and such does not kill patient instantly. *Guthaka* is a composition of *Savisha* (poisonous) and *Nirvisha* (non-poisonous) substances. It acts as a slow poison. It shows hazardous effects on human body. As mentioned in different Ayurvedic texts, the combination of above non-poisonous or poisonous substances are called as a *Garvisha*. The symptoms like *Panduta*, *Mandagni*, *Kasa*, *Pratiloma Vayu* particularly *Apana Vayu*, *Anidra*, *Adhman*, indications of liver and spleen enlargement, *Durbalata*, *Alasya* and *Shotha* are observed due to the *Garvishaa*. All these symptoms are also observed in habitual *Guthaka* chewers.

Although modern science researcher was found to be worked on the subjects related to *Guthaka*. But as a whole, in combination as present in *Guthaka* no one really focuses on their actions in human beings in Ayurvedic manner i.e. *Dosha*, *Dhatu*, *Mala*, *Agni*, *Strotas*, *Indriya*, *Avayava*, *Mana*, *Bala* etc. The adverse effects of *Guthaka* and symptoms of *Garvisha* are same.

INTRODUCTION

Ayurveda is an ancient science of life. Ayurveda is the only science which gives the idea about the maintenance of the health of the healthy person and solutions for the diseased person simultaneously. स्वस्थस्य स्वास्थ्य रक्षणम् आतुरस्य व्याधिपरीमोक्षः । सु. सू. १ In this motto of the Ayurveda first stanza is very much important i.e. maintenance of health in healthy person. For that proper lifestyle and daily regimen along with healthy diet is must. In *Charak Samhita*, *Annapanvidhiadhyayam* and *Vividhashatipitiyadhyayam* has described for that. Different types of diseases due to improper diet, regimen and treatment has also mentioned in Ayurvedic texts. While mentioning the treatment with different *Dravyas* the ancient Acharyas also told the harmful effects of them on human body.

There are nearly 1.3 billion tobacco users in the world as per the World Health Organization (WHO). Tobacco products kill about eight million people every year, taking a life every 4 seconds. People from all the age groups, teenagers, youngsters, middle aged and older peoples are under this bad addiction. The females are also more addicted to *Guthaka*. The peoples from higher socioeconomic status to the lower socioeconomic status, school going children to college students, police officers to the pick picketers, Govt. officers to the peons, medical, paramedical and hospital staff, doctors, engineers, teaching and non-teaching staff in educational well as medical institutes, all are under this bad addiction.

Every addiction has hazardous effects on human body. *Guthaka* is also having injurious effects on human body. For example, oral mucosal disorders, oral sub-mucous fibrosis (OSMF) & carcinogenic effects of oral cavity (head & neck cancers). Long term use of *Guthaka* affects general health leading to loss of appetite, loss of concentration, unusual sleep patterns, anemia, cardiovascular disease (CVD), stroke etc.

As per origin, there are two types of '*Vishas*', *Jangam Visha* and *Sthavara Visha*. There is a type called '*Sanyogaj Visha*' also known as '*Garvisha*'. '*Gara*' is a toxic combination of substances i.e. non-poisonous or poisonous which exerts

toxic effects, after interval of some period of time and as such does not kill the patient instantly.

Due to *Garvisha* the person becomes pale, emaciated and with poor digestion and suffers from hypertrophy and dilation of heart. Edema in hands and feet. The patient cannot sleep well and his nature become worried and anxious. The patient shows indication of *Udarroga*, *Yakruta* and *Pleeha Vridhhi* (liver and spleen enlargement). His speech becomes very slow. He becomes lazy. He dreams about the cats, elephants, monkeys, empty pond, dried trees etc. He feels that he is black when he is fair and vice versa. By effects of *Garvisha* his all the *Indriyas* get destroyed and he feels that he has no ears, nose, eyes etc.

So we can say that the effects of *Guthaka* are similar to the effects of *Garvisha* described in *Ayurveda*.

GARAVISHA -

The *Nirukti* of *Visha* is as follows :- विषलूव्यामो (जु.उ.अ.) + क प्रत्यय

It means that the substances which spread very quickly in the body. In *Ayurveda* it is stated that the *Visha* has originated during the *Samudra Manthan*. Hence it has *Ambu Yoni* i.e. derived from '*Jala Tatwa*'. While the ocean was being churned by gods and demons for nectar a human form fierce-looking, brilliant with four large teeth, brown hairs and the fiery eyes appeared before the origin of nectar. As the creatures got afflicted to see him, he was named as *Visha* (Poison).

According to Modern sciences poison is commonly defined as a substance which when administered, inhaled or swallowed is capable of acting deleterious on the body. This almost everything is a poison. There is really no boundary between a medicine and a poison, for a medicine in a toxic dose is a poison and poison in a small dose, may be medicine. There are two types of '*Vishas*', *Jangam Visha* and *Sthavara Visha*. There is a type called '*Sanyogaj Visha*' also known as '*Garvisha*'.

Effects of Garvisha -

तैः स्यात् पाण्डुः कृशोऽल्पान्निर्गन्धश्चोपजायते ।
मर्मप्रधमनाध्मानं श्वथुं हस्तपादयोः । ।
जठरं ग्रहणीदोशो यस्मा गुल्मः श्वयो ज्वरः ।

एवविधस्या चान्यस्य व्याधेर्लौगानि दर्शयेत् |
स्वप्ने मार्जारगोमायुव्यालान सनकुलान कपीन |
प्रायः पश्यति नद्यादीच्छुष्कांश्च सवनस्पतीन् |
कालश्च गौरमात्मानं स्वप्ने गौरश्च कालकम् |
विकर्णनासिकं वाऽपि प्रपश्यद्विहतेन्द्रियः |

च. वि. 23 / 234 - 237

Due to *Garvisha* the person becomes pale, emaciated and with poor digestion and suffers from hypertrophy and dilation of heart. Edema in hands and feet. The patient won't sleep and he is always worried. The patient shows indication of *Udar*, *Yakruta* and *Pleea Vriddhi*. His speech is very slow. He becomes lazy. He dream the cats, elephants, monkeys, empty pond, dried trees etc. He feels that he is black when he is fair and vice versa. By effects of *Garvisha* his all the *Indriyas* get destroyed and he feels that he has no ears, nose, eyes etc.

Another references about the effects of *Garvisha* from *Ashtanga Hridaya* are...

तेन पाण्डूः कृशोऽल्पान्निःकासश्वासज्वरादितः |

वायुना प्रतिलोमेन स्वप्नचिन्तापरायणः |

महोदरयकृत्स्नीहोदीनवाग् दुर्बलोऽलसः |

शोफवान् सतताध्मातः शुष्कपादकरः क्षयी |

स्वप्ने गोमायुमार्जारनकुलव्यालवानरान् |

प्रायः पश्यति शुष्कांश्च वनस्पतिजलाशयान् |

मन्यते कृष्णामात्मानं गौरं च कालकः |

विकर्णनासानयनं पश्येत्तद्विहतेन्द्रियः | अ. ह. उ. 35 / 50 - 53

Accordingly the following signs and symptoms are observed due to the '*Garvishaa*'.

- 1) *Panduta*
- 2) *Mandagni*
- 3) *Kasa*
- 4) *Shwasa*
- 5) *Jwara*
- 6) *Pratiloma Vayu*
- 7) *Anidra*
- 8) *Adhmana*
- 9) *Pleea and Yakrut Vriddhi*
- 10) *Durbalata*
- 11) *Alasya*
- 12) *Shotha*

Tobacco is the most prevalent and preventable cause of diseases and death. Tobacco chewing is associated with higher incidence of squamous cell carcinoma of hard palate. Another habit prevalent in Indian status of Uttar Pradesh, Bihar, and Maharashtra is chewing of *Guthaka* for long and hour which is a major cause of cancer of upper aero digestive tract and oral cavity.

Guthaka is a composition of tobacco, betel nuts, catechu, lime permitted species and flavors. *Guthaka* also contains numerous toxic chemicals having adverse effects varying from minor throat irritation to carcinogenic effect. Beside these *Guthaka* chewers suffer higher risk of development of a few other cancers such as cancer upper aero digestive tract, cancer of lungs, cancer of pancreas, cancer of kidneys and cancer of urinary bladder. Hence according to modern science *Guthaka* shows toxic effects on human beings.

As *Guthaka* contains toxic & non toxic material it acts as slow poison or *Garvisha* which is described in Ayurveda.

गरसंयोगजं चान्यद् गरसंज्ञां गदप्रदम् |

कालांतरविपाकीत्वान्न तदाशु हरत्यसून ॥ च. वि. 23/14

The substances like *Guthaka*, Narcotics to which people are usually addicted to all under the category of *Garvisha*.

- All of these are artificially processed and combined. (गरसंयोगजं)
- Slow poisons. (कालांतरविपाकी)
- And cause a range of *Vyadhi*. (गदप्रदम्)

- Hence *Guthaka* is one of such '*GARVISHAA*'.

Guthaka -

The oral use of chewing tobacco has greatly increased in recent years. Use of chewing tobacco is extremely popular in India, Far East and Middle East countries. In some of these countries, these chewing tobaccos are mixed with Areca Nut, Catechu, Lime, Permitted Spices and Flavors and sold as a *GUTHAKA* or *PAN MASALA*. Now days it is also called as *Supari* mix. The manufacturing of *Guthaka* is very simple. It is combination of

Composition of GUTHAKA

- 1) Tobacco (*Tamraparni*) - Nicotina tobacum.
- 2) *Supari (Kramuk)* - Areca catechu
- 3) *Kattha (Khadir)* - Acacia catechu
- 4) Lime (slaked lime) - Ca(OH)₂.
- 5) Permitted spices and flavors - Saffron, *Ela* etc.

Various brands of *GUTHAKA* are available in the market. Some of them are '*MANIKCHAND*', '*GOA*', '*STAR*', '*PAN PARAG*', '*SIR*', '*FIRE*', '*ZEE*', '*RAJA RANI*', '*MARUTI*', '*PARIWAR*' 135 *MAVA* etc. Their trade names are different but the composition is same. It contains *Tamraparni*, betel nuts, catechu, lime, permitted spices and flavors. Some of them are saffron blended and containing magnesium carbonate.

The following mild symptoms are frequently observed when *Guthaka* is chewed for first time.

- 1) Dizziness
- 2) Nausea
- 3) Vomiting
- 4) Headache
- 5) General Weakness
- 6) Perspiration and cardiac irregularities with increased pulse.

The chronic symptoms may result from the continued used of *Guthaka* by chewing are chronic cough, bronchitis, stomatitis, kochs etc. In the habitual chewer there may be amblyopia, narrowing of the field of vision, some blurring and rarely blindness. Habitual *Guthaka* chewers are reported to lead to Tobacco Heart, a condition characterized by irregularity, extra systole and occasionally attacks of pain suggesting Angina Pectoris.

Effects of Tobacco -

Tobacco is the leaf of the tobacco plant (*Nicotina Tobacum*, Family-Solanaceae). The dried leaves constituents the ordinary tobacco used for chewing and to prepare *Guthaka*.

Tobacco contains several pyridine alkaloids of which Nicotine is the most important (B- Pyridis-O-N-methyl pyrarolidine). The total alkaloid contains is about 6%. Nicotine is the active principle in the tobacco. Nicotine is a colorless liquid which turns brown on exposure to air and acquires a characteristics tobacco odor. It has a sharp, burning taste. It is miscible with water in all preparations at temperatures below 60 degree and 210 degree but is less soluble between these temperatures. It is easily volatilized with steam and on oxidation yields nicotinic acid. Nicotine first stimulates, then depresses and paralyses the cells of the peripheral autonomic ganglia, brain (especially mid brain) and spinal cord. Skeletal muscles, including the diaphragm are paralyzed. Nicotine exerts stimulant effect on heart and nervous system. It is powerful quick acting poison. Even 40 mg dose orally is fatal to humans.

Physiological Effect

Tobacco acts as a local irritant. On chewing it irritates the mucous membrane of the mouth and increases the flow of saliva. In large doses or in person not used to it, tobacco produces severe nausea, sometimes vomiting, accompanied with profuse perspiration and great muscular weakness.

The pharmacological activity of tobacco is due to almost entirely to its content of nicotine which is a powerful and rapidly acting poison. Toxic dose of nicotine produces extreme nausea, vomiting, evacuation of bowel and bladder, muscular tremors and convulsions, 40 mg orally taken has been fatal for human beings. The dominant physiological action of nicotine is exerted on the autonomic ganglia and certain medullar centers, and especially the emetic centre and the respiratory centers which are by small doses primary stimulated and by large doses secondarily depressed.

The primary stimulation induces a transient rise in the blood pressure, slowing of the heart, deeper respiration and increase in salivary and other secretions, with secondary depression, there occurs fall in the blood pressure, rapid pulse, irregular respiration. With fatal doses death occurs usually due to cessation of the respiration through paralysis of phrenic nerve.

The effect of nicotine on heart rate, blood pressure and vasoconstriction are however evanescent in character and subside within 10 – 30 minutes. Among the several hundred constituents identified in the tobacco potent carcinogen 3 – 4 Benz pyrene and a number of other carcinogens of the same class of polycyclic aromatic hydrocarbons, they are however present in traces and it is uncertain if such minute concentrations would be harmful. It has been recently shown that tobacco also contains substances known as co – carcinogens or tumor promoters which acting with a carcinogen and increase its potency.

Over 200 compounds have been identified in tobacco leaf. Total organic constituent's amount to 75.9% (moisture free basis) and comprise alkaloids and other nitrogenous substances, carbohydrates and organic acids, poly phenol and pigments, oils and resins, enzymes and others.

Effects of Kramuka (Areca Nuts / Betel Nut) –

Areca nut is extensively used as masticator throughout India. It is generally chewed along with *Guthaka* or *Pan*, a little slaked lime to which *Kattha*, spices and tobacco are same time added. Chewing of it develops salivation and the saliva is colored red.

Its continued use blackens and loosen teethes. The constant irritation of mucous membrane of the mouth sometimes results in oral carcinoma. The fresh nuts have intoxicating properties and produces giddiness. Chewing of betel nut in man often produces palpitations, sweating facial flushing and warm sensation in the body. Acute myocardial infarction temporally related to betel nut chewing. Alkaloid in betel nut such as Arecoline may play a contributing role in coronary artery spasm due to parasympathomymetic effects on vessels with abnormal endothelium. Chewing betel nut may instantly induce a high concentration of Arecoline in the circulation and do harm to a chewer with a history of coronary artery disease. Hence, it is stated that betel chewing affects cardiovascular function in habitual chewers. Betel nut chewing also causes bronchoconstriction in some asthma patients.

Betel chewing a habit common to about 10% of the world population may contribute to the risk of developing type 2 Diabetes Mellitus. Hence it is stated that betel chewing was independently associated with Diabetes and may therefore a risk factor for Diabetes Mellitus.

Millions of people with Schizophrenia live in betel chewing region; the effect of betel chewing on their symptoms are unknown. Betel nut alkaloids include potent Muscatine and colinomymetics, recent researcher suggests that these agents may be therapeutic in Schizophrenia.

Unvaried analysis revealed that adverse pregnancy

outcomes were associated with maternal betel quid chewing, maternal illness during pregnancy and the number of pregnancies (gravidity) experienced. The prevalence of adverse pregnancy outcomes was computed to be higher among betel quid chewing women as compared to non chewers.

Kattha (Khadira) – Acacia catechu

The word catechu is used for different varieties of commonly known substance *Kattha* in market. In reality there are two distinct varieties which constitute *Kattha* and cutch of the pharmacopoeias quality. A pale produce, rich in Catechin is *Kattha* and the other rich in Catechutaminic acid is the Cutch.

There is very large internal demand for it, for use in *Guthaka* and *Pan* preparations. It is and indispensable ingredient of *Guthaka* and *Pan* preparations, in combination with lime; it gives characteristics red coloration, resulting from the chewing of *Guthaka* or *Pan*. Continued used however is said to cause blackening of teeth which is described as *Shyavdanta* in *Ayurved*. It is also associated with oral cancers.

Lime (slaked lime) - Ca(OH)₂

This is obtained by adding water to calcium oxide (CaO) quicklime. It is a white amorphous powder, slightly soluble in cold water and less soluble in hot water. It dissolves freely in solutions of glycerin and of sugars. Lime slaked or unslaked acts as a caustic, when used externally and acts as corrosive poison, when taken in a large quantity. This action is due to the alkaline nature.

The following symptoms are observed by calcium hydroxide poisoning.

Sever burning pain in the throat and stomach, nausea, clammy skin, rapid feeble pulse, collapse and death within 24 hours.

Hence *Guthaka* can be stated as **GARVISHA** and it is a combination of....

- **Visha Dravya (Tamraparni)**
- **Vikasi Dravya (Kramuk)**
- **Nirvisha Dravya (Khadira)**

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