

SAFEGUARDING ORAL CANCER WITH AYURVEDA: A REVIEW

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ABSTRACT

Introduction: Oral cancer is becoming an alarming condition globally. Its ranking stands among the first ten common carcinomas around the world. Approximately 90% of the total oral malignancies are squamous cell carcinomas. The underlying causes can be linked with tobacco intake, smoking, smokeless tobacco (snuff or chewing tobacco), alcohol, Human Papilloma Virus (HPV). The treatment measures for oral cancer are very costly and affordability is very low. Hence, taking preventive measures at first place becomes of utmost importance. Ayurveda's holistic approach could be a ray of hope in either prevention or prolonging the symptoms of Oral cancer. Certain *Ayurvedic* modalities like *Dantadhawan*, *Jinvha Nirlekhana*, *Kaval*, *Gandush*, *Pratisarana* along with supportive *Pranayama* like *Sheetali*, *Sitkari* and treatments like *Rasayana* therapies could safeguard Oral cancer and its metastasis. **Aim and Objective:** To study the role of Ayurveda in prevention of Oral cancer. **Material and Methods:** All literature related to Oral cancer and its *Ayurvedic* preventive aspects is compiled from Ayurveda textbooks, internet, articles, scientific journals. **Conclusion** – Role of different *Ayurvedic* preventive measures could be helpful in safeguarding Oral cancer.

KEYWORDS: Ayurveda, Oral cancer, Prevention.**INTRODUCTION**

Oral cancer is one of the most prevalent cancers all over the world. It is one of the top 10 most common causes of death. About eighty percent of oral/oropharyngeal malignancies worldwide are squamous cell carcinomas arising in the mucous membrane. Oral cancer is a disease of old age. About 95% of cases occur in people older than 40 years. The majority of oral carcinomas involve the oropharynx, tongue and floor of mouth. The least common sites are lips, palate and gingiva.^[1]

Etiology and Risk factors of Oral Cancer

Tobacco and alcohol use are the most serious contributing risk factors in development of oral cancer. Other than these, physical irritants, environmental factors like exposure to radiation, natural carcinogenic agents, industrial pollutants, chemical irritants, viral infections, hormonal effects, malnutrition etc. increase the risk of development of cancer. The persons who have history of cancer are at high risk of developing a second oropharyngeal cancer. Nicotine in tobacco is a strong addicting chemical which is associated with increased incidence of malignant lesions; while alcohol causes dehydration of mucosa which cause an increase in mucosal permeability.^[2]

Clinical features

Oral squamous cell carcinoma in the initial stages is mostly asymptomatic. The patients know about the disease only after the appearance of symptoms with progression of disease. Commonest symptom include discomfort. Other symptoms include – a mass in mouth or neck, Dysphagia, Otagia, Oral bleeding and limited movement may also occur.

The high-risk areas like buccal mucosa, tongue, floor of mouth and hard and soft palate should be carefully examined for tissue changes like red, white or mixed red and white lesion, smooth, granular or rough lesion or the presence of ulceration. The initial lesion is flat or raised and ulcerated or non-ulcerated, and may be palpable or indurated. Lesions present on tongue can affect normal functioning like speech, mastication and deglutition.^[3]

Normally, oral carcinoma is painless unless it gets traumatized or secondarily infected. Involvement of lymph nodes depends upon the stage of the tumor, so cervical and submandibular lymph nodes should be examined carefully.

In order to overcome or prolong these symptoms, or their severity, certain *Ayurvedic* measures could be of great importance. Various modalities like *Dantadhawan*,

Jinvha Nirlekhana, Kawal, Gandush, Pratisarana along with supportive Pranayama like Sheetali, Sitkari and treatments like Rasayana therapies could safeguard Oral cancer and its metastasis.

METHODS AND MATERIALS

Safeguarding measures – Oral hygiene is inevitable for the maintenance of proper health.

The daily regimen has been described by *Acharya Vagbhata* in the Chapter named ‘*Dinacharya*’ for the maintenance of life. Following some of these modalities regarding Oral health like *Dantadhavana, Jinvhanirlekhana, Kavala, Gandusha* along with Pranayama could provide a preventive regimen in Oral Cancer.

1) **Dantadhavana** (Brushing of teeth) – Ancient *Acharyas* have mentioned the natural herbal technique of brushing teeth. After analyzing for a while about one's own body and being clean after evacuation of excreta, oral hygiene should be attended, by cleaning teeth with herbal brushes of 12 *angulas* (approximately 9 inches) in length and diameter of the tip of one's little finger. The sharp edges should be crushed and made soft before use. Plants used should be either of *kashaya* (astringent), *katu* (acid) or *tikta* (bitter) *rasas* (tastes) like *Arka* (*Calotropis gigantea*), *Nyagrodha* (*Ficus benghalensis*), *Khadira* (*Acacia catechu*), *Karanja* (*Pongamia pinnata*), *Kakubha* (*Terminalia arjuna*) etc. [Plants or materials belonging to other *rasas* as *madhura*, *lavana*, and *amla* are not advised by *Vagbhata*]. The teeth may be brushed after every meal. While brushing, care should be taken not to hurt the gums.^[4]

Benefits - *Acharya Charak* states that – Brushing of teeth helps to eliminate bad odour, ability to perceive taste, removes sludge deposited over teeth and tongue, improves taste. [Charaka Samhita Sutrasthan 5/72]

Contraindications - Brushing of teeth is contraindicated for those who are suffering from *Ajirna* (indigestion), *Vamathu* (vomiting), *Shwas* (dyspnoea, asthma), *Kasa* (cough), *Jvara* (fever), *Ardita* (facial palsy), *Pipasa* (thirst), *Asyapaka* (stomatitis), *Hridroga* (cardiac disorders), *Netraroga* (eye diseases), *Siroroga* (diseases affecting head), and *Karnaroga* (ear diseases).

2) **Jinvhanirlekhana** (Tongue Scrapping) – It is described as an act of scraping of tongue. After brushing the teeth, the tongue should be cleansed. Few authors suggest that it should be done before brushing the teeth, while others say the opposite. Nonetheless, it should be done. Ayurveda recommends gold (for *Vata* body type), silver (for *Pitta* body type), copper (for *Kapha* body type), Stainless steel scraper (neutral body type), or

branches of certain trees for scrapping of tongue. It should have 10 *Angula* (10 finger) length. It should be curved, soft and smooth with rounded edges so that it doesn't damage the tongue.^[5]

Master Indu in the commentary on Ashtanga Sangraha recommends the same twig that is used for *Dantadhavana*. All the twigs that are recommended by Master Indu are *Kapha Dosha* reducing (*Kapha hara*), wound cleansing (*Vrana Shodhaka*) and anti-septic (*Krimi hara*).

According to Ancient Acharyas

Benefits - It helps remove the tongue coating, along with healing of mouth sore and reducing Oral infections. Prevents *Mukha Dourgandhya* (halitosis) or bad breath, Helps in *Vairasya* (Altered taste in mouth), *Aruchi* (Tastelessness), Increases *Jatharagni*.

3) **Gandush (Oil Pulling)** – In Ayurveda, *Gandusha* (Oil pulling) and *Kavala* (Gargling) are the procedures described in *Dinacharya*.

Filling the mouth in the morning with oil or medicated water daily and holding for a few minutes without moving it inside the oral cavity is called *Gandusha* (Oil pulling). A *Gandusha* is to be held inside the oral cavity till there is uncontrollable salivation, secretions of tears from the eyes or mucous/watery discharge through the nose.^[6] Ayurveda states the benefits that -

Benefits- Prevent decay, oral mal odor, gum bleeding, dryness of throat, cracked lips and for strengthening the teeth, gums and the jaw, provides lubrication in mucosal lining.

It is a simple daily regimen, which, when done routinely, enhances the senses, brings about a feeling of freshness and maintains clarity in the voice. After adopting this procedure properly, one feels lightness and clarity in the mouth. It also relieves pain and discomfort.

4) **Kavala (Gargling)** - *Kavala* is a procedure of holding comparatively small quantity of liquid or semisolid in the mouth; make it move briskly inside and spitting out quickly. Decoction of *Khadira* (*Acacia catechu* L.) or *Kshirivrikshas* like *Nyagrodha* (*Ficus bengalensis* L.), *Udumbara* (*Ficus glomerulata* Roxb.), etc. may be used daily for *Kavala*.

Benefits – It removes loss of appetite, bad taste, dirt and excess salivation from the mouth.

Kavala and *Gandusha* can be done in four ways.

1. *Snaihika* to lubricate – best for *Vata Dosha*. This is done with oil such as black seed sesame oil, ghee or coconut oil. Milk or water in which sesame seed paste is mixed is also recommended.
2. *Shamana* (to mitigate) – best for *Pitta* dosha. Decoctions of bitter, astringent and sweet drugs that are cold in potency are used along with honey or

ghee. This is done for oral ulcers burning sensation in the mouth and upper respiratory infections.

3. *Shodhana* (purification) – best for *Kapha Dosha*. This is done with pungent sour and heating substances. It will remove a bad taste, bad smell and dirt from the mouth. Warm water with ginger and honey can be used. This is also useful in upper respiratory infections. *Triphala kashayam* with honey is suitable for this.
4. *Ropana* (healing) – best in ulcers and stomatitis. This is done with astringent and bitter drugs along with a fatty substance. This is very beneficial to heal ulcers.^[7]

Gargling with oil removes bad taste, bad smells, inflammation and feelings of numbness in the mouth and is pleasant, strengthens the teeth and promotes the natural affinity for food.^[8]

(Susruta Samhita Chi 24:1)

- 5) *Pratisarana* – Applying medicated pastes or powders over teeth and gums and then massaging them is known as ‘*Pratisarana*.’ In *Pratisarana*, *Choorna* (fine powder) is mixed with lukewarm water to make a paste; the paste is taken on a fingertip and then massaged on the gums with mechanical pressure exerted in a specific direction.

Pratisarana is of 3 kinds – in the form of *Kalka* (paste), *rasakriya* (solidified decoction), *choorna* (Powder). It should be done in oral diseases of *Kapha* origin.^[9]

Acharya Vagbhata states

Benefits - This process removes the food debris and plaque, which are the main causative factors of the disease. Further, *Pratisarana* helps to increase blood circulation and enhances gingival defense mechanism, giving strength to the gingival fibers to maintain the gingival, and the periodontal health.

6) Shitali Pranayama (Break-Tongue Pranayama)

Procedure – a) Fold up the sides of the partially protruded tongue so as to form a long narrow tube resembling the beak of a bird. The passage is further narrowed by pressing the lips round the tongue. Inhale, making a hissing noise and perceive the cooling effect of the air as it passes through the tongue.

- b) Allow the breath to be stopped effortlessly. Exhale through both nostrils.
- c) Then allow the breath to be held comfortably before the next inhalation. Repeat the cycle.

7) Sitkari Pranayama (Suck-through-teeth Pranayama)

Procedure – a) Press the upper teeth on the lower ones. Suck in air through the crevices of the teeth slowly and continuously.

- b) Allow the breath to stop automatically. Exhale through both nostrils.
- c) Hold the breath comfortably for a while before the next inhalation. Repeat the cycle.

Benefits- The above *Shitali* and *Sitkari Pranayamas* are called Cooling *Pranayamas*. Because of their cooling effect, they help in pacifying *Pitta Dosha*, calms down the mind by removing mental tension. They increase the resistance of respiratory system. Helpful in gum infections or diseases, strengthens teeth and makes them get more securely attached to the jaws. *Sitkari* is especially useful for persons suffering from Pyorrhoea and Hypersensitivity of gums.^[10]

8) Rasayana Therapy

Rasayana or rejuvenation is a traditional *Ayurvedic* therapy to restore the body's vitality to its fullest capacity. It is a therapeutic procedure which uses herb, food, or activity to restore youthfulness and cure disease. If appropriately taken, *Rasayana* keeps one fit both physically and mentally for many years. In ancient India, people who used this therapy lived over a hundred years.

In cancer, *Rasayana* could act as a preventive aspect, also as a rejuvenation therapy during or post chemotherapy.

Ayurveda states various benefits of *Rasayana* from classical texts -

Benefits- Cancer causes multiplication of cells thereby increasing its metastasis. *Rasayana* therapy if taken as a precautionary measure could be helpful in nourishment and rejuvenation of the cells.

Other than this, *Rasayana* makes you feel young and energetic, improves skin condition and glow, improves sleep quality, memory and concentration, clears the voice, improves the capacities of the sense organs – eyes, nose, tongue, ears and sexual organs. It increases the body's immunity to resist any common diseases and last but not least, it improves the body's strength and brings calmness to mind.

Herbal drugs offer an alternative to synthetic compounds and are considered either nontoxic or less toxic.^[11] Studies carried out in the past 2 decades have shown that some of the classical Indian *Ayurvedic* drugs (*Amritaprasham*, *Ashwagandha Rasayana*, *Brahma Rasayana*, *Chyavanprasha*, *Narasimha Rasayana*, and *Triphala Churna*) possess radioprotective effects.^[12-15]

In view of reducing the dangerous adverse effects of chemotherapy, a study has been done on *Rasayana Avaleha* — an *Ayurvedic* preparation — as adjuvant to allopathic chemotherapy. The herbal preparation comprises of *Amalaki* (*Emblca officinalis*), *Ashwagandha* (*Withania somnifera*), *Guduchi* (*Tinospora cordifolia*), *Yashtimadhu* (*Glycyrrhiza glabra*), *Jivanti* (*Leptadenia reticulata*), *Tulasi* (*Ocimum sanctum*), and *Pippali* (*Piper longum*). All these herbs have been extensively researched for their various rejuvenative properties at the clinical and experimental levels.^[16]

RESULT

The above modalities explain their importance and benefits in Oral Hygiene. These 'Dinacharyokta' modalities along with *Pranayama* and *Rasayana* Therapy could result in lowering the risk factors of Oral cancer among people who are not exposed to any of the underlying causes of Oral cancer. These modalities might also extend the timespan of occurrence of Oral cancer symptoms by controlling further metastasis in people exposed to the underlying causes. In general, they play role in maintaining Oral health in individuals thereby safeguarding Oral cancer with *Ayurvedic* concepts.

DISCUSSION

Oral Cancer is among the first 10 cancers spreading drastically all over the world. The most common underlying causes include Tobacco and alcohol intake. Sometimes, the symptoms of Oral cancer might be visible inspite of the above causes. Due to lack of assurity of recovery, high treatment expenses, exposure to chemotherapy, the patient deteriorates faster. Some of the *Ayurvedic* modalities could be useful in order to avoid this cancerous incidence or prolong the symptoms along with metastasis. These day-to-day precautionary measures along with *Pranayama* and *Rasayana* therapy for a long period, could safeguard the Oral Cancer.

CONCLUSION

'Dinacharya', an *Ayurvedic* concept revolving around the daily activities is suggested to be carried out for healthy well-being. Performing some of these modalities like *Dantadhavana*, *Jinvhanirlekhana*, *Pratisarana*, *Kavala*, *Gandusha*, could result in promotion of Oral health thereby reducing the chances of cancerous metastasis. Scientific studies carried in recent past years have shown that *Rasayanas* are observed to possess immunomodulating effects and unlike the conventional agents, it activates immune system without altering other basic parameters of body. These *Rasayana* drugs are of use in the treatment, prevention, and improvement of the quality of life of both healthy and diseased individuals, and their regular consumption may benefit humans against other age-related diseases and ailments. Most of these *Rasayanas* can be used regularly as a food for maintaining balanced mental and physical health. They may be used either alone or along with other modalities of treatment as an adjuvant. Their free radical scavenging, antioxidant, anti-inflammatory chemoprotective, chemopreventive, and immunomodulatory effects will also be of immense use in maintaining a healthy lifestyle and a disease-free life.

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