

ROLE OF YASTIMADHU GHRITA PRATISARANA IN MANAGEMENT OF ORAL CANCER

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ABSTRACT

Oral cancer is the Sixth most common malignancy in the world. According to World Health Organization there are an estimated 6, 57,000 new cases of cancers of the oral cavity and pharynx each year, and more than 3, 33,000 deaths. The prevalent oral habits of use tobacco products like Cigarette, Pan masala, excessive intake of alcoholic beverages, poor oral hygiene, prolonged focal irritation from teeth and dentures, HPV (human papilloma virus) infection. One of the very common side effects of Radiation/Chemotherapy especially of the head and neck malignancies is mucositis, which makes eating difficult. According to *Ayurveda*, 65 varieties of oral diseases can arise in seven anatomic locations. *Ayurveda* recommends some daily use therapeutic

procedures for the prevention of and maintenance of oral health. These include: *Pratisarana*, *Dhavani* (Brushing), *Jivha Lekhana* (Tongue scrapping) and *Gandoosha* (gargling) or oil pulling and tissue regeneration therapies. Some of the scientifically proven beneficial effects of these procedures are *Pratisarana* with *Yashtimadhu Ghrita* significantly reduced intensity of radiation and chemotherapy induced mucositis. *Yastimadhu* has *madhura rasa*, *sheeta virya*, *madhura vipaka* and is *vata-pitta shamaka* property. *Yastimadhu* has *vrana shodhana* and *vrana ropana* properties that help for healing of the wound of oral cancer. *Ghritha* has a soothing property and form a thin film layer over them and that allows early epithelialization of wound. *Yastimadhu* is anti-ulcerogenic and anti-inflammatory in property. Licochalcone A is a flavonoid found in liquorice root (*Glycyrrhiza glabra*). It is known for anti-microbial activity and reported ability to inhibit cancer cell proliferation. Glycyrrhetic acid has proved to have anti-inflammatory effect similar to glucocorticoid and mineralocorticoids.

KEYWORDS: Licochalcone A, *Vrana*, Mucositis, Regeneration.

1. INTRODUCTION

Cancer is the growth of cell which grows in an uncontrolled and unwanted manner to disturb the healthy body parts. Why the cells start growing abnormally is a question still unanswered, in *Ayurveda* it mentioned as “*Arbuda*”. *Arbuda* denotes a serpent like demon or a long rounded mass of swelling. In *Ayurveda* texts, there are various diseases which have similarities with cancer. These are -*Dushta shotha*, *Dushta Varna*, *Dushta Granthi*, *Dushta Arbrud*, *Dushta Vidradhi*, *Dushta Visarpa*, *Dushta nadivarana*, *Dushta mansapradoshaja vikara*.

Oral cavity cancer ranks in the top three of all cancer in India which accounts for over 30% off all cancer reported in the country. It appears as a growth or sore in the mouth that does not go away which includes cancers of the lips, tongue, cheeks, floor of the mouth, hard and soft palate, sinuses, and pharynx (throat), can be life threatening if not diagnosed and treated early. According to *Ayurveda*, 65 varieties of oral diseases can arise in seven anatomic locations. *Ayurveda* recommends some daily use therapeutic procedures for the prevention of and maintenance of oral health. These include: *Pratisarana*, *Dhavani* (Brushing), *Jivha Lekhana* (Tongue scrapping) and *Gandoosha* (gargling) or oil pulling and tissue regeneration therapies. Some of the scientifically proven beneficial effects of these procedures are *Pratisarana* with *Yashtimadhu Ghrita* significantly reduced intensity of radiation and chemotherapy induced mucositis.

Yastimadhu, also known as liquorice, is native to the Mediterranean & certain areas of Asia. They have been used medically since atleast 500 BC & liquorice has been described as “**the grandfather of herbs**”.

2. AIMS AND OBJECTIVE

- To establish the Protective effect of *Yashtimadhu ghrita pratisharan* against side effects of radiation/chemotherapy in oral cancer.
- Conceptual study of Role of *Yastimadhu ghrita mukhapratisharan* in oral cancer.

3. DESCRIPTION OF ORAL CANCER IN AYURVEDA

Mukhagata Roga which are correlated with Oral cavity Cancer. *Acharya Kashyapa* has mentioned that *Mukha* is derived from *Akasha mahabhuta*. It is the seat for *Pranavayu* and

Annagrahana (deglutition) done through *Mukha* (oral cavity) only. *Mukha* comprises of 1. *Aushtha*, 2. *Dantamula*, 3. *Danta*, 4. *Jihva*, 5. *Talu*, 6. *Kantha*, and 7. *Sarvani*. *Vagbhatta* has described „*Ganda*“ as 8th sub site of *Mukha*. *Acharya Bhavamishra* has considered these seven sites in the chapter '*Mukha Rogadhikara*'. According to *Shree Gananathasen Mukha* comprises of 10 organs including *Adhijihva*, *Upajihva* and *Lalagranthi*. *Acharya Charaka* has classified the *Mukharogas* on the basis of *Doshika* predominance into four types:

1. *Vataja*
2. *Pittaja*
3. *Kaphaja*
4. *Sannipataja*

Vitiated *Doshas* cause manifold disease depending upon the aggravating etiological factors and the sites of pathological manifestation. So, a physician should try to comprehend the nature of the disease (*Vikara Prakruti- Dosh*), the site of its manifestation (*Adhishtana*), specific etiopathogenesis (*Samutthana*) and then should initiate the treatment. A physician who so initiates the treatment after having full study on Ayurveda Management would never fail in his attempt to cure the disease.

4. DESCRIPTION OF ORAL CANCER

Oral cavity cancer ranks in the top three of all cancer in India which accounts for over 30% off all cancer reported in the country.

According to globacon data 2008 incidence of oral cavity carcinoma of both the sexes combined is 7.5 per 100000 population

- Males : 9.8/100000 population
- Females: 5.2/100000 population
- Mortality rate : 6.8/100000 males
: 3.6/100000 females
: 5.2/100000 Combined

Tobacco use alone accounts for 40% of all cancer in India. About 275 million Indians are tobacco users. Almost 30% of Indian population older than age 15 uses some form of tobacco. There are 4000 chemicals, 200 of which are poison and 69 certified carcinogens in tobacco like ammonia, cyanide, formaldehyde, nicotine (Ref: Indian cancer society).

The most common symptoms of oral cancer includes- Swellings/thickenings, lumps or bumps, rough spots/crusts/or eroded areas on the lips, gums, or other areas inside the mouth. The development of velvety white, red, or speckled (white and red) patches in the mouth, bleeding in the mouth, Unexplained numbness, loss of feeling, or pain/tenderness in any area of the face, mouth, or neck, Persistent sores on the face, neck, or mouth that bleed easily and do not heal within 2 weeks. A soreness or feeling that something is caught in the back of the throat. Difficulty chewing or swallowing, speaking, or moving the jaw or tongue, Hoarseness, chronic sore throat, or change in voice, Ear pain. A change in the way teeth or dentures fit together, Dramatic weight loss. Oral cancer is treated in the same way like other cancers with the help of surgery followed by radiation therapy. During radiation therapy, patients may have to deal with a number of side effects.

5. RISK FACTORS OF ORAL CANCER

- (a) Tobacco – Almost 90% of people with oral cavity and oro-pharyngeal cancer use tobacco, and the risk of developing these cancers increases with the amount used.
- (b) Alcohol – Drinking alcohol strongly increases a smoker's risk of developing oral cavity and oropharyngeal cancer. It is found predominantly in alcohol users.
- (c) Ultraviolet light – Majority of patients with lip cancer have outdoor occupation associated with prolonged exposure to sunlight.
- (d) Irritation – Long-time irritation to the lining of the mouth is a risk factor for oral cancer. The major source for this in India being tobacco.
- (e) Human Papilloma virus – Papilloma virus are a suspected source of oral cancers, like in cervix, vagina, vulva and penis.
- (f) Immune system suppression – People undergoing immunosuppressive drugs to treat certain immune system diseases, or to prevent rejection of transplanted organs, are at an increased risk of oral cancer.

6. ORAL CAVITY CANCER - SYMPTOMS

Manifestations of oral cavity cancer vary according to the stage and primary site of tumor. Carcinoma of oral cavity commonly present with following-

1. A patch in the mouth which is rough and does not heal within two weeks
2. Small lump inside the inner lining of oral cavity
3. Erosions around lips and gums
4. Numbness, loss of feeling and sensation inside the oral cavity

5. loosening of teeth and bad breathe
6. Decreased tongue mobility
7. Loss of taste
8. Alterations in speech
9. Loss of appetite
10. Severe weight loss
11. Difficulty in swallowing
12. Trismus
13. Lymphadenopathy in neck region

7. SIDE EFFECTS OF MODERN TREATMENT OF ORAL CANCER

In present era steroids and other drugs, having various adverse effects, are being commonly used for treating various oral diseases.

Side effects of Chemotherapy

Many chemotherapy drugs have adverse effects that can be severe. However, if a doctor recommends a person has chemotherapy, this usually means that the benefits are likely to outweigh any adverse effects. A person will often have chemotherapy as part of an overall treatment plan, which may also include surgery and radiation therapy. These treatments are effective in many cases of cancer. However, their effectiveness will often depend on the stage of the cancer, among other factors. As a result, Dental and oral side effects from chemotherapy usually go away soon after treatment ends. These include: Mouth sores, Pain in the mouth and gums.

Causes of dental or oral side effects-

Dry mouth.

Decrease in saliva.

Thickened saliva.

Infection.

Increased risk of tooth decay.

Loss of or change in taste.

Mouth sores.

Bone disease.

Side effects of radiotherapy

Side effects tend to start a few days after the radiotherapy begins. They gradually get worse during the treatment. They can continue to get worse after your treatment ends. But they usually begin to improve a few weeks following your treatment. It may take up to 6 weeks before the mouth or throat soreness completely goes. Getting over a long course of treatment completely can take several months. Everyone is different and the side effects vary from person to person. Side effects can include:

Tiredness and weakness

Feeling or being sick

Reddening or darkening of your skin

Sore mouth and throat

Difficulty swallowing

Dry mouth

Hoarse voice

Changed sense of smell

Difficulty opening your mouth

Taste changes

Swelling (lymphedema)

Chemoradiotherapy

Treatment with chemotherapy and radiotherapy is called chemoradiotherapy. If cancer has spread into surrounding tissues or lymph nodes. Rarely, it is used for small early mouth cancers (if surgery not done). This is not suitable for everyone.

8. ROLE OF *YASHTIMADHU PRATISHARAN* IN MANAGEMENT OF ORAL CANCER

Yashtimadhu^[4] has *madhura rasa*, *sheeta virya*, *madhura vipaka*. It is *vata-pitta shamaka*. Moreover, studies conducted on modern scientific parameters have proved the healing, anti-ulcer,^[5] anti-inflammatory and skin regeneration activity of *Yashtimadhu*. Sodium, glycyrrhizate possessed anti-ulcer activity and stimulation of regeneration of skin. Honey^[6] (*madhu*) has properties such as *madhura rasa* and *kashaya anu rasa*. It is heavy (*guru guna*), dry (*ruksha*) and cold (*sheeta*). It aggravates *vata*, scrapes *kapha* and normalizes *pitta* and *rakta*. It promotes healing process. *Yashtimadhu ghrita* showed encouraging results in minimizing the side effects of radiation and chemotherapy.

Go-Ghrita has a soothing property and form a thin-film layer over them and that allows early epithelization of wound. *Yashtimadhu* has proven healing, anti-ulcerogenic, anti-inflammatory and skin regeneration activity. *Yastimadhu* has *vrana shodhana* and *vrana ropana* properties that help for healing of the wound of oral cancer. *Ghrita* has a soothing property and form a thin film layer over them and that allows early epithelization of wound. *Yastimadhu* is anti-ulcerogenic and anti-inflammatory in property. Licochalcone A is a flavonoid found in liquorice root (*Glycyrrhiza glabra*). It is known for anti-microbial activity and reported ability to inhibit cancer cell proliferation. Glycyrrhetic acid has proved to have anti-inflammatory effect similar to glucocorticoid and mineralocorticoids.

Acharya Caraka mentioned the pharmacological classification of *yastimadhu* as-

- ✓ *Jivaneeya* (Rejuvenative) - Rejuvenates cells of oral cavity.
- ✓ *Sandhaneeya* (Wound healer) - repairs cells of oral cancer.
- ✓ *Varnya* (Complexion promoter) - regain back normal complexion of oral cavity mucosa.
- ✓ *Kanthy* (Voice promoter) - Regain lost voice after oral cancer.
- ✓ *Angmardaprashamana* (Cures malaise)

Yastimadhu Ghrita

| Sr. No. | Dravya Name | Botanical Name | Rasa | Veerya | Vipaka | Guna | Doshghnata (Action of doshas) | Karya (Action) |
|---------|---------------------|---------------------------|------------------------|---------------------|------------------------|---------------------|----------------------------------|---|
| 1 | <i>Yashti madhu</i> | <i>Glycyrrhiza glabra</i> | <i>Madhura</i> (Sweet) | <i>Sheet</i> (Cold) | <i>Madhura</i> (Sweet) | <i>Guru snigdha</i> | <i>Vata pitta Shamak</i> | <i>Dahashamaka, kanthya, varnya, sadhaneeya, rasayana</i> |
| 2 | <i>Ghrita</i> | | <i>Madhura</i> (Sweet) | <i>Sheet</i> (Cold) | <i>Madhura</i> (Sweet) | <i>Guru snigdha</i> | <i>Vata pitta Visha doshghna</i> | <i>Balvardhan Agni – daghdha vrana ropak</i> |

The main chemical constituent of liquorice is glycyrrhizin (about 2–9%), a triterpene saponin with low haemolytic index. Glycyrrhetic (gly- cyrrhetic) acid (0.5-0.9%), the agly-cone of glycyrrhizin is also present in the root. Other active constituents of liquorice include isoflavonoids, chal- cones, coumarins, triterpenoids and sterols, lignans, amino acids, amines, gums and volatile oils A special liquorice extract known as DGL (deglycyrrhizinated liquorice) is used in the treatment of peptic ulcer. Oralliquorice preparations, containing Glycyrrheti.

9. DISCUSSION

Yastimadhu is a broad spectrum herbal drug with anti-cancer properties. It has pharmacological properties such as anti-inflammatory, anti-microbial, anti-oxidative, anti-viral, immunomodulatory, hepato-protective & cardio-protective. By anti-inflammatory property, *yastimadhu ghrita pratisharana* in oral cavity with cancer reduces swelling, thus helps in easy deglutition of food. By anti-microbial property of this drug, it kills bacterial growth of oral cavity and suppresses oral cavity infection. By anti-oxidative property, it destroys free radicals and repairs new cell. By anti-viral property of *yastimadhu*, Human papilloma virus subsides. Sides effects of chemo-radio therapy subsides by immunomodulatory, hepato-protective & cardioprotective properties of *yastimadhu*, thus it is best drug which helps in increasing quality of life as well as span of life, which is a main need of present scenario.

10. CONCLUSION

Modern Scientists are searching for other modalities with good potency and lesser or no ill-effects. Ayurveda treatment is a boon to patients with no complications observed so far. Ayurveda medication *Yastimadhu ghrita pratisharana* in oral cavity cancer holds good result in this perspective because the *yastimadhu* act as *rasayana* i.e. rejuvenates new cells. This property of *yastimadhu* is attractive attention of researchers as a treatment modality in treating oral cancer.

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