

# AN AYURVEDIC REMEDIES FOR CHEMOTHERAPY INDUCED SIDE EFFECTS IN CANCER PATIENTS

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**Abstract :** The systematic review of the research literature identified a vast number of interventions that have been investigated to determine their effectiveness in the prevention or treatment of oral mucositis in cancer patients. It is obvious that many interventions used in clinical practice have never been rigorously evaluated. Furthermore, many combinations of agents are advocated by local experts without evidence to support their use. The quality of published papers was variable, and although a large number of experimental studies were identified, some were rejected due to deficiencies in study design or in reporting.

**IndexTerms – Ayurvedic Remedies, Chemotherapy Induced Side Effects.**

## INTRODUCTION:

Cancer is a major illness and a leading cause of death world over, causing suffering of large population and global economic loss worldwide. There were 12.7 million cancer cases and 7.2 million deaths due to cancer worldwide in the year 2016. Thus, studies are being conducted globally to prevent cancer or develop nontoxic therapeutic agents which include those using ayurvedic herbal medications. In the last few decades though there has been tremendous advancement in the diagnostic modalities and treatment of cancer which has increased cancer survival rates, the long term effects of these treatment modalities on the quality of life of the cancer survivors have attracted the attention.

## CONVENTIONAL MANAGEMENT OF CANCER AND ITS SIDE EFFECTS

Conventional management of cancer encompasses four major strategies – surgery, radiation therapy (including photodynamic therapy), chemotherapy (including hormonal therapy and molecular targeted therapy) and biologic therapy (including immunotherapy and gene therapy). These modalities are usually given in combination, and they work through different mechanisms to a synergistic effect. For e.g., antibodies (a form of immunotherapy) may be used to deliver radiation therapy. Adverse effect of these therapies and drug resistance are the two important obstacles in the better outcome of treatment and quality of life of the patient respectively. Chemotherapy drugs are highly toxic and damage the adjacent healthy cells. Most of the patients suffer from adverse effects of chemotherapy and radiation therapy. These side effects may be

- ❖ Acute (Occurring within few weeks)
- ❖ Intermediate (Occurring months or years)
- ❖ Late (Occurring after the therapy)

Some important side effects of chemotherapy are: nausea, vomiting, diarrhea, mucositis, alopecia, constipation etc.

## ORAL MUCOSITIS:

ORAL MUCOSITIS, also called Stomatitis, is a common, debilitating complication of cancer chemotherapy, occurring in about 40% of patients. It results from the systemic effects of cytotoxic chemotherapy agents. Oral mucositis is inflammation of the mucosa of the mouth which ranges from redness to severe ulceration. Symptoms of mucositis vary from pain and discomfort to an inability to tolerate food or fluids.

Mucositis may also limit the patient's ability to tolerate either chemotherapy or radiotherapy. Mucositis may be so severe as to delay treatment and so limit the effectiveness of cancer therapy. Patients with damaged oral mucosa and reduced immunity resulting from chemotherapy are also prone to opportunistic infections in the mouth. The mucositis may affect patients' gum and dental condition, speech and self esteem are reduced, further compromising patients' response to treatment and/or palliative care.

It is therefore extremely important that mucositis be prevented whenever possible, or at least treated to reduce its severity and possible complications. Currently there are a bewildering number of interventions to choose from, but no high quality synthesis of the best research evidence for these interventions.

#### GENERAL INFORMATION ABOUT ORAL COMPLICATIONS

- ✓ Oral complications are common in cancer patients, especially those with head and neck cancer.
- ✓ Preventing and controlling oral complications can help you continue cancer treatment and have a better quality of life.
- ✓ Patients receiving treatments that affect the head and neck should have their care planned by a team of doctors and specialists.

#### QUALITY OF RESEARCH

The systematic review of the research literature identified a vast number of interventions that have been investigated to determine their effectiveness in the prevention or treatment of oral mucositis in cancer patients. It is obvious that many interventions used in clinical practice have never been rigorously evaluated. Furthermore, many combinations of agents are advocated by local experts without evidence to support their use. The quality of published papers was variable, and although a large number of experimental studies were identified, some were rejected due to deficiencies in study design or in reporting.

Combining results from different studies during the systematic review and meta-analysis was limited mostly because of differences between the study participants', interventions, and the timing and method of measuring outcomes. While many interventions used for the treatment or prevention of mucositis have some evidence supporting their use, no intervention has been conclusively validated by research.

#### AYURVEDA FOR CHEMOTHERAPY INDUCED ORAL MUCOSITIS IN CANCER PATIENTS

##### 1. TRIPHALA ADMINISTRATION

Oral administration of triphala prior to the chemotherapy, daily for consecutive five days, significantly reduced the mucosal damage associated with chemotherapy.

##### 2. ORAL APPLICATION OF YESTIMADHU POWDER WITH HONEY

Recent scientific study showed that local application of Yastimadhu (Glycyrrhiza Glabra or licorice) powder (mixed with honey) in the oral cavity, prior to chemotherapy, reduces chemotherapy induced mucositis. Oral application of honey is considered as a simple remedy for skin and mucosal surface damage as a result of chemotherapy.

#### RECOMMENDATIONS - ORAL CARE PROTOCOL

All patients at risk of developing mucositis should receive a standardized oral care regime as an ongoing component of their care. The aim of this regimen is to achieve and maintain a clean mouth and to limit opportunistic infection via the damaged mucosa. This information is based on Level IV evidence (expert opinion).

Grade	Signs and Symptoms
0	No Symptoms
1	Sore Mouth, No Ulcers

2	Sore Mouth with Ulcers, but able to Eat Normally
3	Liquid Diet Only
4	Unable to Eat or Drink

### 1. MUCOSITIS

### 2. ASSESSMENT

Assess condition of the patient's mouth daily. While there is no evidence to suggest any one assessment tool is better than others, below is the World Health Organization grading of mucositis as an example of a typical tool.

### 2. BEFORE COMMENCEMENT OF THERAPY

Interventions that may be beneficial prior to the commencement of treatment include:

- ❖ Treatment of caries and dental disease; and
- ❖ Education regarding the importance of orodental hygiene, how to maintain oral hygiene and to develop a daily routine of oral care.

### 3. POST THERAPY

Interventions that may be beneficial following treatment include:

- Clean teeth and gums after meals and before sleep with tooth brush or swab as tolerated;
- Rinse the mouth regularly;
- If dentures are worn, remove and clean them daily and leave out while at rest;
- Avoid painful stimuli such as hot food and drinks, spicy food, alcohol and smoking;
- Regular inspection of mouth by the patient and health professionals;
- Report any redness, tenderness or sores on the lips or in mouth;
- Provide comfort measures such as lubrication of the lips, topical anesthesia and analgesics;
- Prompt treatment of mucositis symptoms and oral infections.

### PREVENTING AND CONTROLLING ORAL COMPLICATIONS:

Sometimes treatment doses need to be decreased or treatment stopped. Sometimes treatment doses need to be decreased or treatment because of oral complications. Preventive care before cancer treatment begins and treating problems as soon as they appear may make oral complications less severe. When there are fewer complications, cancer treatment may work better and you may have a better quality of life.

Patients receiving treatments that affect the head and neck should have their care planned by a team of doctors and specialists. To manage oral complications, the oncologist will work closely with your dentist and may refer you to other health professionals with special training. These may include the following specialists:

- ❖ Oncology nurse.
- ❖ Dental specialists.
- ❖ Dietitian.
- ❖ Speech therapist.
- ❖ Social worker.

### The goals of oral and dental care are different before, during, and after cancer treatment:

- Before cancer treatment, the goal is to prepare for cancer treatment by treating existing oral problems.
- During cancer treatment, the goals are to prevent oral complications and manage problems that occur.

- After cancer treatment, the goals are to keep teeth and gums healthy and manage any long-term side effects of cancer and its treatment.

#### CONCLUSION:

This manuscript covers a very important area of chemo induced side effects in cancer patients. All the major and common side effects are covered and based on comprehensive review of ancient vedic literature and modern scientific evidences, ayurveda based interventions are put forth. This manuscript should help clinicians and people suffering from cancer to combat serious chemo-radiotherapy related side effects through simple but effective home-based ayurveda remedies. The remedies described are commonly available and safe. These simple ayurveda based solutions may act as an important adjuvant to chemotherapy and enhance the quality of life of cancer patients. Future studies should scientifically test these recommendations for various side effects induced by conventional management of cancer.

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