



# An Observational Study to Assess the Prevalence of Oral Mucositis and Its Management Among Patients Receiving Chemotherapy in Selected Hospital, India

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## KEYWORDS

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## ABSTRACT:

**Introduction:** Cancer is a major public health problem worldwide and a healthy cell does not turn into a cancer cell overnight. Cancer cells exhibit dysplasia, hyperplasia, metaplasia, and pleomorphism. An observational study was conducted to assess the prevalence of oral mucositis and its management among patients receiving chemotherapy in selected hospitals, India

**Objectives:** To assess the prevalence of oral mucositis, to identify the management strategies of oral mucositis and to find the association between the prevalence of oral mucositis with selected demographic variables.

**Methods:** A total of 500 cancer patients receiving chemotherapy were selected by using the Non-Probability Purposive Sampling technique. The tools used for data collection had four (4) sections of demographic variables of the cancer patients receiving chemotherapy, clinical profile of the cancer patients receiving chemotherapy, management strategies of oral mucositis and WHO Oral Mucositis Assessment Scale.

**Results:** The findings showed that the prevalence of oral mucositis was seen more in Grade 1 (29.6%) of Oral Mucositis in cancer patients receiving chemotherapy, with no samples suffering from Grade 4 (0%) of Oral Mucositis. The management strategies were identified that majority of the patients were using Chlohexidine Mouthwash (40%) and there were some participants who were using home remedies like honey (10%) for the oral mucositis, some samples not using any remedies (26%) for oral mucositis.

**Conclusions:** There was also a significant association between the prevalence of oral mucositis with selected demographic variable except the education of the participant which was not significant. The study concluded that the prevalence of oral mucositis and its management varies from individual to individual.

## 1. Introduction

The human body is the most beautiful creation of God. It can adapt to the various vigorous climate conditions but sometimes, some conditions or factors, especially the ones resulting from the industrialization can harm it drastically and force it to death. Almost half of the people who are treated with chemotherapy have complications of oral mucositis. Richard, David and Faragher, described that the first rule of cancers is that they follow no rules. Cancer cells exhibit dysplasia, hyperplasia, metaplasia, and pleomorphism.<sup>[1]</sup>

According to the Global Cancer Observatory (GLOBOCAN) estimates, there were 19.3 million

incident cancer cases worldwide for the year 2020. India ranked third after China and the United States of America. The National average for the year 2022 of crude rate of incidence per 100,000 is 100.4; for males, 95.6 and females, 105.4.<sup>[2]</sup>

Chemotherapy and radiation therapy are the most widely used interventions for the treatment of cancer. Although these treatments are employed to improve the patient's quality of life, they are associated with several side effects. Severe adverse reactions due to these therapies result in patient morbidity and mortality.<sup>[3]</sup>

Among the side effect of chemotherapy, oral mucositis is an important, very common and a big burden to the patient. Oral mucositis induced by chemotherapy is a



frequently occurring toxicity in patients with cancer. Severe mucositis has a major impact on patient daily functioning, well-being, and quality of life. It can also compromise a patient's ability to tolerate planned therapy, resulting in missed doses or dose reductions.<sup>[4]</sup>

The pathogenesis of oral mucositis is complex, dynamic and intricate. The chemotherapy-induced oral mucositis is by basal epithelial cell death due to cellular damage by free radicals and inflammatory factors followed by the upregulation of genes that increase the injury response by stimulating pro-inflammatory cytokines, inflicting damage on the mucosal tissues.<sup>[5]</sup>

The World Health Organization (WHO) scale is a simple, easy to use scale that is suitable for daily use in clinical practice. This scale combines both subjective and objective measures of oral mucositis. The Oral Mucositis Assessment Scale (OMAS) is an objective scale, suitable for research purposes, that measures erythema and ulceration at nine different sites in the oral cavity.<sup>[6]</sup>

Almost half of the people who are treated with chemotherapy have complications of oral mucositis. The treatment of mucositis is mainly based on supportive therapies i.e., oral hygiene, consumption of adequate liquids and application of mouth washes. Patients are recommended to avoid alcohol, citrus fruits and hot food. Severe mucositis is a common course of morbidity in patients undergoing chemotherapy.

## 2. Objectives

- To assess the prevalence of oral mucositis among patients receiving chemotherapy.
- To identify the management strategy of oral mucositis among patients receiving chemotherapy.
- To find out the association between the prevalence of oral mucositis with selected demographic variables.

## 3. Methods

The research methodology is the systemic, theoretical analysis of the methods that are applied to the particular study. It indicates the pattern for organizing the procedure valid and reliable data for the problem under investigation. The research approach used in this study is Quantitative Research Approach which primarily concerned with observable and measurable phenomena involving people, events or things and establishing the strength of the relationship between variables, usually by statistical tests. In this study, Descriptive Survey Design

was used which aims at describing the prevalence of oral mucositis among the cancer patients who are receiving chemotherapy and also identifying the management strategies that has been prescribed by the physicians and also the home management remedies used by the patients. The population were cancer patients receiving chemotherapy and non-probability purposive sampling technique was used with a sample size of 500 patients. A structured questionnaire was prepared to gather information regarding the demographic variable and the clinical profile of the cancer patients receiving chemotherapy and a checklist was prepared to identify the management strategies that are prescribed by the physician, the remedies used by the patients themselves and also to identify the patients who are not using any treatment. The WHO Oral Mucositis Assessment Scale (OMAS) was used to check the patients who were suffering from oral mucositis as a side effect. The data collection tool was divided into four different tools. The data was collected using unstructured interview which included demographic and clinical variables and a standardized WHO Grading Scale was used to grade the prevalence of oral mucositis among patients receiving chemotherapy. Written informed consent was taken from all the participants and anonymity and confidentiality of the subject was maintained while carrying out the study.

## 4. Results

### SECTION A: Findings related to demographic variables:

- There were 130 (26%) samples in the age group of 31-35 years, 120 (24%) samples in the age group of 36-40 years, 118 (23.6%) samples in the age group of 41-45 years, 80 (16%) samples in the age group of above 45 years and 52 (10.4%) samples in the age group of 25-30 years.
- Gender distribution was found to be majority of samples were male 300 (60%) and female were female 200 (40%).
- For education, majority of the samples were illiterate 170 (34%), followed by 132 (26.4%) had primary education, 122 (24.4%) were secondary education and 76 (15.2%) were graduate and above.
- For occupation, majority of the samples were daily labor 220 (44%), followed by 142 (28.4%) were business, 102 (20.4%) were government service and 36 (7.2%) were housewife.
- For religion, 266 (53.2%) samples belonging to Hindu religion, followed by 460 (32%) samples



belonging to Muslim religion, followed by other religion which was Sikh 40 (8%) and minority samples were Christian religion 34 (6.8%).

- For marital status, Majority of the samples were married 233 (46.6%), followed by unmarried 143 (28.6%), Widow/Widower were 82 (16.4%), Separated were 22 (4.4%) and Divorced were 20 (4%).
- Majority of the samples did not have any history of substance chewing 310 (62%), while 190 (38%) had history of substance abuse. The substances used were Shikhar, Pan.
- Majority of the samples did not have any history of smoking 297 (59.4%), while 203 (40.6%) had history of smoking. The type of smoking substance used were Cigarette, Hooka, Bididi.
- Majority of the samples did not have any history of Co-morbidities 385 (77%) and 115 (23%) had history of co-morbidities. The co-morbidities found were Hypertension, Diabetes Mellitus.

## SECTION B: Findings related to clinical profile:

- Out of the 500 samples, it was seen that majority had Ca. Lungs 65 (13%).
- Majority of the samples were receiving 3 chemotherapeutic agents 150 (30%) for treatment.
- Most of the samples were receiving their 2<sup>nd</sup> cycle of chemotherapy 150 (30%), followed by 3<sup>rd</sup> cycle of chemotherapy 100 (20%).

## SECTION C: Findings related to the management strategies for oral mucositis:

- The management strategies for oral mucositis were divided into three categories: Prescribed treatment, Home Remedies and No Remedies.
- Majority of the samples were using Chlorhexidine mouthwash 200 (40%) which has been prescribed by the physician for management of oral mucositis and 120 (24%) were using Salth & Soda Mouthwash.
- It was also noted that some samples were using Honey application 50 (10%) as home remedies without being prescribed by the physician for management of oral mucositis.
- It was also noted that there were some samples who were not taking any remedies 130 (26%) for oral mucositis.

## SECTION D: Findings related to the prevalence of oral mucositis:

- The prevalence of oral mucositis was found that majority of the samples were 148 (29.6%) having Grade 1 of oral mucositis, followed by 134 (26.8%)

## SECTION E: Findings related to the association between the prevalence of oral mucositis and demographic variables:

There was a significant association between the prevalence of oral mucositis with the demographic variables such as age, gender, occupation, religion, marital status, history of substance chewing, history of smoking and history of co-morbidities except education of the patients.

## 5. Discussion

The present study assessed the prevalence of oral mucositis and its management among patients receiving chemotherapy in selected hospitals, India.

Study found that the prevalence of oral mucositis was seen more in Grade 1 having the maximum prevalence of with 29.6%, Grade 0 has 26.8%, Grade 2 has 25%, Grade 3 has 18.6% and Grade 4 has 0%. The most common oral mucositis management strategies used by cancer patients receiving chemotherapy are the ones which are prescribed by the physician was chlorhexidine mouthwash that was advised to be used every 8<sup>th</sup> hourly. Honey application was used as a home remedy by the samples themselves without the physician's prescription. It was also seen that some samples were not using any form of treatment for oral mucositis despite the physician's prescription because of their religious and cultural beliefs.

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