

## **A Study to determine the effectiveness of honey /frozen fruit juice/fresh fruit juice along with oral Care protocol in reducing chemotherapy induced Oral mucositis among oncology clients in Devaki Hospital at Madurai.**

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### **I. Introduction:**

In most people's minds there is no scarier diagnosis than that of cancer. Cancer is often thought of untreatable, unbearably painful disease with no cure. Cancer may be popular and over generated. Cancer is undoubtedly a serious and potentially life threatening illness. It is the leading cause of death in older Americans, 1.5 million new cases of cancer occurring in United States each year and over 570,000 deaths in another two million cases per year. It is a misconception to think that all forms of cancer's which are not reported but could add another truth of the matter is that there are multiple types of cancer, many of which can today be effectively treated so as to eliminate, reduce or slow the impact of the disease on patients' lives, while a diagnosis of cancer may still leave patients' feeling helpless and out of control, in many cases today there is cause for hope rather than hopelessness.

Chemotherapy is a type of cancer treatment that uses drugs to destroy cancer cells. Chemotherapy works by stopping or slowing the growth of cancer cells, which grow and divide quickly. But it can also harm healthy cells that divide quickly, such as those that line the mouth and intestines. Damage to healthy cells may cause side effects. When chemotherapy destroyed cancer cells to the point that can no longer detect them in our body and they will not grow back, prevent from spreading, slow its growth or destroys cancer cells that have spread to other parts of the body. Chemotherapy often results in erythema, edema, atrophy and ulceration of the oral mucosa, a condition generally referred to as oral mucositis. When the oral mucosa becomes atrophic from chemotherapy, local trauma leads to ulceration, with nonkeratinized sites in the mouth, namely the buccal mucosa, the ventral and lateral parts of the tongue, the labial mucosa, the floor of the mouth, the soft palate, and the oropharyngeal fauces.

Oral mucositis may progress to painful ulcers and infection, interfering with eating, talking, and taste, chewing or swallowing and often lasting 7-14 days.

Nature is the important source for producing new medicines. Honey is the by-product of flower nectar. This natural product has antibacterial properties and enhances epithelization of the mucosa, and is thereby a justified approach in the management of mucositis.

Papaya is a wonderful fresh fruit and its healing properties. It contains proteolytic enzymes papain. Papain is also being studied for relief of cancer therapy side effects, especially relieving side effects such as difficulty swallowing and mouth sores after radiation and chemotherapy as well as boosting up the immune system and helping the body to fight the cancer.

Recently a randomized controlled trial compared the efficacy of topical pure honey to usual medical care in 40 patients with cancer in the head and neck. In this preliminary study, the honey group experienced significant reduction in grade 3 and grade 4 mucositis.

An interesting Egyptian study shows honey being effective against oral mucositis. In the treatment group, no patients developed grade 4 mucositis and only the 3 patients (15%) developed grade 3 mucositis. In the control group, 13 patients (65%) developed grade 3 or 4 mucositis.

### **II. Objectives**

1. To assess the existing level of oral mucositis among oncology clients undergoing chemotherapy.
2. To find out the effectiveness of application of honey along with oral care protocol among group-I oncology clients.
3. To find out the effectiveness of swish and swallow frozen fruit juice along with oral care protocol among group-II oncology clients.
4. To find out the effectiveness of application of fresh fruit juice along with oral care protocol among group-III oncology clients.
5. To compare the effectiveness of honey/frozen fruit / fresh fruit juice in reducing oral mucositis among group -I and Group-II & group -III oncology clients.

- To find out the association between level of oral mucositis among group-I, group II and group III oncology clients and their selected demographic variables.

**Hypothesis:**

- There will be a significant reduction in the level of oral mucositis among group –I oncology clients after applying honey.
- There will be a significant reduction in the level of oral mucositis among Group-II oncology clients after giving frozen fruit juice.
- There will be a significant reduction in the level of oral mucositis among Group-III oncology client after applying fresh fruit juice.
- There will be a significant difference in the reduction in the level of oral mucositis among Group-I and Group-III oncology clients.
- There will be a significant association between level of oral mucositis among Group-I, group II and group III oncology clients and their selected demographic variables.

**III. Materials and methods**

**Research approach and design:**

The research design selected for this study is quasi experimental research design with three experimental group.

Group-I	O <sub>1</sub>	X <sub>1</sub>	O <sub>2</sub>
Group-II	O <sub>1</sub>	X <sub>2</sub>	O <sub>2</sub>
Group-III	O <sub>1</sub>	X <sub>3</sub>	O <sub>2</sub>

**Group-I:** - experimental group with honey application

**Group-II:** - experimental group with swish and swallow of frozen fruit juice.

**Group-III:** - experimental group with application of fresh fruit juice.

**O<sub>1</sub>** : Pretest

**X<sub>1</sub>** : application of honey

**X<sub>2</sub>** : swish and swallow of frozen fruit juice

**X<sub>3</sub>** : application of fresh fruit juice

**O<sub>2</sub>** : post test

**Setting of the study:**

The study was conducted at Devaki cancer research institute (Hospital) at Madurai. The population of the study was the clients with cancer who received chemotherapy and having oral mucositis. 45 clients were selected as the sample using purposive sampling technique.

Research tool and consist of the demographic data and a Standardized Oral assessment guide-oral mucositis. data analysis was carried out by using descriptive and inferential statistics (ANOVA).

**Data collection procedure:**

45 chemotherapy clients with moderate to severe oral mucositis were selected as study subjects and divided into three groups. A pre intervention test is carried out to assess the level of mucositis. Honey, fresh fruit juice and frozen fruit juice were administered to Group I, Group II and group III respectively. Intervention will be given for groups two times a day up to one month.

Post test was conducted 6 month after the intervention.

**IV. Results and analysis**

Section I: GROUP I Pre intervention Level of Mucositis

N=15

Level of Mucositis	Category	Respondents	
		Number	Percent
Mild	9 – 13	0	0
Moderate	14 – 18	07	46.67
Severe	19 - 24	08	53.33
Total		15	100.0

The above table indicates the pre-intervention level of mucositis in group 1 cancer patients before administering Honey. Most of the patients 8 (53.33) are having severe mucositis and 7(46.67) are having moderate level of mucositis.

Post intervention Level of Mucositis

N=15

Level of Mucositis	Category	Respondents	
		Number	Percent
Mild	9 – 13	13	86.67
Moderate	14 – 18	2	13.33
Severe	19 - 24	0	0
Total		15	100.0

The above table indicates the post-intervention level of mucositis in group 1 cancer patients after administering honey. Most of the patients 13(86.67) are having mild mucositis and 2(13.33) are having moderate mucositis. No patient is having severe level of mucositis.

Comparison of Overall Pre test and Post test Mean level of mucositis

N=15

Aspects	Respondents level of mucositis		Paired 't' Test
	Mean	SD	
Pre test	18.867	2.899	9.7816*
Post test-2	10.4	1.6818	
Enhancement	8.467		

\* Significant at 0.05 level,

The t-test value (t=9.7816) indicates that there is a significant difference (improvement) in the pre and post intervention level of patient condition (oral mucositis).

**Section - 2: GROUP II Pre intervention Level of Mucositis**

N=15

Level of Mucositis	Category	Respondents	
		Number	Percent
Mild	9 – 13	0	0
Moderate	14 – 18	06	40
Severe	19 - 24	09	60
Total		15	100.0

The above table indicates the pre-intervention level of mucositis in group 2 cancer patients before administering fresh fruit juice (papaya). Most of the patients 9 (60) are having severe mucositis and 6(40) are having moderate level of mucositis.

Post intervention Level of Mucositis

N=15

Level of Mucositis	Category	Respondents	
		Number	Percent
Mild	9 – 13	11	73.33
Moderate	14 – 18	4	26.67
Severe	19 - 24	0	0
Total		15	100.0

Table-11 indicates the post-intervention (post test 2) level of mucositis in group 2 cancer patients after administering fresh fruit juice (papaya). Most of the patients 11(73.33) are having mild mucositis and 4(26.67) are having moderate mucositis. No patient is having severe level of mucositis.

Comparison of Overall Pre test and Post test level of mucositis

N=15

Aspects	Respondents level of mucositis		Paired 't' Test
	Mean	SD	
Pre test	19.067	2.576	8.4304*
Post test-2	11.467	2.356	
Enhancement	7.6		

\* Significant at 0.05 level,

The t-test value (t=8.4304) indicates that there is a significant difference (improvement) in the pre and post intervention level of patient condition (oral mucositis).

**Section - 2: GROUP III**

Pre intervention Level of Mucositis

N=15

Level of Mucositis	Category	Respondents	
		Number	Percent
Mild	9 – 13	0	0
Moderate	14 – 18	08	53.33
Severe	19 - 24	07	46.67
Total		15	100.0

The above table indicates the pre-intervention level of mucositis in group 3 cancer patients before administering frozen fruit juice (papaya). Most of the patients 8 (53.33) are having moderate mucositis and 7(46.67) are having severe of mucositis.

Post intervention Level of Mucositis

N=15

Level of Mucositis	Category	Respondents	
		Number	Percent
Mild	9 – 13	12	80
Moderate	14 – 18	3	20
Severe	19 - 24	0	0
Total		15	100.0

The above table indicates the post-intervention (post test 2) level of mucositis in group 3 cancer patients after administering frozen fruit juice (papaya). Most of the patients 12(80) are having mild mucositis and 3(20) are having moderate mucositis. No patient is having severe level of mucositis.

Comparison of Overall Pre test and Post test level of mucositis

N=15

Aspects	Respondents level of mucositis		Paired 't' Test
	Mean	SD	
Pre test	18.467	2.56	8.711 *
Post test-2	11.2	1.97	
Enhancement	7.267		

\* Significant at 0.05 level,

The t-test value (t=8.711) indicates that there is a significant difference (improvement) in the pre and post intervention level of patient condition (oral mucositis).

Comparison of the effectiveness of honey ,fresh fruit juice and frozen fruit juice in reducing oral mucositis among group-I and group-II & group-III oncology clients. N=15

Aspects	Respondents level of mucositis		F value
	Mean	SD	
Group 1	10.4	1.6818	1.1304*
Group 2	11.467	2.3564	
Group 3	11.2	1.9712	

\* Significant at 0.05 level,

The Chi Square value (1.1304) indicates that there is a significant difference in the extent of improvement of oral mucositis in three experimental groups of cancer patients. The group for which Honey is been administered shown better improvement than the other groups.

The level of mucositis of the first group after administering honey improved significantly compared to the other two groups. With the above findings the researcher come to the conclusion that honey is more effective in relieving oral mucositis compared to fresh fruit juice (papaya) and frozen fruit juice(papaya)

**References**

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