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Effectiveness of Turmeric Oral Rinse Versus Saline Oral Rinse on Oral Mucositis among Patients Receiving Chemotherapy

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Abstract:-

- ***Background:***

Oral mucositis is the commonplace problem of mass cancers' chemotherapy. It begins five-10 days after the initiation of chemotherapy and lasts 7-14 days. Chemotherapy precipitated oral mucositis reasons the mucosal lining of the oral to atrophy and break down, forming ulcers. The take a look at is to evaluate the effectiveness of turmeric oral rinse and saline oral rinse on patents with chemotherapy precipitated oral mucositis in determined on sanatorium.

- ***Design:***

Casual research design was selected for the study; inclusion criteria were selected by non-probability sampling technique.
Selection criteria: the inclusion criteria included Patients under chemo therapy with the age class above age class of 20-65 years and both the gender.

- ***Methods:***

A study was conducted patients with oral mucositis among patients receiving chemotherapy. The assessment tools were used national cancer institute oral mucositis grading scale.

- ***Results:***

From the findings of the have a look at, it can be concluded that the overall vicinity smart comparison among intervention class I and II imply percent score for pretest became 88%, revealing the difference of 59% in intervention class 47 % for numerical pain assessment scale. tremendously full-size variations had been discovered in experimental organization I. but, in treatment group II pretest rating become 25% while in submit-test it was sixty-one% revealing the difference of 36%. It depicts that the turmeric oral rinse was greater effective than saline oral rinse in lowering the extent of oral mucositis among affected person receiving chemo remedy. Paired t check score become 14.43 and 8.52 in intervention class I and II, when as compared to desk value (2.15) each are elevated. This suggests that there has been an effectiveness between submit test score of degree of oral mucositis among affected person receiving chemo therapy in intervention class I and II. paired and unpaired "t" check confirmed, there was a huge effectiveness of turmeric oral rinse is greater powerful than saline oral rinse on oral mucositis among patient receiving chemotherapy. Chi rectangular test confirmed handiest length of cancer (p>0.05) in both the class up and the boxcar variable haven't any good-sized association with the submit-check score of stage of oral mucositis in both intervention class I and II. Conclusion: The findings found out that imply publish check scores was 34.24±1.28 in intervention class I, in intervention class II publish-check rating changed into 24.07± 1.27 revealing the distinction of 36%. It depicts that the turmeric oral rinse became greater powerful than saline m oral outh rinse in lowering the extent of oral mucositis among patient taking chemotherapy.

Keyword:- *Effectiveness, Turmeric Oral Rinse, Saline Oral Rinse, Oral Mucositis.*

I. INTRODUCTION

"Cancer can touch you, but not your soul; neither your thoughts, nor your heart."- Vikrmn

Maximum cancers are due to specific DNA harm. numerous common mechanisms that cause DNA damage cause particular malignant issues: First, proto-oncogenes may be activated with the resource of translocations, 2d; proto-oncogenes may be activated by way of thing mutations. Proteins from those mutated genes are constitutively lively in preference to honest to the second one messengers of periodic extracellular indicators. 0.33, mutations that inactivate a gene can bring about tumors if the gene product typically limits cellular proliferation. Dodd MJ et al, (2022)

The starting place of the word cancer is attributed to the Greek health practitioner Hippocrates (460-370 BC), who is considered the "father of medication". In Greek, these phrases talk to a crab, most possibly relating to this disease, as the finger-like, increasing growths of the most cancers resembled the shape of a crab**. Dr. Ali Raad Abdul Azeez et. Al, (2019)**

Maximum cancers are one of the main reasons of lack of existence worldwide. A predicted eighty-four million humans died from maximum cancers amongst 2005 and 2015 without intervention. Low- and middle-profits nations are more stricken by maximum cancers than superior countries. Addressing the growing burden of most cancers global and

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powerful control measures to restrict the threat are critical**. Neethu Chandran (2019)**

The most styles of cancer are carcinoma, sarcoma, cancer, lymphoma, and leukemia. Carcinomas, the most normally recognized cancers originate within the pores and skin, lungs, breasts, head and neck, pancreas, and remarkable organs and glands. Head and neck most cancers refers to a hard and fast of biologically comparable cancers that start within the lip, oral cavity (oral), nasal hollow space (indoors nose), paranasal sinuses, pharynx and larynx. There are 0. 5 million new instances an international. R.L Foote et al (2019)

Steady with the country wide cancer Institute, maximum cancers is a group of sicknesses regarding unusual cellular increase with the capacity to invade or spread to other components of the frame. these contrast with benign tumors that don't unfold to different additives of the frame. extra than a hundred types of most cancers have an effect on humans. most cancers are an ailment method that starts off evolved at the same time as a mobile is transformed via a genetic mutation of the cell's DNA that office work a clone and ends in metastasis. **J. Sorensen, (2017)**

Most cancers is a collection of more than 200 illnesses characterized by means of out of control and unregulated mobile growth. it's miles a main fitness hassle that occurs in all and sundry of all ethnicities. The most often diagnosed cancers worldwide had been lung (1.8 million, thirteen% of the entire) and breast (1.4 million, nine.7%). The maximum common reasons of dying had been lung (1.6 million, 19.4% of the full), liver (0.8 million, 9.1%) and stomach (0.7 million, 8.8%) cancers**. Cheng, k. F., (2017)**

Cancer is the second leading cause of death in the world. In 2006, 564830 died due to cancer which is more than 1500 people per day. The five-year survival after cancer diagnosis is 65%. In 2007, 37% premature cancer deaths occur among the age group of 25-64 years. Incidence of Gastro Intestinal GI cancer is high over 40-85 years. The ratio of cancer among male to female is 1.67:1.0. In 2011, more than 1.5 million people around the world were diagnosed as having cancer. Among them, more than 570,000 died. Breast & GI cancer, especially colorectal cancer is the leading cause of death. according to the latest global most cancers report from the arena health corporation (WHO), extra girls in India are being newly diagnosed with most cancers annually. As in opposition to four. Seventy-seven lakh men, five.37 lakh girls had been identified with cancer in India 2012. these kinds of give an explanation for the significance of cancer and requires its spark off treatment. **Basheer Mohamed Abdalrahman (2014).**

Head and neck tumours are the 6th maximum commonplace most cancers worldwide. It accounts for more than 550,000 instances and 380,000 deaths yearly." in the United States, head and neck cancer debts for 3 percentage of malignancies, with about 63,000 people developing head and neck cancer every year and thirteen,000 demise from the disease eighty-three. In Europe, in 2012, there had been about 250,000 instances (an envisioned 4 percent of most cancers occurrence) and sixty-three,500 deaths

A. Objectives

➢ *The Objectives of the Study Are*

- To assess the level of oral mucositis among patient receiving chemotherapy drug before and after turmeric mouth wash in experimental group I.
- To assess the level of oral mucositis among patient receiving chemotherapy drug before and after saline mouth wash in experimental group II.
- To compare the effectiveness of turmeric mouth wash and Saline mouth wash on oral mucositis among patient receiving chemotherapy in experimental group I and
- II.
- To find out the association between the post test scores of oral mucositis among patient receiving chemotherapy in experimental group I and II and their selected boxcar variables

B. Hypothesis

➢ *The following Hypothesis were Formulated for the Study to be Tested at 0.05 Level ofSignificance*

- **H_1** There is a significant level of oral mucositis among patient receiving chemotherapy drug before and after turmeric mouth wash and saline mouth wash in experimental group I and experimental group II.
- **H_2** There is a significant effectiveness of turmeric mouth wash and Saline mouth wash on oral mucositis among patient receiving chemotherapy in experimental group I and II.
- **H_3** There is a significant association between the post test scores of oral mucositis among patient receiving chemotherapy in experimental group I and II and their selected boxcar variables.

II. LITERATURE REVIEW

Paiar et al., (2020) Mucositis motives 9 to 19% of chemotherapy and radiotherapy interruptions [7]. This has a examine emerge as supported thru Trotti a Bellm l. a. et al, who finished a take a look at to decide the prevalence of mucositis and correlation results in patients receiving radiotherapy (RT) for head and neck most cancers through a systematic assessment. normal with the have a look at protocol, databases have been looked or randomized medical trials (English excellent, 1996-1999) of head and neck maximum cancers sufferers receiving RT, a whole of 16% with or without chemotherapy, that counselled one or extra outcomes of hobby.

Setiawan, (2018) each day chlorhexidine oral rinse is frequently advocated for the prevention of chemotherapy-brought on oral mucositis. Povidone-iodine, NaCl 0. nine %, aqueous sodium salt and chamomile oral rinse also are recommended. but, the effectiveness of these oral rinse is

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unsure. therefore, we finished a scientific take a look at to evaluate the effectiveness of oral rinse in stop and alleviating chemotherapy-caused oral mucositis. based totally mostly on look at quality, 3 of the five randomized managed trials have been protected within the meta-evaluation. The effects confirmed no beneficial results of chlorhexidine conversely to bacteriostatic water or NaCl 0. nine %. patients charge of poor issue results of chlorhexidine, which includes teeth discoloration and flavour modifications in two of the 5 chlorhexidine research. In a single randomized managed trial, the severity of oral mucositis ends up shown to be reduced via using 30% with the use of povidone-iodine oral rinse in assessment to sterile water. these results do now not useful resource using chlorhexidine oral rinse to prevent oral mucositis.

Bensinger et al., (2018) primarily based totally on severity, OM is assessed as tolerable mucositis (grade 1 and a couple of mucositis) and intolerable mucositis (grade 3 and better) (Khanal et al., 2010). In HNC present way radiotherapy, tolerable mucositis starts off evolved off advanced in all sufferers and is viable, intolerable mucositis requires powerful ache contr ol, gastrostomy tube, IV line for nutritional supplementation (Elting et al., 2008). this could additionally result in discounts in radiotherapy and dose delays, even preventing planned radiotherapy, consequently complicating the underlying most cancers treatment.

III. METHODOLOGY

design: The research design selected for the existing look at became a real interventional research layout turned into selected to evaluate the success of turmeric oral rinse and Saline oral rinse on oral mucositis among affected person receiving chemotherapy. setting: the prevailing observes changed into performed at most cancers' distinctiveness centre. it's far located 30 Kms far from Dhanvantri university of Nursing. it's far a hundred and fifty bedded private clinic and has incredibly prepared techniques. An approximately 12 -15 sufferers are receiving chemotherapy treatment. sample: The samples selected for the present have a look at have been the sufferers receiving chemotherapy remedy in selected hospital who have been inclined to take part and gift throughout the length of statistics collection. sample size: the overall pattern size changed into 30 cancer sufferers, out of which 15 patients have been interventional group I and 15 patients were interventional corporation II. Sampling technique: non probability sampling tactics. improvement of tool: phase A It consists of boxcar characteristics of patients receiving chemotherapy, i.e., Age, each sex, cancer stages, own family history of cancer, period of contamination, prevalence of taking oral hygiene, life fashion conduct. section B countrywide most cancers Institute-commonplace toxicity standards- Oral Mucositis grading scale. it's miles a standardized device. It includes 13 items such as voice, consume, mucosa, saliva, Tongue, gums, Lips, Teeth, potential to continue nourishment, Flavors and Self-care assessment, each complement are having 3 options and score between 1 to 3. information series way: Permission from the involved authority; preceding to collection of records, permission modified into obtained from handling Director of cancer area of expertise Centre. length of records collection: The data grow to be accumulated from 01-08-2023 to 26 -09-2023. The investigator gathered the facts from each intervention class I and II. Pretest: Pretest changed into carried out earlier than beginning 2d cycle of chemotherapy remedy thru the usage of countrywide most cancers Institute-commonplace toxicity criteria- Oral Mucositis grading scale. Turmeric oral rinse (interventional group I) oral rinse answer prepared by means of blending five grams of turmeric powder with 50 ml of water. each time a 50 ml of freshly prepared turmeric oral rinse answer became administrated 2 instances a day for four weeks. Saline oral rinse (interventional group II) Medicated 50 ml of saline oral rinse solution changed into administrated 2 instances an afternoon for 4 weeks. post-test: publish take a look at turned into carried out after 29 days of chemotherapy remedy with the aid of the usage of countrywide most cancers Institute-commonplace toxicity - Oral Mucositis grading scale. Post evaluation: check the amount of oral mucositis among patient receiving chemotherapy drug before and after turmeric oral rinse in interventional institution I was analysed via the usage of relative frequency distribution. examine the extent of oral mucositis among patient receiving chemotherapy drug earlier than and after saline oral rinse in class II become analysed by means of the use of frequency and percent. evaluate the effectiveness of turmeric oral wash and Saline oral rinse on oral mucositis amongst patient receiving chemotherapy in interventional organization I and II became analysed by using mean, trendy deviation, mean percentage, paired 't' check and unpaired 'take a look at. find out the affiliation among the post-test rankings of oral mucositis amongst patient receiving chemotherapy in interventional institution I and II and their selected boxcar variables was analysed via the usage of Chi-rectangular check.

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IV. RESULTS

Table 1: Relative Frequency Distribution of Interventional Class I and II of Patients Receiving Chemotherapy According to their Boxcar Variables (N_1= 15, N_2=15)

S. No	Boxcar Variables	Intervention Class I		Intervention Class II	
		(N_1)	(%)	(N_2)	(%)
1.	Age in years				
	20-30	1	7	3	20
	31-40	5	33	3	20
	41-50	5	33	4	27
	Above 65	4	27	5	33
2	Gender				
	Male	8	53	10	67
	Female	7	47	5	33
3.	Cancer Stages				
	Cervical cancer	3	20	3	20
	Breast cancer	1	07	1	07
	Lung cancer	3	20	2	13
	Oral cancer	8	53	9	60
4.	Cancer Family history				
	Yes	6	40	5	27
	No	9	60	11	73
5.	Frequency of taking oral hygiene				
	1 time	9	60	10	67
	2 times	6	40	5	33
6.	Cancer Duration				
	Less than 6 months	1	07	0	0
	6 months – 1 year.	8	53	11	73
	1 – 2 yrs	6	40	4	27
	Above 2 years	0	0	0	0
7	Manner of living				
	Smoking	2	13	1	07
	Alcohol	4	27	2	13
	Chewing items	2	13	2	13
	Others	7	47	10	67

Table 2: Relative Frequency Distribution of the Interventional Class I Pre Test and Post Test Scores of Levels of oral Mucositis among Patient Receiving Chemotherapy (N1=15)

Mucositis Level	Intervention Class I			
	Fore Test		Post Test	
	(N)	(%)	(N)	(%)
No mucositis	0	0	12	80
Mild	0	0	3	20
Moderate	9	60	0	0
Severe	6	40	0	0

Table 3: Relative Frequency Distribution of the Interventional Class II Pre Test and Post Test Scores of Levels of Oral Mucositis among Patient Receiving Chemotherapy. (N_2=15)

Mucositis Level	Intervention class II			
	Fore Test		Post Test	
	(N)	(%)	(N)	(%)
No mucositis	0	0	8	53
Mild	3	20	7	47
Moderate	10	67	0	0
Severe	2	13	0	0

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Table 4: Relative Frequency Distribution of the Interventional Class I and II Post Test Scores of Levels of Oral Mucositis among Patient Receiving Chemotherapy. (N_1=15) (N_2=15)

Mucositis Level	Post Test Scores			
	Intervention Class I		Intervention Class II	
	(N)	(%)	(N)	(%)
No mucositis	12	80	8	53
Mild	3	20	7	47
Moderate	0	0	0	0
Severe	0	0	0	0

Table 5: Comparison of Mean, Standard Deviation, and Mean Percentage of Level of Oral Mucositis among Interventional Class I and II Pre and Post Test Scores

Patient receiving chemotherapy	Max scores	Fore test			Post test			Difference in mean %
		Mean	SD	Mean %	Mean	SD	Mean %	
Intervention class I	39	11.23	1.24	29	34.24	1.28	88	59
Intervention class II	39	9.83	1.33	25	24.07	1.27	61	36

Table 6: Paired ‘t’ Test Value of Fore Test and Post Test Scores of Oral Mucositis in Interventional Class I and II

Patient Receiving Chemotherapy	Paired ‘t’ Value	Table Value	Level of significant (P)
Intervention class I	14.43	2.15	P < 0.05 significant
Intervention class II	8.52	2.15	P < 0.05 significant

Df =14 Table value=2.15 P<0.05 significant

Table 7: Unpaired ‘t’ Test Value of Post Test Scores of Oral Mucositis in Interventional Class I and II

Patients taking chemotherapy	Unpaired ‘t’ value	Table value	Level of significant (P)
Level of oral mucositis	7.42	2.05	P<0.05 Significant

Df=28 Table value=2.05 P<0.05 significant

Table 8: Chi-Square Value of Association Between Intervention Class I Post Test Scores with their Boxcar Variables

Boxcar variables	DF	$\chi 2$	Table value	Level of significance
Age	1	0.71	3.84	P > 0.05 NS
Gender	1	1.99	3.84	P>0.05 NS
Cancer stages	2	2.51	5.89	P>0.05 NS
Cancer Family history	1	2.82	3.84	P>0.05 NS
Frequency of taking oral hygiene	1	1.46	3.84	P>0.05 NS
Cancer Duration	2	6.51	5.89	P<0.05 significant
Manner of living	1	1.45	3.84	P>0.05 NS

Table 9: Chi-Square Value of Association between Interventional Class II Post Test Scores with their Boxcar Variables

Boxcar Variables	DF	$\chi 2$	Table Value	Level of Significance
Age	1	0.80	3.84	P > 0.05 NS
Gender	2	0.45	5.89	P>0.05 NS
Cancer Stages	1	0.02	3.84	P>0.05 NS
Cancer Family history	1	0.77	3.84	P>0.05 NS
Frequency of taking oral hygiene	1	2.02	3.84	P>0.05 NS
Cancer Duration	1	1.87	3.84	P<0.05 Significant
Manner of living	2	6.49	5.89	P>0.05 NS

V. DISCUSSION

Frequency and percent distribution of no mucositis degree in Interventional class I before test and after take a look at amongst sufferers dealt with with chemotherapy suggests that most sufferers (60%) had moderate mucositis before check and 40% had excessive mucositis, even as in post-test 80 percent of patients had none mucositis. mucositis and 20% of them had mild mucositis in Interventional class I. Turmeric oral rinse appeared to be effective in reducing the level of oral mucositis in sufferers treated with chemotherapy (table 2).

The relative frequency distribution of mucositis stage in Intervention organization II before take a look at and after test amongst chemotherapy sufferers indicates that maximum sufferers before check (sixty-seven%) had mild mucositis and 20% had moderate mucositis, whilst in post-test fifty-three% of them did now not have mucositis and forty-seven% of sufferers had mild mucositis in Interventional class II. Saline

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oral rinse seemed to be effective in decreasing the level of oral mucositis in patients dealt with chemotherapy (Table 3).

The frequency and percent distribution of the level of mucositis in Intervention organization I and II after the test amongst patients treated with chemotherapy indicates that in Interventional class I, the majority (eighty%) of sufferers had no mucositis and 20% had slight mucositis, while in intervention class II, the general public (fifty-three %) of them had no mucositis and 47% of sufferers had slight mucositis. Turmeric oral rinse appeared to be more effective than saline oral rinse in decreasing degrees of oral mucositis in chemotherapy patients. Evaluate the effectiveness of turmeric oral rinse and Saline oral rinse on oral mucositis amongst patient receiving chemotherapy in Interventional class I and II. The effectiveness of turmeric oral rinse and Saline oral rinse become tested with the aid of the usage of general deviation, mean percent, paired 't' test and unpaired 't' check (Table 4)the general mean rating for the pretest suggest score turned into eleven.23 ± 1.24, which is 29%, even as within the posttest it become 34.24 ± 1.28, which is 88%, revealing a distinction of 59% in the Intervention class I. however, in Intervention class II, the pre-check score became 9.83 ± 1.33, that's 25%, whilst in the put up-check, it became 24.07 ± 1.27, which is sixty one%, revealing a difference of 36%. It indicates that turmeric oral rinse was more effective than saline oral rinse in decreasing the level of oral mucositis in chemotherapy sufferers (Table 5) Paired 't' test become calculated to investigate the effectiveness between pre and submit test ratings of Interventional class I and II on degree of oral mucositis among affected person receiving chemotherapy. The paired 't' takes a look at value turned into 14. forty-three and 8.52 in Interventional class I and II, while in comparison to table value (2.15) each are high. This shows that there was a sizeable effectiveness between publish test rankings of degrees of oral mucositis amongst sufferers receiving chemotherapy in the Interventional class I and II, (Table 6)

Unpaired 't' takes a look at become calculated to research the effectiveness between Intervention class I and II publish test ratings on stage of oral mucositis amongst patients taking chemotherapy. The unpaired 't' takes a look at price changed into 7. forty-two, when compared to table cost (2.05, $p<0.05$), it's far excessive. evidently turmeric oral rinse was more powerful than saline oral rinse in decreasing degree of oral mucositis amongst sufferers receiving chemotherapy (Table 7)

Chi-square turned into calculated to determine the affiliation among the posttest scores of the intervention class I sufferers dealt with chemotherapy and their boxcar variables (age, sex, most cancers degrees, family history of cancer, frequency of oral hygiene use, duration of cancer, and manner of living conduct). It suggests that a significant affiliation ($p<0.05$) was found only in the duration of cancer, while no significant association (p>zero.05) was discovered among the post-test ratings of the Interventional class I as compared to different boxcar variables consisting of age, gender, kinds of most cancers, circle of relative's records of cancer, frequency of oral hygiene and manner of living. hence, the differences observed in mean rating values had been merely coincidental and no longer real differences. Chi-square became calculated to decide the affiliation among the posttest rankings of the experimental organization I patients handled with chemotherapy and their boxcar variables (age, gender, most cancers degrees, own family records of cancer, frequency of oral hygiene use, period of most cancers, and manner of living conduct). It indicates that a sizable association ($p<0.05$) was found only in the duration of cancer, while no significant association ($p>0.05$) was determined between the put up-check rankings of the interventional class I in comparison to other boxcar variables together with age, gender, sorts of most cancers, family records of most cancers, frequency of oral hygiene and manner of living. for that reason, the variations determined in imply rating values had been merely coincidental and no longer actual variations. (Table 8)

Chi-square was calculated to determine the affiliation between posttest ratings of Interventional class II patients treated with chemotherapy with their boxcar variables (age, gender, most cancers tiers, family history of cancer, frequency of oral hygiene use, period of most cancers, manner of living. It shows that a considerable affiliation ($p<0.05$) was found only in the duration of cancer, while no significant association ($p>0.05$) turned into found among the publish-take a look at rankings of interventional class II in comparison to different boxcar variables including age, gender, kinds of most cancers, own family records of most cancers, frequency of oral hygiene and manner of living. thus, the variations found in suggest score values have been merely coincidental and not actual variations. (Table 9)

VI. CONCLUSION

The findings showed that the mean post-test rating of oral mucositis levels in cancer sufferers in Interventional class I used to be 34.24±1.28, whilst in Interventional class II the post-test imply rating turned into 24.07±1.27. It shows that turmeric oral rinse is more powerful than saline oral rinse in patients receiving chemotherapy. Paired "t" test and unpaired "t" check confirmed that in patients receiving chemotherapy, turmeric oral rinse turned into greater effective than saline oral rinse for oral mucositis. Chi-square test showed best the length of most cancers in each class and other boxcar variables have no sizeable association with the put up-check rating of oral mucositis degree in interventional class I and II.

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