

## Use of Curcumin in Radiochemotherapy Induced Oral Mucositis Patients: A Control Trial Study

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**Abstract :** Radiotherapy and chemotherapy are effective for treating malignancies but are associated with side effects like oral mucositis. Chlorhexidine gluconate is one of the most commonly used mouthwash in prevention of signs and symptoms of mucositis. Evidence shows that chlorhexidine gluconate has side effects in terms of colonization of bacteria, bad breath and less healing properties. Thus, it is essential to find a suitable alternative therapy which is more effective with minimal side effects. Curcumin, an extract of turmeric is gradually being studied for its wide-ranging therapeutic properties such as antioxidant, analgesic, anti-inflammatory, antitumor, antimicrobial, antiseptic, chemo sensitizing and radio sensitizing properties. The present study was conducted to evaluate the efficacy and safety of topical curcumin gel on radio-chemotherapy induced oral mucositis in cancer patients. The aim of the study is to evaluate the efficacy and safety of curcumin gel in the management of oral mucositis in cancer patients undergoing radio chemotherapy and compare with chlorhexidine. The study was conducted in K.L.E. Society's Belgaum cancer hospital. 40 oral cancer patients undergoing the radiochemotherapy with oral mucositis was selected and randomly divided into two groups of 20 each. The study group A [20 patients] was advised Cure next gel for 2 weeks. The control group B [20 patients] was advised chlorhexidine gel for 2 weeks. The NRS, Oral Mucositis Assessment scale and WHO mucositis scale were used to determine the grading. The results obtained were calculated by using SPSS 20 software. The comparison of grading was done by applying Mann-Whitney U test and intergroup comparison was calculated by Wilcoxon matched pairs test. The NRS scores observed from baseline to 1<sup>st</sup> and 2<sup>nd</sup> week follow up in both the group showed significant difference. The percentage of change in erythema in respect to group A was 63.3% for first week and for second week, changes were 100.0% with p = 0.0003. The changes in Group A in respect to erythema was 34.6% for 1<sup>st</sup> week and 57.7% in second week. The intergroup comparison was significant with p value of 0.0048 and 0.0006 in relation to group A and group B respectively. The size of the ulcer score was measured which showed 35.5% [P=0.0010] of change in Group A for 1<sup>st</sup> and 2<sup>nd</sup> week showed totally reduction i.e. 103.4% [P=0.0001]. Group B showed 24.7% change from baseline to 1<sup>st</sup> week and 53.6% for 2<sup>nd</sup> week follow up. The intergroup comparison with Wilcoxon matched pair test was significant with p=0.0001 in group A. The result obtained by WHO mucositis score in respect to group A shows 29.6% [p=0.0004] change in first week and 75.0% [p=0.0180] change in second week which is highly significant in comparison to group B. Group B showed minimum changes i.e. 20.1% in 1<sup>st</sup> week and 33.3% in 2<sup>nd</sup> week. The p value with Wilcoxon was significant with 0.0025 in Group A for 1<sup>st</sup> week follow up and 0.000 for 2<sup>nd</sup> week follow up. Curcumin gel appears to an effective and safer alternative to chlorhexidine gel in treatment of oral mucositis.

**Keywords :** curcumin, chemotherapy, mucositis, radiotherapy

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