

Effect of artificial saliva in oral candidiasis in patients undergoing radiation for cervicofacial malignancy

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ABSTRACT

Oral Candidiasis is more common in patients undergoing radiation therapy for cervicofacial malignancy. It is associated with alteration in the local & systemic mechanism of the host. It was thought that use of artificial saliva containing anti-microbial agent may help in prevention or reduction in occurrence of oral candidiasis. In the present study, artificial saliva containing 0.2% chlorhexidine gluconate was used for these patients undergoing radiation. On the basis of observation, it was concluded to be effective to reduce the severity of oral candidiasis.

Introduction

Oral candidiasis is an opportunistic infection. It is associated with alteration in the local & systemic defence mechanism of the host. It is more common in patients who have undergone radiation. Clinically it appears as superficial white patch which when wiped away leave bleeding surface. Natural saliva is proved to contain antimicrobial factor such as Lysozyme which acts against potential pathogens of the oral cavity. But it is observed that saliva is significantly reduced during radiation, it was thought that use of artificial saliva containing 0.2% chlorhexidine gluconate as an antimicrobial agent may help in prevention or reduction in occurrence of oral candidiasis.[1,2]

In the present study, 80 patients undergoing radiation were selected. Artificial saliva containing 0.2% Chlorhexidine gluconate was given to patient from the Study Group whereas no artificial saliva was given in Control Group. Patients of control Group were compared with corresponding patients of Study Group regarding the effectiveness of artificial saliva in prevention or reduction in occurrence of Oral candidiasis. On the basis of observation, it was concluded that artificial saliva containing antimicrobial agent is effective in prevention or reduction of oral candidiasis in patients undergoing radiation therapy.[9]

Aims & objectives

- 1) To evaluate the effect of artificial saliva in oral candidiasis in patients undergoing radiation therapy for cervicofacial malignancy.
- 2) To evaluate the effect of artificial saliva for reduction in occurrence & severity of oral candidiasis in these patients during radiation therapy.

Materials & Method

80 patients undergoing radiation therapy for cervicofacial malignancy were selected for this study. They were divided into 2 groups. 40 patients were selected as Control Group where no artificial saliva (Carboxy Methyl Cellulose) was given and 40 patients were considered under Study Group where artificial saliva containing 0.2% chlorhexidine gluconate was given. Patients of Control Group were compared with corresponding patients of Study Group regarding the effectiveness of artificial saliva in prevention of oral candidiasis .[4-6]

1	Control Group	40 Patients	No artificial saliva
2	Study Group	40 Patients	Artificial saliva given

40 Patients from Study Group were advised to use artificial saliva from the start of radiation. These patients were instructed to swish the artificial saliva in the mouth for 1-2 min and then swallow it slowly. They were advised to repeat it frequently throughout the day. These patients were reviewed at the end of every week and observed for the effectiveness of artificial saliva for prevention or reduction in occurrence of oral candidiasis.[6]

Results

In the Control Group, only 1 patient was observed with mild candidiasis before start of radiation. As the radiation progressed, the no. of patients with candidiasis started increasing from end of 3rd week. The patients with mild & moderate candidiasis started increasing from the end of 3rd & 4th week of radiotherapy. At the end of 6th week of radiation, patients with mild & moderate oral

Group	Period	Oral Candidiasis		
		Mild	Moderate	Severe
Control Group	6th Week	3 Patients	5 Patients	0 Patients
	6th Week Post radiation	7 Patients	0 Patients	0 Patients
Study Group	6th Week	5 Patients	2 Patients	0 Patients
	6th Week Post radiation	6 Patients	0 Patients	0 Patients

candidiasis increased to 3 patients & 5 patients respectively. No patient was observed with severe candidiasis throughout the radiation period. By the end of 6th week post radiation period, 7 patients with mild symptoms and no patients with moderate or severe candidiasis were observed.

In the Study Group of 40 patients only 1 patient was observed with mild candidiasis before start of radiation. As the radiation progressed, the no. of patients with candidiasis started increasing from the end of 4th week. The patients with mild & moderate candidiasis started increasing from the end of 4th & 5th week of radiation. At the end of 6th week of radiation, patients with mild & moderate candidiasis increased to 5 patients & 2 patients respectively. No patient was observed with severe candidiasis throughout the radiation. By the end of 6th week post-radiation, 6 patients with mild candidiasis and no patients with moderate/severe candidiasis were found.

Discussion

Oral candidiasis is seen in patients undergoing radiation therapy for cervicofacial malignancy. Reduced salivary flow and altered microbial flora during radiation therapy predisposes to the occurrence of oral candidiasis. In the present study, on comparison, it was observed that in Control Group, patients with mild candidiasis started increasing from the end of 3rd week, while in Study Group; mild candidiasis was observed at the end of 4th week of radiation. In the Control Group, patients with moderate candidiasis was observed at the end of 4th week where as in Study Group, it was observed at the end of 5th week of radiation. This shows that use of artificial saliva may help in delaying the occurrence of oral candidiasis.

Conclusion

In the study Group, percentage of patients with mild candidiasis is more and with moderate candidiasis is less, as compared to Control Group. From the above observation, it was concluded that artificial saliva may be useful in reducing the severity of Oral candidiasis in these patients. In Control Group, no. of patients with moderate candidiasis were reduced to nil at the end of 5th week. Whereas, in

the Study Group, they were reduced to nil at the end of 4th week of post-radiation therapy. These observations show that during post-radiation period, use of artificial saliva is not so effective in reducing & recovery from oral candidiasis.

Wiesenfeld et al & Bernhoft et al did not find any change with oral candidiasis after using Carboxy Methyl Cellulose saliva.[3,10] Bernhoft & Skang in their invitro study did not find CMC saliva to affect the growth of oral candida.[3] S.Gravenmade et al found mucin based artificial saliva to have antifungal activity. However no detail study is available regarding the same.[7,8]

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