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Original Research

Evaluation of efficacy of Chlorhexidine Digluconate and Iodoform in treating dry socket patients- A comparative study

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***ABSTRACT*:**
Background: Dry socket, is the most common complication following a dental extraction and one of the most studied complications in dentistry. Hence; we planned the present study to assess and compare the efficacy of topical application of chlorhexidine digluconate with topical application of combination of Iodoform and Butylparaminobenzoate in the management of dry socket. **Materials & Methods:** We planned included comparison of the efficacy of topical application of chlorhexidine digluconate with topical application of combination of Iodoform and Butylparaminobenzoate in the management of dry socket. A total of 50 dry socket patients were included in the present study and were broadly divided into two study groups as follows: Group A: Included patients treated with chlorhexidine digluconate, Group B: Included patients treated with combination of Iodoform and Butylparaminobenzoate. All the results were analyzed by SPSS software. **Results:** Pain disappeared from all the candidates of subjects of group B on day 5, while in group A, disappearance of pain occurred on day 5. **Conclusion:** In managing dry socket patients, efficacy of Iodoform and butylparaminobenzoate combination is more in comparison to chlorhexidine digluconate gel.
Key words: Alveolar osteitis, Dry socket, Iodoform

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INTRODUCTION

Dry socket, is the most common complication following a dental extraction and one of the most studied complications in dentistry. There are up to 17 different definitions for the clinical diagnosis of dry socket. Blum described dry socket as the presence of "postoperative pain in and around the extraction site, which increases in severity at any time between one and three days after the extraction, accompanied by a partially or totally disintegrated blood clot within the alveolar socket, with or without halitosis" excluding any other cause of pain on the same side of the face.[1-3]

Its incidence is approximately 3% for all routine extractions and can reach over 30% for impacted mandibular third molars, and many factors have been cited as contributing to the occurrence of dry socket including difficult or traumatic extractions, female sex, tobacco use, oral contraceptives and preexisting infection.[4-6]

Hence; we planned the present study to assess and compare the efficacy of topical application of chlorhexidine digluconate with topical application of combination of Iodoform and Butylparaminobenzoate in the management of dry socket.

MATERIALS & METHODS

We planned the present study in the department of oral surgery of the dental institute and it included comparison of the efficacy of topical application of chlorhexidine digluconate with topical application of combination of Iodoform and Butylparaminobenzoate in the management of dry socket. A total of 50 dry socket patients were included in the present study and were broadly divided into two study groups as follows:

Group A: Included patients treated with chlorhexidine digluconate,

Group B: Included patients treated with combination of Iodoform and Butylparaminobenzoate

We obtained written consent from all the patients after explaining in detail the entire research protocol, before the starting of the study. Complete demographic details of

all the patients was obtained and compiled. The diagnosis of dry socket was made after clinical evaluation of extraction socket, appearance of denuded bone, history of pain 3-4 days following extraction and trismus. Dressing was given in all the patients for five days. For assessment of intensity of pain, Visual Analogue Scale (VAS) was used. All the results were analyzed by SPSS software. Chi-square test was used for assessment of level of significance. P- value of less than 0.05 was taken as significant.

RESULTS

Table 1 shows the demographic details of the patients. Mean age of the patients of the group A and group B was 44.5 and 48.1 years respectively. Mean weight of the patients was group A and group B was 68.5 and 66.4 Kg respectively. There were 15 males in group A and 13 males in group B. table 2 shows the comparison of VAS score among subjects of group A and group B. Pain disappeared from all the candidates of subjects of group B on day 5, while in group A, disappearance of pain occurred on day 5.

Table 1: Demographic details of the patients in the present study

Parameter	Group A	Group B
Mean age (years)	44.5	48.1
Mean weight (Kg)	68.5	66.4
Males	15	13
Females	10	12

Table 2: Comparison of VAS score

Time		Group A	Group B	P-value
Day 4	S1	18	25	0.02*
	S2	7	0	
Day 5	S1	25	25	1

*: Significant

DISCUSSION

It has been suggested that increased local fibrinolytic activity is the main etiological factor in developing dry socket. Increased in fibrinolytic activity could result in the premature loss of the intraalveolar blood clot after extraction. The fibrinolysis is the result of plasminogen pathway activation, which can be achieved via direct (physiologic) or indirect (nonphysiologic) activator substances. Direct activators are released after trauma to the alveolar bone cells. Indirect activators are secreted by bacteria. Apart from its

Pain disappeared from all the candidates of subjects of group B on day 5, while in group A, disappearance of pain occurred on day 5. Dodson T analyzed the prevention and treatment of dry socket. Cochrane Oral Health Group Trials Register, Cochrane Central Register of Controlled Trials (CENTRAL), Medline and Embase databases were searched together with reference lists of identified articles. Topic experts and organisations were also contacted. Data abstraction and risk of bias assessment were conducted in duplicate and Cochrane statistical guidelines were followed. The GRADE tool was used to assess the quality of the body of evidence. Twenty-one trials with 2570 participants were included. Eighteen trials (2376 participants) related to prevention and three to treatment (194 participants). Six studies were at high risk of bias, 14 of unclear risk and one study at low risk. There was moderate evidence (four trials, 750 participants) that chlorhexidine mouthrinses (0.12% and 0.2% concentrations) both before and after extraction(s) prevented approximately 42% of dry socket(s) with a RR of 0.58 (95% CI 0.43 to 0.78; P < 0.001). The number of patients needed to be treated (0.12% and 0.2%) with chlorhexidine rinse to prevent one patient having dry socket (NNT) was 232 (95% CI 176 to 417), 47 (95% CI 35 to 84) and 8 (95% CI 6 to 14) at prevalences of dry socket of 1%, 5% and 30% respectively. Thee was moderate evidence (two trials, in 133 participants) that placing chlorhexidine gel (0.2%) after extractions prevented approximately 58% of dry socket(s) with a RR of 0.42 (95% CI 0.21 to 0.87; P = 0.02) with NNT of 173 (95% CI 127 to 770), 35 (95% CI 25 to 154) and 6 (95% CI 5 to 26) at prevalences of dry socket of 1%, 5% and 30% respectively. There was insufficient evidence to determine the effects of other intrasocket preventive interventions or interventions to treat dry socket. There is some evidence that rinsing with chlorhexidine (0.12% and 0.2%) or placing chlorhexidine gel (0.2%) in the sockets of extracted teeth, provides a benefit in preventing dry socket. There was insufficient evidence to determine the effects of the other 10 preventative interventions each evaluated in single studies. There was insufficient evidence to determine the effects of any of the interventions to treat dry socket. The present review found some evidence for the association of minor adverse reactions with use of 0.12%, 0.2% and 2% chlorhexidine mouthrinses, though most studies were not designed to detect the presence of hypersensitivity reactions to mouthwash as part of the study protocol. No adverse events were reported in relation to the use of 0.2% chlorhexidine gel placed directly into a socket (though previous allergy to chlorhexidine was an exclusion criterion in these trials). In view of recent reports in the UK of two cases of serious adverse events associated with irrigation of dry socket with chlorhexidine mouthrinse, it is recommended that all members of the dental team prescribing chlorhexidine products are aware of the potential for both minor and serious adverse side effects.[10] Taberner-Vallverdú M analyzed the efficacy of different methods used in preventing dry socket in order to decrease its incidence after tooth extraction. A Cochrane and PubMed-MEDLINE database search was conducted with the search terms "dry socket",

"prevention", "risk factors", "alveolar osteitis" and "fibrynolitic alveolitis", both individually and using the Boolean operator "AND". The inclusion criteria were: clinical studies including at least 30 patients, articles published from 2005 to 2015 and written in English. The exclusion criteria were case reports and nonhuman studies. 30 publications were selected from a total of 250. Six of the 30 were excluded after reading the full text. The final review included 24 articles: 9 prospective studies, 2 retrospective studies and 13 clinical trials. They were stratified according to their level of scientific evidence using SIGN criteria (Scottish Intercollegiate Guidelines Network). All treatments included in the review were aimed at decreasing the incidence of dry socket. Locally administering chlorhexidine or applying platelet-rich plasma reduces the likelihood of developing this complication.[11]

CONCLUSION

Under the light of above results, the authors conclude that in managing dry socket patients, efficacy of Iodoform and butylparaminobenzoate combination is more in comparison to chlorhexidine digluconate gel. However; future studies are recommended.

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