

Comparing the Efficacy of Alvogyl and Zinc Oxide Eugenol Dressing For the Treatment of Dry Socket: A Double Blind Randomised Study.

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ABSTRACT

Background: The most common unpleasant post operative complication following extraction of permanent teeth is Dry socket. The primary goal of treatment for dry socket is pain relief. Local dressings will do better pain relief and faster healing. **Aim:** To compare the effectiveness of Alvogyl and Zinc oxide eugenol dressings placed intra alveolar for the management of dry socket. **Methods:** All the patient who underwent extraction of teeth and who satisfied the inclusion and exclusion criteria were included in the study. Patients who were diagnosed to suffer from dry socket were randomly allocated to two groups name Group A (Zinc oxide Eugenol) and Group B (Alvogyl). Pain relief was compared between the two groups. **Results:** In all the level of time assessed Alvogyl showed the statistically significant difference in relieving pain than Zinc oxide eugenol dressings. Alvogyl required less number of dressings when compared to zinc oxide eugenol. **Conclusion:** Alvogyl is far better than the Zinc oxide eugenol dressing for providing pain relief in dry socket.

Keywords: Intra alveolar dressing, Alvogyl, Zinc oxide eugenol, Dry socket.

INTRODUCTION

The most common postoperative complications following extraction of permanent teeth are the Dry socket or Alveolar osteitis. Crawford was the first to describe dry socket in 1896.^[1] The other terms to describe dry socket includes localized osteitis, post-extraction osteomyelitis syndrome, avascular socket, alveolgia, alveolitis sicca Dolorosa and fibrinolytic alveolitis.^[2] Dry socket has a multifactorial etiology. General factors include age, sex, nutritional deficiency and decreased body resistance. Local factors include anatomical location, trauma during surgery, smoking, local circulation, fibrinolysis of clot and vasoconstrictors.^[3]

Bacteria play a key role in developing dry socket. Nitzan in his review described the role of anaerobic organisms in the pathogenesis of dry socket. *Treponema denticola* an organism found abundantly in association with the gingival disease have extracellular plasmin like activity.^[4]

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Many attempts have been made to find a solution for dry socket. Antibiotics both systemic and local, chlorhexidine, tranexamic acid, steroids, eugenol dressings, lavage, have been proposed. But nothing found to be the good solution for dry socket.^[5] Fazakerley and Field indicated the primary aim of dry socket management is pain control.^[6] In most cases local measures alone are satisfactory. Sometimes systemic analgesics and antibiotics may be necessary. The use of intra alveolar dressing materials is widely suggested. Different medicaments were available.

Aim

To compare the effectiveness of Alvogyl and Zinc oxide eugenol dressings placed intra alveolar for the management of dry socket.

MATERIALS AND METHODS

This study was carried out in the Department of dental surgery, Tirunelveli Medical College Hospital. Tirunelveli. After obtaining approval from the research and ethical committee, all patients who reported to the department for dental extraction were included in the study. Exclusion criteria included conditions such as pregnancy, radiotherapy history, and fascial space infections.

Patients reported with pain after tooth extraction were evaluated. Diagnosis of the dry socket was clinically established according to the following:

1. Pain around the extraction socket with or without radiation 1 or 3 days after extraction.
2. Partial or total clot loss with or without halitosis.

Patients were randomly assigned using randomization table to one of the two groups A or B to receive treatment. The patient was managed as follows:

Group A: Management of dry socket by Zinc Oxide Eugenol (ZOE).

Group B: Management of dry socket by Alvogyl. The socket was cleaned by warm sterile saline irrigation. No curettage was done. Try to avoid dislodging any residual clot present in the socket.

Zinc oxide eugenol dressing

A gauze piece soaked with freshly prepared ZOE paste was placed into the socket, intra alveolar under aseptic precautions.

Alvogyl dressing

A few fibers of Alvogyl were placed deep into the socket, intra alveolar followed by placement of sterile gauze. The gauze was removed after 5 min.

Table 3: Distribution of VAS

Duration	Group	N	Mean	Std. Deviation	P Value
5 Minutes	Zinc Oxide Eugenol	20	5.95	1.190975	<0.0001
	Alvogyl	20	4.55	0.998683	
30 Minutes	Zinc Oxide Eugenol	20	4.85	0.587143	0.001
	Alvogyl	20	4.05	0.825578	
1 Hour	Zinc Oxide Eugenol	20	4.65	0.67082	0.008
	Alvogyl	20	4.05	0.686333	
Day 1	Zinc Oxide Eugenol	20	4.95	0.887041	<0.0001
	Alvogyl	20	1.2	0.695852	
Day 2	Zinc Oxide Eugenol	20	2.8	0.833509	<0.0001
	Alvogyl	17	0.294118	0.469668	
Day 3	Zinc Oxide Eugenol	20	0.85	0.587143	0.004
	Alvogyl	5	0	0	
Day 5	Zinc Oxide Eugenol	15	0	0	N/A
	Alvogyl	0	.	.	

In all the period of pain assessment 5 min, 30 min, 1 hour, day 1, day 2, day 3 and day 5 Alvogyl is comparatively better than Zinc oxide eugenol dressing. There is a statistical difference between the two groups.

[Table 3] shows the group comparison with respect to the duration of time the pain assessed with p value. Independent sample t test is used to compare the groups.

The initial time for pain relief was compared between the two groups. Zinc oxide eugenol had a mean value of 26.89 minutes for initial pain relief whereas Alvogyl had a mean value of 10.6 minutes. Alvogyl dressing is statistically significant from zinc oxide eugenol dressing in initial time for pain relief.

Time taken for final pain relief was compared between the groups. Alvogyl dressing had statistically significant difference from zinc oxide eugenol dressing.

The pain level was assessed by visual analog scale after 5 min, 30 min, 1 hr, day 1, day 2, day 3 and day 5 after placement of the medicament. The dressings were evaluated by a blinded examiner at every follow-up visit. The dressing was changed in case of persistence of pain. No further dressings were done if the patients had pain relief for more than 48 hrs.

RESULTS

Description for table 1 and 2: shows cross tabulation between the groups with respect to age and gender. Pearson chi square test is used. There found to be no predilection for age or gender seen.

Table 1: Distribution of Gender.

Group	Gender		Total
	Male	Female	
Zinc oxide eugenol	13	7	20
Alvogyl	9	11	20

Table 2: Distribution of Age

Group	N	Mean	Std. Deviation
Zinc Oxide Eugenol	20	36.2	10.39534
Alvogyl	20	38.35	9.906271

[Table 4] shows the statistical comparison between the groups in initial and final pain relief. Independent sample t test is used.

Table 4: Distribution of Pain relief

Pain	Group	N	Mean	Std. Deviation	P Value
Initial Pain Relief	Zinc Oxide Eugenol	19	26.89474	10.39709	<0.0001
	Alvogyl	20	10.6	5.393954	
Final Pain Relief	Zinc Oxide Eugenol	19	3.421053	1.21636	0.005
	Alvogyl	20	2.25	1.208522	

When comparing the number of dressing changed between the two groups, alvogyl had minimum of number of dressings than zinc oxide eugenol. P value is significant, there is a statistical difference

between the two groups. Pearson chi square test is used here.

[Table 5] shows the difference between zinc oxide eugenol and Alvogyl with respect to the number of dressings.

Table 5: Distribution of number of dressings

Group	Dressing			Total	P value
	2	3	4		
Zinc oxide eugenol	1	7	12	20	<0.0001
Alvogyl	12	8		20	

DISCUSSION

Dry socket is considered to be an important clinical complication in dentistry. Dry socket is the most common complication following extraction of teeth by general dentists and specialists. It is not possible to avoid dry socket completely in the day to day practice.

Pain relief is considered the primary goal of treatment in case of dry socket. The composition of both Alvogyl and Zinc oxide eugenol contains eugenol, which acts as the sedative and anodyne effects as well as had antibacterial properties. Alvogyl also contains butamben (anesthetic) and iodoform (antimicrobial). Blum,^[2] Ahmad and Bloomer suggested using Zinc oxide eugenol in the management of dry socket.^[7,8]

Bloomer and Alexander recommend Alvogyl in managing dry socket.^[8,9] Retardation of healing and inflammation were reported by Syrjanen and Syrjanen when using Alvogyl.^[10]

In our study, the statistically significant difference was obtained in the pain scores among patients treated with zinc oxide eugenol and Alvogyl. In all the level of time assessed Alvogyl showed the statistically significant difference in relieving pain than Zinc oxide eugenol dressings. Alvogyl required less number of dressings when compared to zinc oxide eugenol.

The aim of treatment in the dry socket is palliation. But the pain is the subjective factor which can vary in degree from person to person. Hence it is important to evaluate other clinical parameters to provide a more objective comparison of treatment methods.

CONCLUSION

The study concludes Alvogyl dressing is considered to be a better alternative for Zinc oxide eugenol dressing for the treatment of dry socket.

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