

# Comparison between Alvogyl and Zinc Oxide Eugenol Packing for the Treatment of Dry Socket

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## ABSTRACT

**Background:** Dry socket is one of the most common complications following permanent tooth extraction, especially mandibular molars. Management remains controversial and different authors have shown different results with the use of Alvogyl and zinc oxide eugenol. Some preferring Alvogyl over zinc oxide eugenol. Objective to determine the incidence, possible risk factors and compare the effectiveness of two most commonly used agents (Zinc oxide eugenol and Alvogyl) for management of dry socket. This prospective study is aimed at evaluating the efficacy of Alvogyl in alleviating symptoms of dry socket when compared to the traditional method of ZOE paste. Null hypothesis states that there is no difference between Alvogyl & ZOE in treatment of dry socket. The alternate hypothesis states that Alvogyl is better than ZOE in treatment of dry socket. **Methods:** All the 40 patients were randomly allocated in two groups of 20 patients each. In group A Alvogyl paste was used as intra socket medicament while in group B Zinc oxide eugenol paste was used as an obtundent into the extraction socket. **Results:** Decrease in the intensity of pain was significantly more in the case of Group A when compared to that of Group B. In group A complete healing was noted in all the patients on 5th day compared to 12 patients in group B. **Conclusion:** Both the medicaments showed positive outcomes but Alvogyl proved slightly better than ZOE in our Study.

**Keywords:** Dry socket, Alveolar osteitis, Alvogyl, ZOE.

## INTRODUCTION

Dry socket/alveolar osteitis (AO) is one of the most common and unpleasant postoperative complications following extraction of permanent teeth. The term "dry socket" has been used in literature since 1896, when it was first described by Crawford.<sup>[1]</sup> Efforts have been made to define dry socket more accurately through the use of terms such as AO, localized osteitis, post extraction osteomyelitis syndrome, alveolgia, avascular socket, alveolitis sicca dolorosa, delayed extraction wound healing, and fibrinolytic alveolitis. However the term dry socket continues to be used popularly.<sup>[2]</sup> characterized by intense throbbing pain, accumulation of disintegrated clot and food debris in the socket and malodor. The etiology of the dry socket has not been wellknown. However, certain theories suggest that the contributing factors to the etiology that includes early dislodgment of blood clot of extraction site, also any trauma due to surgery, secondary infection, or any nutritional deficiency, or mechanical dislodgement of any clot, also decreased the particularly vascularity, drug-

induced includes oral contraceptives, and tobacco-induced Alvogyl (Septodont, France) is an intra-socket medication for dry socket containing Iodoform (15.8%) as an antimicrobial, Butylparaminobenzoate (25.7%) as an anaesthetic, Eugenol (13.7%) which retards the inflammatory process and also relief the pain by inhibiting the action of prostaglandins and Penghawar (3.5%) as an anti-inflammatory agent.

## MATERIALS AND METHODS

This prospective randomized studies were carried out in this department of Dentistry, Hind Institute of Medical Sciences Ataria Sitapur (UP) after obtaining approval from the research and ethical committee. A total of 40 patients who required treatment of dry socket after extraction were included in the study. Routine blood investigations were done for all the patients and intra-oral periapical radiograph (RVG) were obtained to exclude presence of root fragment or bony fragments within the socket. All the patients were randomly allocated in two groups. Group A(N=20 patients) -Alvogyl paste as an intra-socket medication. This paste is a proprietary preparation containing Iodoform (15.8%) as an antimicrobial, Butylparaminobenzoate (25.7%) as an anesthetic, Eugenol (13.7%) as an analgesic and Penghawar (3.5%) as an anti-inflammatory agent. Group B (N=20 patients)- a Zinc Oxide Eugenol (ZOE) as an obtundent dressing. The patients were blinded to the use of Alvogyl. A standardized procedure for

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follow-up was observed for all patients as per protocol. All patients in the study routinely receive Tab Ketorolac (10 mg orally S.O.S) as rescue medication. Before the insertion of medication in the socket; clinical findings e.g. pain, degree of inflammation and amount of bone exposed was noted. Patients who are allergic to components of Alvogyl/ZOE and/or to medications prescribed in the study, Pregnant patients, patients on oral contraceptives or medically compromised patients were excluded from the study.

## RESULTS

Out of 40 patients [Table 1] 29 Females accounting for 72.5% and only 11 males i.e. total 27.5%. Patient age ranged from 20 years till 70 years and the mean age is 33.7 years. The maximum number of the patient's i.e. 20 patients were between the age group of 25 to 40 years. Prevalence for the dry socket was seen to be more in the mandible than that of maxilla i.e. 31:09 in a ratio of 3.4:1

It was observed that the incidence of dry socket in patients who underwent single tooth extraction was much higher than those who underwent multiple extractions (single extraction to multiple extraction ratio was 4.4:1). This was in spite of the fact that more teeth were extracted in the multiple extraction subgroup. By applying Z test of proportionality, it was evident that the difference in incidence was statistically significant. The incidence of dry socket was found to be higher in cases of trans-alveolar extraction than in intra-alveolar extraction (trans-alveolar extraction to intra-alveolar extraction ratio was 8.36:1). Chi square analysis revealed that this difference  $\chi^2 = 121.79$  (d.f. = 1;  $P(0.0001)$ ) to be statistically significant.

**Table 1: Common Age Group And Gender**

Age group	Female	Male	Total
<25	8	3	11
>25 to <40	17	3	20
>40	4	5	8
Total	29	11	40

**Table 2: Pain Relief with various medicament**

Medicament	No. of sockets	Mean time for initial pain relief (in min)	Mean time for complete resolution of pain (in days)	Average number of dressing required
Alvogyl	40	7.35	6.47	3
ZOE pack	40	25.02	8.64	4

The VAS scores var field in follow-up period i.e. ( $P<.001$ ) and the intensity in case of pain lowered in both the groups over a period of time. This decrease was significantly more in the case of Group A when compared to that of Group B. For both, the groups patients did not take the rescue medications i.e. Tab Ketorolac 10 mg during the treatment. On the 5th day, pain symptoms have completely eliminated in group A, but for group B, 09 patients reported with some degree of pain.

Numbers of walls exposed were considered equal in both the groups. In group A complete healing was noted in all the patients on 5th day compared to 12 patients in group B. On 7th day in group B, 4 patients had either one or two walls exposed.

**Table 3: No of wall Exposed**

No. of walls exposed	Group A	Group B
One wall	4	7
Two wall	13	13
Three wall	3	0
Four wall	0	0

## DISCUSSION

According to the present study the most consistent clinical finding was pain, as this was noted in all 40 sockets (100 %). This is consistent with the observations of Larsen and Nusair and Abu Younis.<sup>[3,4]</sup> Based on the results of the present study, it is evident that more than 50 % of the patients had

only pain as the prominent clinical finding. It may therefore be inappropriate to term the condition ‘‘dry socket’’, and we would prefer the term post extraction alvolgia or post extraction alveolitis. The appearance of the dry socket may therefore at best be considered a form of post extraction alveolitis where the clot disintegrates substantially or completely.

Study by Mac Gregor,<sup>[5]</sup> showed a higher incidence of dry socket in females, which is consistent with the finding of the present study. This may be due to the fact that prior to 1960 oral contraceptives were not appreciably used.<sup>[6]</sup> Ygge et al.<sup>[7]</sup> and also Sweet and Butler,<sup>[8]</sup> reported that oral contraceptive pills increased fibrinolytic activity in the blood and saliva of women during the menstrual phase. In our study there was a significantly higher incidence of AO among contraceptive users.

Nusair and Abu Younis,<sup>[4]</sup> and Amaratunga and Senaratne,<sup>[9]</sup> reported highest incidence of dry socket in 3rd and 4th decades of life. Krogh,<sup>[10]</sup> reported a dramatic reduction in later decades. Most surgical extractions in these studies were performed in patients who were in their 3<sup>rd</sup> and 4<sup>th</sup> decades. Surgical extractions are generally associated with higher incidence of dry socket.<sup>[4,11]</sup> Findings of the present study correlate well with the above.

Alexander and Bloomer recommend Alvogyl for the management of dry socket. Syrjanen and Syrjanen reported retardation of healing and inflammation when sockets were packed with Alvogyl.<sup>[12-14]</sup>

## CONCLUSION

Onset of pain relief with Alvogyl was faster than ZOE. Although ZOE was most cost effective and easily available medicament for dressing. Both the medicaments showed positive outcomes but alveogyl proved slightly better than ZOE.

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