

Efficacy of Alvogyl and Lidocaine Gel in the Management of Dry Socket

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ABSTRACT

Background: To compare the efficacy of topical application of alvogyl following irrigation with normal sterile saline and chlorohexidine rinse 0.2% following topical application of lidocaine gel. **Methods:** This study was conducted at the department of oral diagnosis department of Liaquat university hospital Hyderabad from March 2018 to 10 August 2018. Total number of sixty patients with clinical signs of dry socket were enrolled in this study. Patient with post extraction history of pain within 42 to 72 hours along with extreme pain, halitosis and denuded condition of socket were set in inclusion criteria. Visual Analogue Scale (VAS) was measurement scale for pain from day 1 to 3. **Results:** Mean age of the group I was 35.10+13.33 years, while mean age of group II was 29.93+9.74 years. In lidocaine group females were in majority i.e 17 out of 30, while male were 13, while in Alvogyl group 16 were male and 14 were female. On day 3rd assessment according to VAS mild and moderate pain was found significantly high in lidocaine group i.e in 20 and 09 patients respectively, in the contrast of Alvogyl group showed mild pain in 10 cases while no any patient was found with moderate or severe pain. P-value 0.0001. **Conclusion:** Alvogyl is the best management for dry socket in terms of relieving pain of the patient as compare to lidocaine.

Keywords: Dry socket, Alvogyl, Lidocaine, Gel, Efficacy.

INTRODUCTION

Dry socket (Devoid of Clot) is also called alveolar osteitis. It is the post extraction socket. It occurs when the tolerant feels the ache due to blood loss. As a result, there is an exposure to air, food and fluids.^[1] Crawford described "dry socket" in 1896.^[2] The symptoms of dry socket include progressive and severe pain which initiates after 48 hours of extraction. Other symptoms like Halitosis, foul taste, or regional lymphadenitis can also exist. After 5 to 10 days, alveolar osteitis is resolved without intervention. While the patient requires numerous follow up visits and experiences decreased quality of life.^[3,4] The best strategy which can be achieved to prevent occurrence of Dry socket is providing an aseptic environment, drinking through straw, smoking, unnecessary mouth rinsing and avoiding unintentional instrumental trauma.^[2] The occurrence of dry socket after extraction of non-surgical tooth can vary between 1% and 4%. On the other hand, the frequency of alveolar osteitis also follows surgical extraction of mandibular third molar varies 5% to

30% according to the previous studies.^[5] Steroidal anti-inflammatory (NSAID) is the drug prescribed for the treatment of dry socket are prescribed to decrease the discomfort. Prior to insertion of a medicated dressing, socket should be cleaned to promote healing. Dressing should be changed every day unless the pain starts to decrease and the socket begins to heal.⁶ There are very several treatment methods which are recommended for dry socket. Topical application of alvogyl.^[2-7] Chlorohexidine (CHX) is a kind of antiseptic which is effective on aerobic as well as anaerobic bacteria.^[8,9] Moreover, Morrow and Berry specified in their studies that lidicone have an antibacterial impact on common oral organisms such as Streptococcus and Candida.^[10]

The purpose of this study was to compare the efficacy of topical application of alvogyl following irrigation with normal sterile saline with chlorohexidine rinse 0.2% following topical application of lidocaine gel.

MATERIALS AND METHODS

This project was carried out at the oral diagnosis department of Liaquat university hospital Hyderabad from March to August 2018. A total of sixty diagnosed cases of dry socket were enrolled in the study. The study design was cross sectional and

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convenience and non-probability sampling technique.

Inclusion Criteria:

- Patient having tooth extraction done in past 42 to 72 hours Patients report within 72 hours of injury.
- Severe pain
- Extraction sockets showing sensitivity on mild probing
- Halitosis

Exclusion Criteria:

- Patient not willing to participate in this study.
- Patients having diseases like diabetes mellitus, hepatic dysfunctions, blood dyscrasias, bleeding disorders
- Use of systemic antibiotics for dry socket
- Any other treatment already started for dry socket.

Data collection procedure:

Scale used for measuring Pain was Visual Analogue Scale (VAS) i.e. mild pain as ranged from 1-4; moderate pain ranged from 5-7 and severe pain ranged from 8-10. Distribution of patients was done randomly into two separate group i.e. patients of group A were treated by local application of lidocaine gel followed by irrigation of chlorohexidine gluconate 0.2 % and that of group B by first irrigation with normal saline solution followed by administration of Alvogyl in the socket. Then oral tablets of Ibuprofen were prescribed in both treatment groups. Follow up OF subjects was carried out for three uninterrupted days. On each visit dressing was replaced and clinical findings of were noted in predesigned proforma.

Statistical Analysis

Analysis of data was done through SPSS version 20 software. Mean and standard deviation were planned for quantitative variables like age. Frequency and percentage were calculated for categorical variables like age, gender and pain (mild, moderate, severe). T-test was applied for comparison of age in both groups. For the calculation and comparison of categorical variables, a chi-square test was applied. P-value less than 0.05 was considered as noteworthy.

RESULTS

In this study total 60 cases were selected and further subdivided in two groups. Mean age of the group I was 35.10+13.33 years, while mean age of group II was 29.93+9.74 years. No significant difference was found in both groups according to age P-value 0.89. [Table 1].

In this series in lidocaine group female were in majority 17 out of 30 while male were 13, while in

Alvogyl group gender wise patients were almost equal 16 were male and 14 were female, as well as no significant difference was found in both groups according to gender p-value 0.43. [Table 2].

In this study pain was measured by Visual Analogue Scale (VAS), on the day 1 stassessment almost all cases were noted with severe pain in both groups p-value 1.0. On day two according to VAS assessment severity of pain as well as moderate pain was found significantly high in lidocaine group as compare to Alvogyl group p-value 0.0001. Further on day 3rd assessment according to VAS mild and moderate pain was found significantly high in lidocaine group in 20 and 09 patients respectively in the contrast of Alvogyl group as mild pain was in 10 cases while no any patient was found with moderate or severe pain p-value 0.0001, results showed in [Table 3].

Table 1: Patients distribution according to age n=60

Age	Groups		P-Value
	Lidocaine n=30	Alvogyl n=30	
Mean	35.10 years	29.93years	0.89
SD	13.33 years	9.74years	
Minimum	20 years	18 years	
Maximum	70 years	61 years	

Table 2: Patients distribution according to gender n=60

Gender	Groups		P-Value
	Lidocaine n=30	Alvogyl n=30	
Male	13 (43.33%)	16 (53.33%)	0.43
Female	17 (56.66%)	14 (46.66%)	

Table 3: Patients distribution according to pain assessment from day 1 to 3 in both groups n=60

Pain	Groups		P-Value
	Lidocaine n=30	Alvogyl n=30	
Pain day 1			1.00
Severe	30 (100%)	30 (100%)	
Pain Day 2			0.0001
No pain	0 (0.0%)	5 (16.66%)	
Mild	9 (30.0%)	21 (70.0%)	
Moderate	21 (70.0%)	4 (13.33%)	
Pain Day 3			0.0001
No pain	1 (3.33%)	20 (66.66%)	
Mild	20 (66.66%)	10 (33.33%)	
Moderate	9 (30.0%)	0 (0.0%)	

DISCUSSION

Dry socket is usually a self-limiting condition. However, as pain is severe, the patient requires symptomatic treatment.^[11] We had conducted this study to compare the efficacy of topical application of Alvogyl following irrigation with normal sterile saline with chlorohexidine rinse 0.2% following topical application of lidocaine gel. In this study total 60 cases were selected and further subdivided in two groups. Mean age of the group I was 35.10+13.33 years, while mean age of group II was

29.93+9.74 years. No significant difference was found in both groups according to age P-value 0.89. Similarly Abbas Iet al,^[12] reported that Mean age was 31.68 and majority of the patients were found in third decade. This finding is consistent with other studies such as that of age showed no significant effect on both treatment groups (p=0.668).^[12,13] In the comparison of our study Ryalat ST et al,^[14] reported that mean age of the 50 patients was 23 years (range: 17-50 years). There were 34 women and 16 men.

In this series in lidocaine group female were in majority 17 out of 30 while male were 13, while in Alvogyl group gender wise patients were almost equal 16 were male and 14 were female, as well as no significant difference was found in both groups according to gender p-value 0.43. On other hand Abbas Iet al,^[11] reported that in group A there were 22 (73.33%) males and 8 (26.66%) females and in group B there were 23 (76.66%) males and 7 (23.33%) females. There was no significant effect of gender on both of the treatment groups (p=0.766). In the favor of this study Claesson Let al,^[15] reported that out of all dry sockets, 69% was developed in women. This might be in part because of the increased fibrinolytic activity in blood and saliva in the menstrual phase. Garcia et al.^[16] also found that oral contraceptives play an important role in the incidence of Dry socket in women.

In this study pain was measured by Visual Analogue Scale (VAS), on the day 1st assessment almost all cases were noted with severe pain in both groups p-value 1.0. On day two and day 3rd assessment according to VAS mild and moderate pain was found significantly high in lidocaine group in 20 and 09 patients respectively in the contrast of Alvogyl group as mild pain was in 10 cases while no any patient was found with moderate or severe pain p-value 0.0001. Similarly Abbas I et al,^[11] reported that Alvogyl produces better outcomes to Chlorhexidine i.e. on second, third and fourth day of treatment there was a tremendous improvement in pain relief of group B patients (Alvogyl group) with P=0.000, P=0.000 and P=0.02 respectively. While in some other studies reported that Chlorhexidine if used for preoperative prophylaxis would remain a good remedy in reducing incidence of dry socket and might have shown good results.^[17,18] While inconsistently Khan AR et al,^[19] reported that more than 60 percent of ozone controlled patients found ozone a pain reliever, compared to 20 percent of patients getting pain relieved from Alvogyl. On other hand Ryalat ST et al,^[14] reported that a foreign-body giant cell reaction was seen to be provoked when Alvogyl was administered in sockets that hamper the usual healing progression. However, it may be useful to use Alvogyl as a sterile dressing after the diagnosis of alveolar osteitis, as its components may dull the pain, and help in providing a more pain-free interval until normal healing can be

re-achieved. No more such studies has been found in the literature specially on comparison efficacy of topical application of alvogyl following irrigation with normal sterile saline with chlorohexidine rinse 0.2% following topical application of lidocaine gel.

CONCLUSION

We concluded that Alvogyl is the best management for dry socket in terms of relieving pain of the patient as compare to lidocaine. Alvogyl is the reliable with significant low rate of complication. More randomized studies are needed to further progression in the favor of our findings.

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