

Original Article

Comparison of efficacy of Chlorhexidine Digluconate Gel and Combination of Iodoform & Butyl Paraminobenzoate in Management of Dry Socket- A Clinical Study

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ABSTRACT:

Background: Dry socket (Alveolar osteitis) is inflammation of the alveolar bone. It is postoperative complication of tooth extraction. In this study we compared the efficacy of topical application of chlorhexidine digluconate with topical application of combination of iodoform and butyl paraminobenzoate in the management of dry socket. **Materials & Methods:** 90 patients of dry socket were included in the present study and were divided into 2 groups. Group I comprised of 45 patients who were treated with topical application of chlorhexidinedigluconate gel and group II consisted of 45 patients who were treated with Iodoform and butyl paramino benzoate (Alvogyl). Visual Analogue Scale (VAS) was used to assess the intensity of pain ie. mild- 1-4, moderate- 5-7 and severe- 8-10. **Results:** On day 1, both groups had S1 pain. On day 2, group I had S2-12, S3-33 and group II had S1-15, S2-10 and S3-20. The difference was significant (P<0.01). On day 3, group I had S1-10, S2-15 and S3-20 while group II had S1-40, S2-5. On day 4, group I had S1-35 and S2-10 while group II had S1-45. The difference was significant (P<0.01). On day 5, both groups had mild pain (S1-45). **Conclusion:** Iodoform and butylparaminobenzoate (Alvogyl) combination is more effective in controlling pain as compared to chlorhexidine digluconate gel in dry socket.

Key words: Alveolar osteitis, Dry socket, Iodoform.

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INTRODUCTION

A dry socket also referred to as alveolar osteitis is a post operative complication that interferes with the healing process that takes place after a tooth extraction. Blum defined alveolar osteitis as “post operative pain inside and around the extraction site, which increases in severity at any time between the first and third day after the extraction, accompanied by a partial or total disintegrated blood clot within the alveolar socket with or without halitosis”.¹

Alveolar osteitis usually occurs where the blood clot fails to form or is lost from the socket. This leaves an empty socket where bone is exposed to the oral cavity, causing a localized alveolar osteitis limited to the lamina dura (i.e., the bone which lines the socket). This specific type of alveolar osteitis is also known as dry socket or, less commonly, fibrinolyticalveolitis, and is associated with increased pain and delayed healing time. Dry socket occurs in about 0.5–5% of routine dental extractions, and in about 25–30% of extractions of impacted mandibular third molars. Alveolitis,

localized osteitis, alveolitis sicca dolorosa, localized alveolar osteitis, fibrinolytic alveolitis, septic socket, necrotic socket and alveolagia are synonyms of the same. “Dry socket” was first described by Crawford in 1896.²

Patient complains of dull, aching, throbbing pain in the area of the socket, which is moderate to severe and may radiate to other parts of the head such as the ear, eye, temple and neck. The pain normally starts on the second to fourth day after the extraction, and may last 10–40 days. The pain may be so strong that even strong analgesics do not relieve it. Intraoral halitosis and bad taste in the mouth are other common symptoms.³

Various treatment options are available for dry socket. Topical application of a combination of eugenol, benzocain and balsam of Peru; Iodoform and Butylparamino benzoate, and Honey have been tried for pain relief. Prophylactic administration of systemic beta lactamase inhibitor containing antibiotic have been claimed in reducing incidence of dry socket.⁴ The present study was conducted to assess 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

This study was conducted in the department of Oral surgery. It comprised of 90 patients of both genders. All were informed regarding the study and written consent was obtained. Ethical clearance was taken prior to the study. General information such as name, age, gender etc was recorded in case history performa. 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.

Patients were randomly divided into 2 groups. Group I (45) comprised of 45 patients who were treated with topical application of chlorhexidine digluconate gel and group II consisted of 45 patients who were treated with Iodoform+ Butyl paraminobenzoate (Alvogyl). Patients were given dressings for 5 days. Visual Analogue Scale (VAS) was used to assess the intensity of pain ie. mild- 1-4, moderate- 5-7 and severe- 8-10. Results thus obtained were subjected to statistical analysis using chi- square test. P value <0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 90	
Group I (chlorhexidine digluconate gel)	Group II (Iodoform+ Buty lparaminobenzoate)
45	45

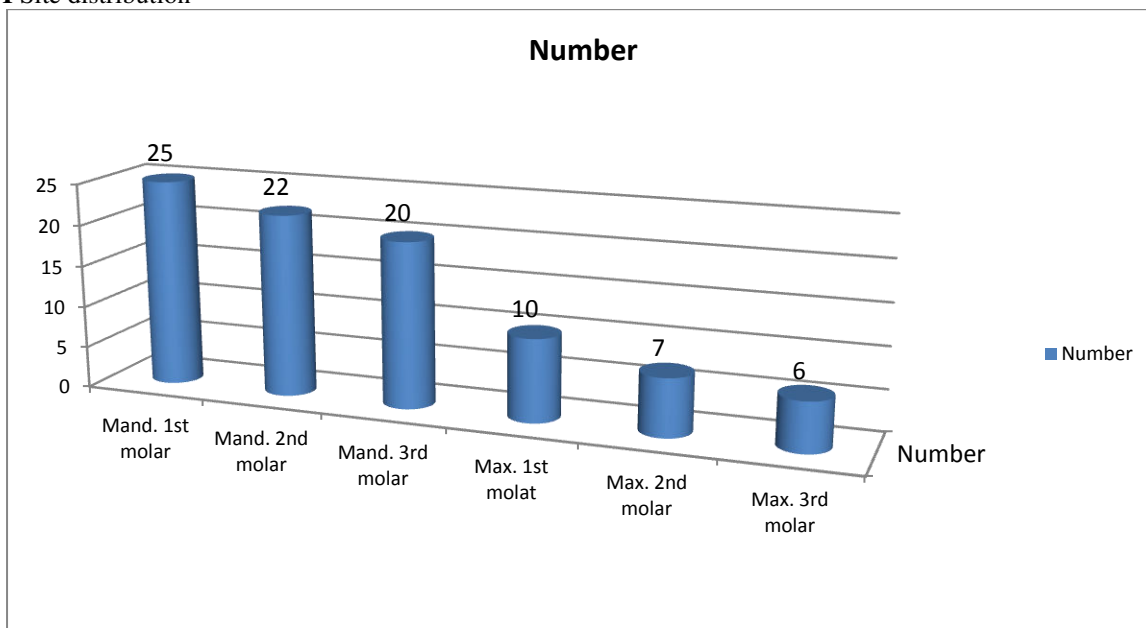
Table I shows that group I (45) was put on chlorhexidinedigluconate gel and group II (45) on combination of Iodoform + Butyl paraminobenzoate.

Table II Gender wise distribution of patients

	Group I	Group II
Males	22	25
Females	23	20

Table II shows that group I had 22 males and 23 females while group II had 25 males and 20 females.

Graph I Site distribution



Graph I shows that tooth involved was mandibular first molar (25) followed by mandibular second molar (22), mandibular third molar (20), maxillary first molar (10), maxillary second molar (7) and maxillary third molar (6). The difference was significant (P-0.01).

Table III VAS score in both groups

		Group I	Group II	P value
Day 1	S3	45	45	1
	S1	0	15	
Day 2	S2	12	10	0.01
	S3	33	20	
Day 3	S1	10	40	0.05
	S2	15	5	
	S3	20	0	
Day 4	S1	35	45	0.01
	S2	10	0	
Day 5	S1	45	45	1

Table III compares VAS score in both groups. On day 1, both groups had S1 pain. On day 2, group I had S2-12, S3-33 and group II had S1-15, S2-10 and S3-20. The difference was significant (P-0.01). On day 3, group I had S1-10, S2-15 and S3-20 while group II had S1-40, S2-5. On day 4, group I had S1-35 and S2-10 while group II had S1-45. The difference was significant (P-0.01). On day 5, both groups had mild pain (S1-45).

DISCUSSION

The cause(s) of dry socket are not completely understood. Normally, following extraction of a tooth, blood is extravasated into the socket, and a blood clot (thrombus) forms. This blood clot is replaced with granulation tissue which consists of proliferating fibroblasts and endothelial cells derived from remnants of the periodontal membrane, surrounding alveolar bone and gingival mucosa. In time this in turn is replaced by coarse, fibrillar bone and finally by mature, woven bone.⁵ The clot may fail to form because of poor blood supply (e.g., secondary to local factors such as smoking, anatomical site, bone density and conditions which cause sclerotic bone to form). The clot may be lost because of excessive mouth rinsing, or disintegrate prematurely due to fibrinolysis.^[3] Fibrinolysis is the degeneration of the clot and may be caused by the conversion of plasminogen to plasmin and formation of kinins. Factors which promote fibrinolysis include local trauma, estrogens, and pyrogens from bacteria. The present study was conducted to assess the efficacy of topical application of chlorhexidine digluconate with topical application of combination of Iodoform and Butylparamino benzoate in the management of dry socket.⁶ In this study, both groups had 45 patients each. Group I had 22 males and 23 females while group II had 25 males and 20 females. Most commonly involved tooth was mandibular first molar followed by mandibular second molar, mandibular third molar, maxillary first molar, maxillary second molar and maxillary third molar. This is in agreement with the results by Anand et al.⁷ In this study, group I was put on chlorhexidine digluconate gel and group II on combination of Iodoform and butyl paraminobenzoate. We compared the VAS score in both groups. We found that with the progression of days from day 1 to 5, the pain severity gradually decreased in group II as compared to group I.

The difference was statistically significant. This shows that iodoform and butyl paraminobenzoate combination is more effective in controlling pain in dry socket. This is in accordance to Alexander et al.⁸ Local application of the Alvogyl in the empty socket can show its effect more effectively. Eugenol of clove oil (in Alvogyl) depresses sensory receptors involved in pain perception by inhibition of prostaglandins biosynthesis.⁹ Alvogyl pack itself works by acting as a physical barrier between the exposed bone along with exposed nerve endings and the oral environment. Iodoform is a powerful antiseptic. Chlorhexidine on the other hand could be considered only for its antiseptic effect and providing a weak barrier for covering exposed bone not as strong as Alvogyl.¹⁰

CONCLUSION

Iodoform and butyl paraminobenzoate (Alvogyl) combination is more effective in controlling pain in dry socket. This was more efficient in relieving psychological burden from patient. There is no need to give antibiotic in patient with dry socket.

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