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ORIGINAL ARTICLE

Comparison of Iodoform and Paraminobenzoate for The Managment of Dry Socket

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ABSTRACT

Objective: The aim of present study is to compare effectiveness of two different modalities Iodoform and Para-Aminobenzoate for the management of Dry socket.

Material And Methods: Patients reported with dry socket at the OPD of Oral and Maxillofacial Surgery, Institute of Dentistry, Liaquat University of Medical and Health Sciences, after mandibular molar tooth extraction were included After thorough irrigation with sterile saline and followed up for three alternative days by replacing dressing and then findings were recorded in the designated proforma of the patients. Pain was measured by Visual Analogue Scale (VAS).

Results: The mean age of group A was 26.18+4.41 years and mean age in group B was observed 26.0+3.92 years. Males were predominantly reported in both groups. In this study 3rd molar extraction was commonest as 81.1% in group A. Similarly 3rd molar extraction was 85.5% in group B. Most of the cases of both groups underwent surgical extraction. In our study mostly onset symptoms were seen at 72 hours in both study groups. On day 3 and 4 pain was markedly decrease in patients of group B as compared to group A, p-values were quite insignificant (p=0.001).

Conclusion: Para-Aminobenzoate showed better effectiveness in decreasing the pain from day 2nd.

Keywords: Dry socket, Iodoform, Para-Aminobenzoate, Pain

INTRODUCTION

Following the removal of a permanent tooth, dry socket/alveolar osteitis is one of the highly prevalent and unpleasant post-operative complications. After 1896, when Crawford first reported it, the phrase "dry socket" has been employed in literature.[1] Alveolar osteitis, localised osteitis, post extraction osteomyelitis syndrome, alveolalgia, avascular socket, alveolitis sicca dolorosa, delayed extraction wound healing, and fibrinolytic alveolitis have all been used to try to characterise dry socket more precisely. Although, the phrase "dry socket" is still widely employed.[1-2]

The problem is commonly preceded with vague, agonising, pounding pain in the vicinity of the socket, that is considerable to extreme and may spread to various areas of the head such as the ear, eye, temple, and neck, as well as deteriorated or prolonged recovery consistent with clot degeneration.[3,4] The discomfort usually begins on the second to fourth day following the surgery and can persist anywhere from 10 to 40 days. Even powerful analgesics may not be enough to alleviate the discomfort.[7] Dry socket may often be associated by halitosis and a bad taste in the mouth. Dry socket can be caused by a variety of reasons, including a problematic or painful extraction, a pre-existing infection, gender, smoking, oral contraceptive usage, menstruation, and an insufficient blood supply.[5,6]

Dry socket occurs three times more frequently in the mandible than in the maxilla, with a documented prevalence of 3% to 4% following normal dental extractions and 1% to 45 % after removal of the mandibular third molars.[3,8] in addition Women are more likely than guys to suffer from dry socket. It happens in 0.5-5 % of regular dental extractions and 25-30% of impacted mandibular third molar extractions. The cause of dry socket is yet unclear.[4] Both patients and surgeons might suffer from dry socket. Since at least 45 % of sufferers necessitate numerous trips to the surgeon 's clinic, this unpleasant disease can lead to a lack of productivity. Dry socket can also be expensive in regards of the time spent in the clinic managing the patient 's complaints.[2] Maintaining an aseptic workplace, minimizing unintended instrumental injury, sipping via a straw, smoking, and extensive tongue rinsing remain the greatest strategies for preventing dry socket.[9] Antiseptic mouthwashes, antifibrinolytic medications, antibiotics, steroids, and clot-supporting medicines can all help to reduce the occurrence. Pain management has been attempted using a topical mixture of eugenol, benzocain, and balsam of Peru, as well as honey. The use of a systemic beta lactamase inhibitor-containing antibiotic as a preventative measure has been shown to reduce the occurrence of dry socket.[4] Nevertheless, no specific strategy has achieved general recognition in this field, making it a contentious topic.[9] Some studies has been conducted at national and international level to see the combine effectiveness of Iodoform+ Butylparaminobenzoate,[10-12] but no studies were found on the comparison on these two drugs. Therefore this study has been conducted to compare effectiveness of two different modalities Iodoform and Para-Aminobenzoate for the management of Dry socket.

METHODOLOGY

From November 2020 to October 2021, a cross-sectional comparative research using non-probability convenience

sampling was undertaken at the Oral and Maxillofacial Surgery Department, Institute of Dentistry, Liaquat University of Medical and Health Sciences, Jamshoro and Hyderabad. Raosoft's online calculator was used to compute the sample size. The margin of error was used as 3.5% at 95% confidence interval with response distribution/ prevalence as 3.3% (A total of 3.3% extractions were found to be effected by dry socket in patients between age 11 to 80 years old[8]) 10 % inflation is being done because there may be lost follow ups. Therefore the total sample size calculated was 110. Half of the sample (55) will be treated by Paraminobenzoate and half of the (55) will be treated by Iodoform.

Inclusion Criteria

- 18 years and above.
- Either gender
- Previously diagnosed case of dry socket but untreated.
- Dry socket in the mandibular permanent molar extraction.

Exclusion criteria

- Earlier radiotherapy, any medical problem that might impact the management of a dry socket (e.g., bone pathologic characteristics, vascular or hematologic diseases, diabetes mellitus), antibiotic usage, pregnancy or breastfeeding
- Patients with history of smoking.
- Patients using oral contraceptives

Data Collection Procedure: The University's Ethical Review Board was consulted for permission. All of the participants were given written informed permission before pain was evaluated using the Visual Analogue Scale (VAS). Patients' pain was graded on a scale of one to three, with mild pain being graded S1 and ranging from 1-4, moderate pain being graded S2 and ranging from 5-7, and severe pain being graded S3 and ranging from 8-10. Patients were randomly divided in two treatment groups (on even and odd method) i.e. patients of group A were treated by local application of Iodoform and group B by local treatment with paraminobenzoate. After thorough irrigation with sterile saline and followed up for three alternative days by replacing dressing.

Data Analysis: The Statistical Package for Social Sciences (SPSS) version-20 was used to analyse the data. For Pain and gender, descriptive data were utilised to calculate frequency and %. Mean and standard deviation (SD) were calculated for age. To evaluate pain (VAS) between two medication regimens, as well as the influence of age and gender on two treatment groups, the T-test was used. At a 95% confidence interval, a P value of 0.05 was considered significant.

RESULTS

In this study total 110 patients were comparatively studied as per two study groups. The mean age of group A was 26.18+4.41 years and mean age in group B was observed 26.0+3.92 years, findings were statistically insignificant (p=0.062). Table.1

According gender assessment in both groups, there were 60.0% males and 40.0% females in group A, while 58.2% were males and 41.8% were females in group B. However results were statistically insignificant (p=0.846). Table.2

In this study 3rd molar extraction was commonest as 81.1% followed by 2nd molar extraction 5.5% and 1st molar extraction was 12.7% in group A. Similarly 3rd molar extraction was 85.5% in group B including 3.6% 2nd molar extraction and 10.9% was 1st molar extraction, while results were non-significant on comparison of tooth extraction in both groups (p=0.0852). Table.3

Most of the cases of both groups underwent surgical extraction. In group A out of 55 cases 72.7% cases underwent surgical extraction and non-surgical extraction was done in 27.3% cases. Though 80.0% cases of group B were undergone surgical extraction and 20% underwent non-surgical extraction, this cross tabulation among both groups showed non-significant findings (p=0.369). Table.4

In our study mostly onset symptoms were seen at 72 hours in both study groups as in group A most of cases were found with onset of symptoms at 72 hours and 25.5% patients were noted with onset symptoms at 48 hours, on other hand in group B 78.2% patients were observed with onset symptoms at 72 hours and remaining 21.8% were seen with onset symptoms at 48 hours, results regarding duration of onset symptoms were non- significant among both groups (p=0.654). table.5

Table.1 Descriptive statistics of age of both groups n=110

Study groups	N	AGE (Mean+Std. Deviation)	p-value
Iodoform	55	26.18+4.41 years	0.062
Para-Aminobenzoate	55	26.0+3.92 years	

Table.2 Gender distribution among both groups n=110

Gender	Study group		P-value
	Iodoform	Para-Aminobenzoate	
Male	33	32	0.846
	60.0%	58.2%	
Female	22	23	
	40.0%	41.8%	
Total	55	55	
	100.0%	100.0%	

Table.3 Tooth extraction according to study groups n=110

Tooth extract	Study group		P-value
	Iodoform	Para-Aminobenzoate	
1st molar	7	6	0.852
	12.7%	10.9%	
2nd molar	3	2	
	5.5%	3.6%	
3rd molar	45	47	
	81.8%	85.5%	
Total	55	55	
	100.0%	100.0%	

On day 1 mean of VAS was seen non-significant in both groups, almost patients were noted with moderate

pain in both groups (p=0.732). On day 2 pain was more decreased in group B as compared to group A (p=0.001). On day 3 and 4 pain was markedly decrease in patients of group B as compared to group A p-values were quite insignificant (p=0.001). Table.6

Table.4 Types of extractions according to study groups n=110

Extraction	Study group		P-value
	Iodoform	Para-Aminobenzoate	
Surgical extraction	40	44	0.369
	72.7%	80.0%	
Non-surgical extraction	15	11	
	27.3%	20.0%	
Total	55	55	
	100.0%	100.0%	

Table.5 Onset symptoms comparison in both study groups n=110

Onset symptoms	Study group		P-value
	Iodoform	Para-Aminobenzoate	
48 hour after extraction	14	12	0.654
	25.5%	21.8%	
72 hours after extraction	41	43	
	74.5%	78.2%	
Total	14	12	
	100.0%	100.0%	

Table.6 VAS Score comparison in both study groups n=110

Tooth extract	Study group		P-value
	Iodoform	Para-Aminobenzoate	
1st Day	8.90+0.58	8.94+0.52	0.732
2nd Day	5.98+0.95	5.25+0.92	0.001
3rd Day	3.50+1.19	2.54+0.93	0.001
4th Day	0.80+0.64	0.32+0.47	0.001

DISCUSSION

In this study the mean age of group A was 26.18+4.41 years and mean age in group B was observed 26.0+3.92 years, findings were statistically insignificant (p=0.062). Although Similarly Supe NB et al[11] reported the age range of the patients in the present study was 18–51 years, with a mean age of 32.32 years and majority of the patients were in their third decade of life. On other hand Majati et al[13] who reported the affected age range to be from 15 to 65 years, with a mean age of 32.78 years. Rauf et al[14] found a mean age of 32.9 years at the time of presentation of patients with dry socket. In the study by Fahimuddin et al[5] the mean age at the time of presentation of patients with dry socket was found to be 31.68 years.

In this study there were 60.0% males and 40.0% females in group A, while 58.2% were males and 41.8% were females in group B. Similarly Supe NB et al[11] reported that out of the fifty patients of dry socket, 29 (58%) were female and 21 (42%) were male, with a ratio of 1.4:1. Faizel S et al[1] reported that male were 79 (43.2%) and female patient were 104 (56.8%). However, there was no significant effect of gender on both of the treatment groups. However inconsistently our findings are in contrast to the results of Fahimuddin et al[5] who reported 45 males and 15 females with dry socket in their study with a male-to-female ratio of 3:1. This gender predilection may be attributed to a better health seeking behavior of females, but some researchers have associated it with hormonal changes and others with the use of oral contraceptive pills, which increase fibrinolytic activity in blood and saliva of women during the menstrual phase.[12]

In this study 3rd molar extraction was commonest as 81.1% followed by 2nd molar extraction 5.5% and 1st molar extraction was 12.7% in group A. Similarly 3rd molar extraction was 85.5% in group B including 3.6% 2nd molar extraction and 10.9% was 1st molar extraction, while results were non-significant on comparison of tooth extraction in both groups (p=0.0852). Similarly Majati et al[13] found the highest incidence of dry socket in the mandibular third molar followed by mandibular second molar and mandibular first molar. Faizel et al[1] also observed the highest incidence of dry socket in mandibular third molar. However inconsistently Supe NB et al[11] reported the mandibular first molar (17 [43.58%) had the highest incidence of dry socket occurrence followed by mandibular third molar (13 [33.33%]) and mandibular second molar (09 [23.07%). On other hand contrast findings were observed by Fahimuddin et al[5] in their study who reported the highest incidence of dry socket in mandibular first molar followed by mandibular third molar and mandibular second molar. The possible reason for this difference may be the dental treatment neglect of the patient as well as the high caries index since most of the first molars that were extracted were grossly decayed. Grossly decayed teeth usually result in pathologic fracture during extraction, thus increasing the difficulty level of extraction.

In this study most of the cases of both groups underwent surgical extraction in both groups and mostly onset symptoms were seen at 72 hours in both study groups as in group A most of cases were found with onset of symptoms at 72 hours and 25.5% patients were noted with onset symptoms at 48 hours, on other hand in group B 78.2% patients were observed with onset symptoms at 72 hours and remaining 21.8% were seen with onset symptoms at 48 hours, results regarding duration of onset symptoms were non- significant among both groups (p=0.654). No such studies have been found in the literature regarding comparison of duration of treatment in terms of onset duration in between these two groups.

In this study on day one mean of VAS was seen non-significant in both groups, almost patients were noted with moderate pain of both groups (p=0.732). However on 2nd day to 4th days significant pain decreases was found in Para-Aminobenzoate group as compared to Iodoform group (p=0.001). However no such studies has been found in the literature reading this comparison among these two groups, while some studies had been seen in the literature with combine effectiveness of these two drugs as Supe NB et al[11] conducted study on efficacy of alvogyl (Combination of Iodoform + Butylparaminobenzoate) and zinc oxide eugenol for dry socket and they observed that alvogyl (Combination of Iodoform + Butylparaminobenzoate) is better for the management of dry socket by virtue of shorter time required for complete pain relief, fewer visits for dressing change, and faster clinical healing of the socket.

Faizel et al[1], on the contrary side, conducted a prospective research to assess and evaluate the efficacy of neocone, alvogyl, and ZOE intraalveolar dressings for the treatment of dry socket. They discovered that alvogyl outperformed the other two drugs in terms of giving immediate pain reduction. Neocone, on the other hand, gave total pain reduction and accelerated recovery. Moreover, Kusumastiwi PO et al[15] undertaken a research to evaluate the treatment results of dressings containing a mixture of butyl aminobenzoate, eugenol, and iodoform, as well as other dry socket remedies, in terms of pain solace and socket curing, and they found that all of the treatments that include in the evaluation have the same goal of relieving the patient 's suffering. The findings are challenging to evaluate due to the variety of treatments and measuring scales used. When it comes to pain control and socket repair, the combo of butyl aminobenzoate, eugenol, and iodoform outperforms ZOE. Numerous other therapies seems to be preferable than the mixture of butyl aminobenzoate, eugenol, and iodoform for socket repair and pain alleviation from the second day following extraction. On the other hand, in another piece, a distinct outcome occurs.[14] It shows that the mixture of butyl para-aminobenzoate and iodoform has a gradual effect on lowering enlarged lymph nodes, redness surrounding the gingiva, and halitosis.

CONCLUSION

It was concluded that Para-Aminobenzoate showed better effectiveness in decreasing the pain from day 2nd. However on days one rate of VAS (pain) was almost similar in both groups. We recommended that further studies should be done on this comparison to assess the best confidence on any one drug from these which may non-invasive instead of combine application of these both and others as demonstrated in previous and old and recent studies.

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