

## Original Research

### Assessment of efficacy of Er:Cr:YSGG and Alvogyl in the Management of Alveolar Osteitis: A comparative study

<sup>1</sup>Shahid Farooq, <sup>2</sup>Hashim Ahad, <sup>3</sup>Ajaz Ahmad Shah

<sup>1</sup>Senior Resident, <sup>2</sup>PG Student, <sup>3</sup>Professor and Head, Department of Oral and Maxillofacial Surgery, Govt Dental College and Hospital, Srinagar, Jammu and Kashmir, India

#### ABSTRACT:

**Background:** The present study was conducted for assessing the efficacy of Er:Cr:YSGG and Alvogyl in the Management of Alveolar Osteitis. **Materials & methods:** 40 patients who reported with post-extraction pain (non-surgical extraction including third molar) and subsequently diagnosed with AO were randomly divided into two groups (thirty each) as follows Group A: Loose dressing of alvogyl (Septodont), and Group B: Decontamination of socket was done using an Er:Cr:YSGG laser. Follow Up was done and every patient was reviewed on 4th, 10th and 14th post treatment day using a modified healing score under following variables: Denuded bone, Absence of healthy granulation tissue, and Tenderness. For each present variable, score of 1 was given while for each absent variable, score of 0 was given. Total of these gave final healing score. Score 0 indicates minimal healing and score 3 represents best healing. All the results were recorded and analyzed by SPSS software. **Results:** Mean modified healing score among subjects of group A at 4<sup>th</sup> day, 10<sup>th</sup> day and 14<sup>th</sup> day was 1.8, 2.8 and 2.2 respectively. Mean modified healing score among subjects of group B at 4<sup>th</sup> day, 10<sup>th</sup> day and 14<sup>th</sup> day was 2.6, 2.9 and 2.4 respectively. Significant results were obtained while comparing the modified healing score among subjects of group A and group B at 4<sup>th</sup> day. **Conclusion:** The present study demonstrated faster improvement in healing with Er:Cr:YSGG in comparison to Alvogyl.

**Key words:** Diode LASER, Alvogyl, Alveolar osteitis

Received: 15 October, 2021

Accepted: 18 November, 2021

**Corresponding author:** Dr. Shahid Farooq, Senior Resident, Department of Oral and Maxillofacial Surgery, Govt Dental College and Hospital, Srinagar, Jammu and Kashmir, India, drshahid.533@gmail.com

**This article may be cited as:** Farooq S, Ahad H, Shah AA. Assessment of efficacy of Er:Cr:YSGG and Alvogyl in the Management of Alveolar Osteitis: A comparative study. J Adv Med Dent Sci Res 2021;9(12):175-177.

#### INTRODUCTION

Alveolar Osteitis (AO) is a well-known complication after extraction or surgical removal of tooth. Commonly known as “dry socket” this condition remains a common postoperative problem that results in severe pain and repeated practice/hospital visits. The increase in recovery period translates into increased cost to the surgeon as 45% of patients who develop AO typically require multiple postoperative visits in order to manage this condition. However, the exact pathogenesis of AO is not well understood. Many researchers have studied alveolar osteitis, but most concepts are still subject to significant controversy.<sup>1-3</sup>

The frequency of AO has been the subject of many articles in the literature. The lack of objective clinical criteria leads to considerable variability in the reported frequency of AO. Poor study design, miscalculation of data, insufficient sample, or

introduction of variables could also contribute to the variability that has been reported in the literature. For routine dental extractions, the incidence of AO has been reported in the range 0.5% to 5%. The incidence of AO after extraction of mandibular third molars varies from 1% to 37.5%. It has been well documented that surgical extractions result in about 10 times higher incidence of AO.<sup>4-6</sup> Hence; the present study was conducted for assessing the efficacy of Er:Cr:YSGG and Alvogyl in the Management of Alveolar Osteitis.

#### MATERIALS & METHODS

The present study was conducted for assessing the efficacy of Er:Cr:YSGG and Alvogyl in the Management of Alveolar Osteitis. 40 patients who reported with post-extraction pain (non-surgical extraction including third molar) and subsequently

diagnosed with AO were randomly divided into two groups (thirty each) as follows:

Group A: Loose dressing of alvogyl (Septodont)

Group B: Decontamination of socket was done using an Er:Cr:YSGG laser

Follow Up was done and every patient was reviewed on 4th, 10th and 14th post treatment day using a modified healing score under following variables: Denuded bone, Absence of healthy granulation tissue, and Tenderness. For each present variable, score of 1 was given while for each absent variable, score of 0 was given. Total of these gave final healing score. Score 0 indicates minimal healing and score 3 represents best healing. All the results were recorded and analyzed by SPSS software.

## RESULTS

Mean age of the subjects of group A and group B was 41.8 years and 43.9 years respectively. There were 14 males and 6 females in group A while there were 15 males and 5 females in group B. Mean modified healing score among subjects of group A at 4<sup>th</sup> day, 10<sup>th</sup> day and 14<sup>th</sup> day was 1.8, 2.8 and 2.2 respectively. Mean modified healing score among subjects of group B at 4<sup>th</sup> day, 10<sup>th</sup> day and 14<sup>th</sup> day was 2.6, 2.9 and 2.4 respectively. Significant results were obtained while comparing the modified healing score among subjects of group A and group B at 4<sup>th</sup> day.

Modified healing score	Group A	Group B	p- value
4 <sup>th</sup> day	1.8	2.6	0.00*
10 <sup>th</sup> day	2.8	2.9	0.41
14 <sup>th</sup> day	2.2	2.4	0.39

\*: Significant

## DISCUSSION

The Alveolar osteitis (AO) is one of the extraction wound healing disorder, Commonly known as “dry socket” which is one of the common postoperative problem that results in severe pain “postoperative pain” inside and around the extraction site, which increases in severity between the first and third day after the extraction, usually caused by a partial or total disintegrated blood clot within the socket, this type of extraction complications usually associated with the extraction of impacted 3rd molar teeth and mandibular molar teeth. Haraji et al reported that the modified triangular flap decreases the incidence of Alveolar Osteitis more than the buccal envelope flap. In this study he examined the patients who were candidates for extraction of a bilaterally impacted mandibular third molar with the same difficulty index; a modified triangular flap was placed on one side and a buccal envelope flap (control) was placed on the other side, Alveolar Osteitis and healing were assessed at three and seven days after surgery.<sup>6-9</sup> Hence; the present study was conducted for assessing the efficacy of Er:Cr:YSGG and Alvogyl in the Management of Alveolar Osteitis.

Mean age of the subjects of group A and group B was 41.8 years and 43.9 years respectively. There were 14 males and 6 females in group A while there were 15 males and 5 females in group B. Mean modified healing score among subjects of group A at 4<sup>th</sup> day, 10<sup>th</sup> day and 14<sup>th</sup> day was 1.8, 2.8 and 2.2 respectively. Mean modified healing score among subjects of group B at 4<sup>th</sup> day, 10<sup>th</sup> day and 14<sup>th</sup> day was 2.6, 2.9 and 2.4 respectively. Tarakji B et al conducted a systematic review on the efficacy in pain control of the different treatments for AO. A structured electronic and hand search strategy was applied to PubMed, Scopus, Cochrane Library, OpenGrey, and Google Scholar between January 2010 and July 2020 to identify studies according to PRISMA guidelines. The inclusion criteria were original English and Spanish clinical trials that analyzed pain-control parameters according to visual analog scale (VAS, 0-10 scale), or pain relief patients’ percentages. Those treatments that reach  $VAS \leq 4$  on day 2 or before; or  $\geq 85\%$  of patients with absence of pain symptoms at day 7 or before were considered acceptable for their recommendation. The final review included 17 clinical trials. Among them, there were analyzed a total of 39 different AO treatments. 53.8% of the treatments fulfill the proposed parameters for pain control. Treatment alternatives are multiple, heterogeneous, and difficult to compare.<sup>10</sup>

Significant results were obtained while comparing the modified healing score among subjects of group A and group B at 4<sup>th</sup> day. Rani A et al assessed the efficacy of Er:Cr:YSGG, Diode Laser and Alvogyl in the Management of Alveolar Osteitis. sixty patients diagnosed with AO were randomly divided into three groups viz: alvogyl, diode laser and Er:Cr:YSGG laser (erbium chromium yttrium scandium gallium garnet). On analyzing the results, diode laser at 1.0 W power settings (energy: 20–25 J/cm<sup>2</sup>) in non-contact, continuous mode was found to be the most effective for both pain relief and healing improvement. The diode laser is an acceptable and effective non-dressing treatment modality for alveolar osteitis, which is the most common painful complication following extraction.<sup>11</sup>

## CONCLUSION

The present study demonstrated faster improvement in healing with Er:Cr:YSGG in comparison to Alvogyl.

## REFERENCES

- Colby RC. The general practitioner’s perspective of the etiology, prevention, and treatment of dry socket. *General Dentistry*. 1997;45(5):461–472.
- Nusair YM, Abu Younis MH. Prevalence, clinical picture, and risk factors of dry socket in a Jordanian Dental Teaching Center. *Journal of Contemporary Dental Practice*. 2007;8(3):53–63.
- Richards D. Does chlorhexidine prevent dry socket? *Evid Based Dent*. 2012;13:91.

4. Minguez-Serra MP, Salort-Llorca C, Silvestre-Donat FJ. Chlorhexidine in the prevention of dry socket: effectiveness of different dosage forms and regimens. *Med Oral Patol Oral Cir Bucal*. 2009;14:e445–49.
5. Yengopal V, Mickenautsch S. Chlorhexidine for the prevention of alveolar osteitis. *Int J Oral Maxillofac Surg*. 2012;41:1253–64.
6. Oginni FO, Fatusi OA, Alagbe AO. A clinical evaluation of dry socket in a Nigerian teaching hospital. *Journal of Oral and Maxillofacial Surgery*. 2003;61(8):871–876.
7. Swanson AE. A double-blind study on the effectiveness of tetracycline in reducing the incidence of fibrinolytic alveolitis. *Journal of Oral and Maxillofacial Surgery*. 1989;47(2):165–167.
8. Hooley JR, Golden DP. The effect of polylactic acid granules on the incidence of alveolar osteitis after mandibular third molar surgery. A prospective randomized study. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology and*. 1995;80(3):279–283.
9. Hita-Iglesias P, Torres-Lagares D, Flores-Ruiz R, Magallanes-Abad N, Basallote-Gonzalez M, Gutierrez-Perez JL. Effectiveness of chlorhexidine gel versus chlorhexidine rinse in reducing alveolar osteitis in mandibular third molar surgery. *J Oral Maxillofac Surg*. 2008;66:441–45.
10. Tarakji B, Saleh LA. Systemic Review of Dry Socket: Aetiology, Treatment, and Prevention. *J Clin Diagn Res*. 2015 Apr; 9(4): ZE10–ZE13.
11. Rani A, Mohanty S, Sharma P, Dabas J. Comparative Evaluation of Er:Cr:YSGG, Diode Laser and Alvogyl in the Management of Alveolar Osteitis: A Prospective Randomized Clinical Study. *J Maxillofac Oral Surg*. 2016 Sep;15(3):349-354.