

# Consideration of Risk Factors Allied with Dry Socket: A Clinical Study.

Niketa Gupta<sup>1</sup>, Anshul Gupta<sup>2</sup>

<sup>1</sup>Junior Resident, Department of Dentistry, S.P.Medical College, Bikaner, Rajasthan, India.

<sup>2</sup>Consultant Dental Surgeon, Bikaner, Rajasthan, India.

Received: March 2019

Accepted: March 2019

**Copyright:** © the author(s), publisher. It is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## ABSTRACT

**Background:** Dry socket (DS) is frequent complication seen in patients undergoing extraction. The present study was conducted to evaluate the risk factors associated with DS. **Methods:** This study was conducted in department of dentistry. It consisted of 520 teeth in 840 patients requiring extraction of teeth. General information such as name, age, gender, smoking status and systemic diseases were recorded. Patients were divided into 4 age groups. Patients were divided into medically fit and with systemic disorder. **Results:** Out of 840 patients, 480 were males and 360 were females. The difference was non-significant ( $P < 0.1$ ). 50 patients had DS, the prevalence was 6%. The number of patients with DS in <18 years was 8, 18-30 years (20), 31-50 years (15) and >50 years (7). The difference was non-significant ( $P > 0.05$ ). 10 patients had DS among 150 patients medically fit and 40 patients had DS among 640 systemic ill patients. The difference was significant ( $P < 0.05$ ). Smokers were 210 out of which 18 had DS. Nonsmokers were 630 out of which 32 had DS. The difference was significant ( $P < 0.05$ ). **Conclusion:** Dry socket is one of the complications seen following extraction of teeth. Medical condition affects the outcome of the treatment. Smoking is one of the contributory factors leading to DS.

**Keywords:** Dry socket, Medical status, Smoking.

## INTRODUCTION

Extraction of teeth is indicated in case of non-restorable teeth. The most common complication of extraction is dry socket which in turns depends upon various factors. Dry socket (DS) is defined as “postoperative pain in and around the extraction site, which increases in severity at any time between one and three days after the extraction, accompanied by a partially or totally disintegrated blood clot within the alveolar socket, with or without halitosis.” It is also known as “alveolitissicca dolorosa” or “alveolalgia”.<sup>[1]</sup>

Its incidence of DS reported to be 3% for all extractions and can reach over 30% for impacted mandibular third molars. Difficult or traumatic extractions, female gender, tobacco use, site of extraction, oral contraceptives and pre-existing infection are among few contributory factors favoring dry socket.<sup>[2]</sup> Based on the experience of surgeon, amount of trauma during extraction, site of extraction, local anesthesia, smoking status,

inappropriate irrigation during surgery, oral contraceptive, and preoperative infection the incidence of DS differs. Various studies had reported different incidence of DS in surgical removal of impacted mandibular third molar between 5% and 30% and in simple extraction of permanent teeth between 1% and 4%.<sup>[3]</sup> Although DS is a self limited complication, various methods have been proposed for treatment of this phenomenon. However, prevention is more effective in DS. DS occurs when blood clot dissolves following increased fibrinolytic activity and the exposure of alveolar bone happens. The fibrinolysis is the result of plasminogen pathway activation, which can be accomplished via direct or indirect activator substances. Direct activators are released after trauma to the alveolar bone cells. Indirect activators are secreted by bacteria. DS is characterized by severe and progressive pain, halitosis, regional lymphadenitis following tooth extraction.<sup>[4]</sup> The present study was conducted to evaluate the risk factors associated with DS.

## MATERIALS AND METHODS

This study was conducted in department of dentistry. It consisted of 520 teeth in 840 patients requiring extraction of teeth. All were informed regarding the study and written consent was

### Name & Address of Corresponding Author

Dr. Anshul Gupta,  
BDS, MDS,  
Consultant Dental Surgeon,  
Bikaner, Rajasthan, India.

obtained. Ethical clearance was taken prior to the study. General information such as name, age, gender, smoking status, systemic diseases were recorded. Patients were divided into 4 age groups. Patients were divided into medically fit and with systemic disorder. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

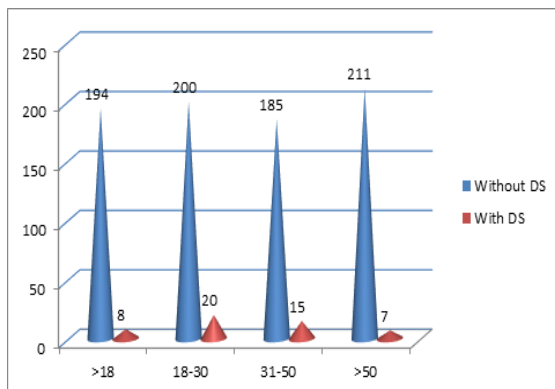
### RESULTS

[Table 1] shows that out of 840 patients, 480 were males and 360 were females. The difference was non-significant (P= 0.1).

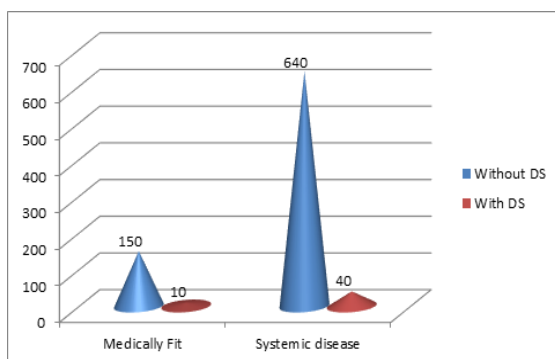
[Figure 1] shows that 50 patients had DS, the prevalence was 6%. The number of patients with DS in <18 years was 8, 18-30 years (20), 31-50 years (15) and >50 years (7). The difference was non significant (P>0.05). Graph II shows that 10 patients had DS among 150 patients medically fit and 40 patients had DS among 640 systemic ill patients. The difference was significant (P< 0.05). Graph III shows that smokers were 210 out of which 18 had DS. Nonsmokers were 630 out of which 32 had DS. The difference was significant (P<0.05).

**Table 1: Distribution of patients.**

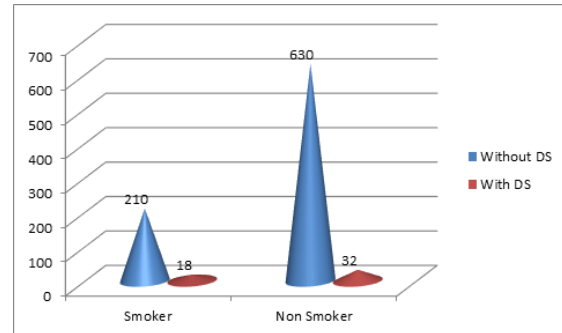
<b>Total 840</b>	
Male	Female
480	360



**Figure 1: Age wise distribution of DS.**



**Figure 2: Association of DS and medical status**



**Figure 3: Association of DS and smoking**

### DISCUSSION

Patients of DS experience pain after one to three days of extraction. There is halitosis, foul taste, and regional lymphadenitis. In the clinical examination, there exists no blood clot in the extraction socket and the alveolar bone is exposed. Higher fibrinolysis and increased plasmin activity along with higher amount of tissue activators in extraction socket of cases with DS.<sup>5</sup> In present study, out of 840 patients, 480 were males and 360 were females. 50 patients had DS, the prevalence was 6%. The number of patients with DS in <18 years was 8, 18-30 years (20), 31-50 years (15) and >50 years (7).

This is similar to Harmesht al.<sup>[6]</sup> Dry socket (DS) is a painful condition that may occur after a dental extraction and is often distressing to the patient. Although the exact pathogenesis of dry socket is not fully understood, it is thought to occur from increased fibrinolytic activity resulting in blood clot disintegration. Sharma et al,<sup>[7]</sup> in their study, a total of 1073 teeth included in this study. 46.11% of patients were male and 53.89% were female. The mean age of participants was 32.68 ± 17.63 years. Total of 31 patients (2.89%) were diagnosed with dry socket. Smoking and oral contraceptives intake had significant association with incidence of DS. In contrast, age, gender, medical status, tooth location, number of anesthetic carpules, anesthetic technique, pre-extraction antibiotic consumption, and academic year of students had no significant association with the incidence of DS. All cases with DS treated and were followed until resolution of DS. In present study, 10 patients had DS among 150 patients medically fit and 40 patients had DS among 640 systemic ill patients. Smokers were 210 out of which 18 had DS.

Nonsmokers were 630 out of which 32 had DS. This is in agreement with Mittal et al.<sup>[8]</sup> Ana et al,<sup>[9]</sup> conducted a retrospective study in which a total number of patients their demographics, total number of permanent teeth extracted, number of dry sockets encountered and associated risk factors such as smoking, contraception and systemic illnesses were retrieved. 2214 patients were reviewed from whom a total of 2281 permanent

teeth had been extracted. The overall incidence of dry socket was 1.8%, being more prevalent in females, in the second and third decades of life, and in mandibular teeth, more specifically in molars. The surgeon experience affects the amount of trauma during tooth extraction. Sisk et al.<sup>[10]</sup> Observed that incidence of DS increased when the extractions performed by residents rather than oral and maxillofacial surgeons. Kaya et al,<sup>[11]</sup> conducted a study with the aim to compare the effectiveness of Alvogyl, SaliCept and low-level laser therapy (LLLT) in pain reduction in dry socket, and concluded that LLLT performed superiorly to SaliCept and alvogyl and achieved a pain remission in the third day. The intensity of pain decreased more rapidly in all three treatment groups than in the control group.

**How to cite this article:** Gupta N, Gupta A. Consideration of Risk Factors Allied with Dry Socket: A Clinical Study. *Ann. Int. Med. Den. Res.* 2019; 5(3):DE68-DE70.

**Source of Support:** Nil, **Conflict of Interest:** None declared

## CONCLUSION

Dry socket is one of the complications seen following extraction of teeth. Medical condition affects the outcome of the treatment. Smoking is one of the contributory factors leading to DS.

## REFERENCES

1. Blum IR. Contemporary views on dry socket (alveolar osteitis): a clinical appraisal of standardization, aetiopathogenesis and management: a critical review. *Int J Oral Maxillofac Surg* 2002; 31: 309-17.
2. Nusair YM, Younis MH. Prevalence, clinical picture, and risk factors of dry socket in a Jordanian dental teaching center. *J Contemp Dent Pract* 2007; 8:53-63.
3. Garcia AG, Grana PM, Sampedro FG, Diago MP, Rey JM. Does oral contraceptive use affect the incidence of complications after extraction of a mandibular third molar? *Br Dent J* 2003;194: 453-5.
4. Hilton TJ, Biesbrock AR, et al. Perioperative use of 0.12% chlorhexidine gluconate for the prevention of alveolar osteitis: efficacy and risk factor analysis. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1998; 85: 381-7.
5. Jacobs DJ. A clinical investigation into the incidence of dry socket. *Br J Oral Maxillofac Surg* 1984; 22: 115-22.
6. Harmesh, Butler DP. The relationship of smoking to localized osteitis. *J Oral Surg.* 1979; 37:732-5.
7. Sharma, Macgregor ID, Rogers SN, Hobson RS, Bate JP, Dennison M. The effect of smoking on immediate postextraction socket filling with blood and on the incidence of painful socket. *Br J Oral Maxillofac Surg.* 1988;26:402-9.
8. Mittal, Harvey S, Erickson SH, Cherkink D. Effect of oral contraceptive cycle on dry socket (localized alveolar osteitis). *J Am Dent Assoc.* 1980; 101: 777-80.
9. Ana et al. Blood fibrinolytic activity before and after oral surgery. *Int J Oral Surg.* 1977; 6: 42-7.
10. Sisk et al. Etiology and pathogenesis of fibrinolytic alveolitis. *Int J Oral Surg.* 1973; 2: 215-63.
11. Kaya et al. The relationship between the indications for the surgical removal of impacted third molars and the incidence of alveolar osteitis. *J Oral Maxillofac Surg.* 1991; 49: 141-5.