



## **Frequency of Dry Socket in Patients coming to dental out-patients' Department, Saidusharif hospital, SWAT**

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### **ABSTRACT**

*The objective of this study was to find out the frequency of dry socket at dental Out-Patient Department, Saidu Sharif Hospital, and Swat. This is a Descriptive Cross-sectional study. We obtained informed consent from participants. When the participant agreed to participate in our study then we provided them with questionnaire which was composed of different types of questions. A total of 350 patients participated in the study. The total frequency of dry socket was found out to be 4%. The frequency of dry socket was more common in male than in female patients. A total of 79% males and 21% females were affected. Age, sex, medical history, extraction site, amount of local anesthesia and experience of worker play no role in the occurrence of dry socket. It is concluded from our research that smoking, surgical trauma and single extractions are considered influencing factors in the occurrence of dry socket. On the other hand, factors like: age, sex, medical history, extraction site, amount of anesthesia, and operator experience have no effect on the observation of dry socket phenomena. Awareness programs should be conducted and post-operative instructions should be given to the patients to prevent dry socket.*

**Keywords:** Dry socket, smoking, surgical extraction.

Received 12.05.2020

Revised 11.06.2020

Accepted 09.07.2020

### **INTRODUCTION**

The unscientific term "dry socket" applies to a post extraction socket where any or more of the bone within the socket or along the occlusal edge of the socket is uncovered in the days following extraction since the bone was not protected by an original and permanent blood clot or a coating of essential, continuous, healing epithelium (1,2). The patient may not be able to prevent mechanical stimulation of the exposed bone by food particles or by the tongue, which is highly painful to touch, resulting in frequent acute pain. Without causing acute pain, all parts of a dry socket lesion, except the exposed bone, can be gently touched with a parodontal probe or the tip of an irrigation needle. Dry socket lesions occur in around 1 % to 5% of all extractions and up to 38% of the third-molar mandibular extractions (1, 2). It usually happens when the clot inside the extraction site of the healing tooth is affected (3). More likely, dry socket also called alveolar osteitis is a painful inflammation phenomenon within the empty tooth socket because of the relatively poor blood supply to this area of the mandible (which explains why dry socket is usually not experienced in other parts of the jaws) (4, 5). Inflamed alveolar bone, unprotected after tooth extraction and exposed to the oral environment, may become packed with food and debris (6). A dry socket usually triggers a strong and rapid rise in pain starting 2–5 days after a mandibular molar extraction, most generally the third molar (7). The patient often finds this extremely unpleasant; the only symptom of dry socket is pain that often radiates up and down in the head and neck. A dry socket is not an infection and is not directly associated with swelling because it occurs entirely inside the bone – it is a phenomenon of inflammation inside an empty tooth socket's bony lining. Since dry socket is not an infection, antibiotic usage has little impact on its incidence rate (8). There is some indication that rinsing with chlorhexidine before or after extraction or inserting chlorhexidine gel in the sockets of extracted teeth offers an advantage in avoiding dry sockets, but attention must be provided to the harmful effects of

chlorhexidine (8,9). After an extraction the risk factor for alveolar osteitis may increase dramatically with smoking (10, 11).

Dry socket is a condition of self-limit. However it usually requires some symptomatic treatment due to the severity of discomfort experienced by the patient. The variety of treatments for a dry socket involves local socket therapies, including: socket irrigation with 0.12% and 0.2% chlorhexidine rinse and home usage guidance of a syringe for irrigation; insertion of a self-eliminating dressing such as Alvogyl (containing eugenol, butamben, and iodoform); Placement of obtundant dressings such as zinc oxide, eugenol and lidocaine gel; or a mixture of these treatments and the application of systemic antibiotics, if possible. In 1997, the Royal College of Surgeons in England set National Clinical Guidelines, which were then reviewed in 2004, on how to manage a dry socket (7). They offer the following suggestions

1. In appropriate cases, the risk of residual root or bony particles as a cause of pain should be considered with a radiograph, typically in instances where a new patient has such signs.
  2. To extract necrotic tissue, the socket can be irrigated with 0.12 % warmed chlorhexidine digluconate and any food debris should be gently removed. This may occasionally require local anesthesia.
  3. The socket can then be lined loosely with an ample coating to prevent food debris from entering the socket and to protect the exposed bone from local irritation. This dressing should aim to be resorbable, antibacterial and antifungal and should not cause local irritation or stimulate an inflammatory response.
  4. If there is no contraindication in their medical history, patients should be prescribed analgesics of the non-steroidal anti-inflammatory drug (NSAID).
  5. Patients should be kept under review and repeated steps 2 and 3 until pain subsides and the patient can then be instructed to irrigate the socket with 0.2% chlorhexidine digluconate with a syringe at home.
- The level of the proof is very small. Such recommendations are focused purely on clinical knowledge and professional opinions. To find the frequency of Dry Socket in the patients who have done Extraction recently with the age limit of 15-60 years in Saidu Sharif Hospital, Swat, KPK, and Pakistan. To compare the frequency of Dry Socket in male and female patients as well as in elder and younger patients.

## **MATERIAL AND METHODS**

### **Study Setting and Study Population**

The study was based in the Department of Dental Outpatients' (OPD) at Saidu Sharif Hospital. The population of this study consisted of patients from the Department of Outpatients (OPD), who had some concern about oral cavity at the unit in question. The Dental OPD has four fully functional Dental Units. In general, 8,640 cases of examination (30 patients' examination per day) of patients who had the complaints concerned per year on average (as noted from the records of the Dental OPD for two years from January 2012 to December 2014). Because of limited resources in the hospital concerned, patients with serious diagnosed problems are referred to Tertiary Care Hospitals, and patients with problems that can be treated with minor procedures and medicines are prescribed in the same Dental Outpatients' Department (OPD) with the respective treatment or minor procedure.

### **Study Design**

This is a Descriptive Cross-sectional study.

### **Sampling**

This study adopted a convenience sampling method by which elective patients who had oral examination were included in the study, provided they obtained verbal informed consent. All patients had equal chances of engaging in the study.

### **Inclusion criteria**

Healthy both physically and mentally.

Patients have no such chronic disorders coexisting.

Patients willing to take part in the study.

### **Exclusion criteria**

Patients not ready to take part in the research, Known psychiatric illness, a history of taking any anti-anxiety or antidepressant medications

The percentages and frequencies were used to determine Dry Socket frequency among Extraction patients. Data were presented in the form of tables. Version 22 of the Statistical Program for Social Sciences (SPSS) was used to evaluate the results.

### **Data Collection Procedure**

The first approval to conduct the study was obtained from the IPMSKMU Research and Ethics Committee, and the second from the Research and Ethics Committee of the Saidu Sharif Hospital. The study included elective patients who visited in Dental OPD. They were explained about the study's aims, and were asked to participate in the study. Both patients who consented to the research were conveniently enrolled. That study included a total of 350 patients. The doctor who examined the patients was asked to allow me to fill

in the data assessment tool with the following information: Names of the patient, IP number, age, sex, address, complaint and treatment. Hospital visits were for patients with different oral problems. The dental surgeon, in the respective dental OPD, examined the patients postoperatively. He prescribed treatment to the patient, after the surgeon examined the patient. It is also advised those patients whose tooth extraction needs have been examined and then advise diagnostic tests such as HBS, HCV, RBS and CBC.X-Ray. Those patients who were medically fit for treatment, their teeth were removed and patients were told if they had any complications they should see at their respective dental surgery. Patients extracted from this tooth were examined for dry socket during the follow-up visit. Patients with dry socket have been treated with normal saline wash and zinc oxide eugenol dressing, and medication is prescribed.

## RESULTS

In this study to find the frequency of dry sockets the sample size of 350 patients has been collected who have done extraction recently. In the cluster of patients there were 241 (69%) males and 109 (31%) female patients. In the entire sample dry socket was found in 14 patients (4%) in which 11 (78.57%) were male and 3 (21.42 %) were female patients. A proforma was designed for the assessment of patients including some questions and segments that collects and records information about frequency of sign and symptoms of dry socket. Four options were given on the basis of time, i.e. 12 hours, 24 hours, 48 hours and 72 hours. Of which we observed 1 patients after 12hours, 6 patients after 24hours, 4 patients after 48hours and 3 patients after 72hours who had dry socket. Another segment was composed with age category information. Four categories were included, i.e. 15-24, 25-34, 35-44 and over 44 years. We found that 32 patients who visited the dental OPD were aged 15-24, 103 patients were aged 25-34, 177 patients were aged 35-44, and 38 were aged over 44. Another segment which we included in our questionnaire was about the information of frequency of sign and symptoms. We've also provided four options in this section i.e. Pain, Bare bone, Halitosis and Others and in the end we found that 8 patients complained about pain, 3 patients complained about bare bone, 1 patient complaint about halitosis and 2 patients complained about some other issues. Next segment of our questionnaire was about the frequency of Co-morbidities in relation to dry socket which was included with four options i.e. Diabetes mellitus, hypertension, smokers and snufflers. Finally we found that 1 female patient had Diabetes mellitus, 1 male patient had hypertension, 2 male patients had smokers and 1 snuffer and 9 Drysocket patients had no co-morbidity including 6 males and 3 females.

**Table 1. Age of Patients \* Gender of Patients**

		Gender of Patients		Total
		Male	Female	
Age of Patients	15-24 years	25	7	32
	25-34 years	72	31	103
	35-44 years	123	54	177
	Above 44 years	21	17	38
Total		241	109	350

**Table 2. Socket Affected \* Gender of Patients**

		Gender of Patients		Total
		Male	Female	
Socket Affected	Male Patients	11	0	11
	Female Patients	0	3	3
	Not affected Patients	230	106	336
Total		241	109	350

**Table 3. Complaint \* Gender of Patients**

		Gender of Patients		Total
		Male	Female	
Complaint	No Complaints	230	106	336
	Pain	6	2	8
	Bare Bone	3	0	3
	Halitosis	1	0	1
	Others	1	1	2
Total		241	109	350

**Table 4. onset of symptom \* Gender of Patients**

		Gender of Patients		Total
		Male	Female	
onset of symptom	Immediately	1	0	1
	24 Hours after Extraction	5	1	6
	48 Hours after Extraction	3	1	4
	72 Hours after Extraction	2	1	3
	No symptoms	230	106	336
Total		241	109	350

**Table 5. Frequency of co-morbidities \* Gender of Patients**

		Gender of Patients		Total
		Male	Female	
Frequency of co-morbidities	Diabetes Mellitus	0	1	1
	Hypertension	1	0	1
	Smoker	2	0	2
	Snuffer	1	0	1
	Drysocket with no co-morbidities	6	3	9
	Patients with no co-morbidities	231	105	336
Total		241	109	350

**DISCUSSION**

Dry socket is a prominent medical complication. Severe pain that starts following two or three days of extraction is the main characteristic of dry socket. An amplified Local fibrinolysis which leads to breakdown of the clot is considered to be the etiology of the condition (12). When an antifibrinolytic agent is placed topically in the extraction site, it leads to reduce the rate of dry socket (7). Trauma due to surgery and bacterial infections considered the two admissible initiating factors of this specific fibrinolytic activity (12).

The results of this study show the prevalence of dry socket at the Dental Out-patients Department, Saidu Sharif Hospital, Swat and its clinical considerations are parallel to those reported in the previous findings. On the whole prevalence of dry socket was 4%.

The increase in difficulty of extraction promotes an increase in the frequency of dry socket (4, 12-13). This is imputable to more liberation of unswerving tissue activators secondary to inflammation of bone marrow following the more complicated and, thus, more traumatic and painful extractions (12). In this present study an extensively higher incidence of dry socket (4%) was seen with surgical extraction, that

chains what is acknowledged in the previous findings which tell is that trauma is one of the causative factor in the pathogenesis of dry socket. Single or several extractions is considered to be the factor that increases the incidence of dry socket. Previous reports (13-14) proved that the prevalence of dry socket was high after single extractions than multiple extractions, and this was consistent by the results of the current study in which dry socket prevalence was 7.3% subsequent to single extractions and 4% subsequent to more than one extractions. Several extractions are usually uncomplicated because they are carry out on shaky and periodontally weakened teeth. Krough (8) suggested if multiple adjoining teeth are to be extracted, it is good to carry out in one operation.

In this present study the difference in the prevalence of dry socket between males (78.57%) and females (21.43%) was statistically insignificant. This result coincides with the study performed by Al Khateeb *et al.* (15) and opposes the findings of many studies (9, 13-14, 16). MacGreoger<sup>12</sup> reported a higher frequency of dry socket in females, has a male to female ratio of 3:2. The probable details of this dissimilarity can conceal behind the truth that eastern societies fluctuate from western ones in smoking habits among females and males. In western societies females smoke in a greater percentage than in eastern societies. The present study shows that the percentage of female smokers was considerably lesser than males (7.14% and 58% respectively). It is value to mention that the use of oral contraceptives is a factor which increases the frequency of dry socket among female patients. The use of contraceptives thought to be the reason behind the increased susceptibility of females to dry socket (6, 9, 17). Was reduced in this study (10).

The results of this study also showed the prevalence of dry socket to be higher in third and fourth decades of life with a peak rate in the 15-24 year age group which is in accord with results of many studies (13-16,18). The probable details for this dependence on age is yet not known, but the presence of well-developed bare bone and the comparative irregularity of periodontal diseases at this age (both make tooth extraction more difficult) can offer a possible detail. Most surgical extractions in this study were performed in this age group, and surgical extractions are linked with a greater rate of dry socket.

The results of this study does not support and opposes the findings of Johnson and Blanton, (11) who showed no major variation in the percentage of dry socket between smokers and nonsmokers, a dose dependent association among smoking and the incidence of dry socket was verified in the current study which is comparable to the result of other studies (19,20). Mostly smokers do not follow postoperative instructions is not behind the increased prevalence of dry socket among smokers. It has been reported patients who smoked on the same day of surgery had a higher incidence of dry socket than those who smoked on the second day after extraction (20). Whether a systemic mechanism or a direct local effect (heat and suction) on the extraction site is accountable for this augmentation in the incidence of dry socket is not clear yet.

## **RECOMMENDATION**

Primary prevention should be meant at making awareness in the general population. This aim can be achieved by publishing pamphlets and spreading dry socket safety programs. Arrangement of Dental Camps at School to support the dry socket trial among young generation. Free Camps should also be held at the hospital and clinics in sort to prevent its incidence and if it initiates ought to be managed and treat properly.

As we know smoking, snuff dipping and poor oral health are some key causes of dry socket so our Secondary prevention should be supplemented with the allocation of funds by the government for the intention to aware society by arranging workshop.

## **CONCLUSIONS**

The occurrence of dry sockets after single extractions was considerably greater than those following many extractions. There was a statistically considerable distinction in the prevalence of dry socket between smokers and non- smokers. The occurrence of dry socket was higher after surgical extractions than those after non-surgical extractions. There was no statistically important link between the progress of dry socket and patient's age, sex, medical history, medications (preoperative or postoperative), indication for extraction, extraction site, and operator's experience.

## **CONFLICT OF INTEREST**

Authors have no conflict of interest.

## **FUNDING DISCLOSURE**

Nil

**AUTHOR'S CONTRIBUTION**

All authors equally contribute in Study Concept and Design, Data Collection and interpretation, Statistical Analysis, Protocol Writing, Manuscript Writing, Critical Manuscript Review, Final approval of article.

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**CITATION OF THIS ARTICLE**

M Khan, S Ali, U Zeb, I Ijaz-Frequency of Dry Socket in Patients coming to dental out-patients' Department, Saidusharif hospital, SWAT. *Bull. Env. Pharmacol. Life Sci.*, Vol 9[8] July 2020 : 94-99