

## Original Research

### Assessment of risk factors of dry socket after tooth extraction

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#### ABSTRACT:

**Background:** Dry socket refers to a post-extraction socket where some or all of the bone within the socket, or around the occlusal perimeter of the socket. The present study was conducted to assess risk factors of dry socket after tooth extraction.

**Materials & Methods:** 580 patients who underwent extraction of both genders were included. Smoking status, systemic diseases, use of oral contraceptives, antibiotic consumption before extraction, number of carpules used for anesthesia etc. recorded. The incidence of dry socket was recorded. **Results:** Out of 580 teeth, 30 (5.1%) had dry sockets. common risk factors was dry socket was smoking seen in 25, diabetes seen in 23 and systemic diseases in 20 patients with dry sockets. The difference was significant ( $P < 0.05$ ). **Conclusion:** Common risk factors for dry sockets was smoking, systemic diseases and diabetes.

**Key words:** Dry sockets, smoking, diabetes

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#### INTRODUCTION

Dry socket refers to a post-extraction socket where some or all of the bone within the socket, or around the occlusal perimeter of the socket, is exposed in the days following the extraction, due to the bone not having been covered by an initial and persistent blood clot or not having been covered by a layer of vital, persistent, healing epithelium.<sup>1</sup> The patient may not be able to prevent food particles or the tongue from mechanically stimulating the exposed bone, which is acutely painful to touch, resulting in frequent acute pain.<sup>2</sup> All parts of a dry socket lesion, except the exposed bone, can be gently touched with a periodontal probe or an irrigation needle tip without causing acute pain.<sup>3</sup> Dry socket lesions occur in approximately 1% to 5% of all

extractions and in up to 38% of mandibular third molar extractions. Its incidence can reach over 30% for impacted mandibular third molars. Difficult or traumatic extractions, female gender, tobacco use, site of extraction, oral contraceptives and preexisting infection are among few contributory factors favoring dry socket.<sup>4</sup>

Several factors have been reported in literature to be responsible for the occurrence of dry socket; these include traumatic, difficult and prolonged extraction, pre- and postoperative infection at the site, smoking, oral contraceptives, bone disorders and underlying pathologies, irradiation, systemic illness such as diabetes mellitus, clotting problems, and failure to comply with postextraction instructions Other possible

risk factors include periodontal diseases and previous dry socket with past extractions.<sup>5</sup> The present study was conducted to assess risk factors of dry socket after tooth extraction.

Demographic profile such as name, age, gender, smoking status, systemic diseases, use of oral contraceptives, antibiotic consumption before extraction, number of carpules used for anesthesia, anesthesia technique and location of teeth extracted were recorded. The incidence of dry socket was recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

**MATERIALS & METHODS**

The present study was conducted among 580 patients who underwent extraction of both genders. All were informed regarding the study and their written consent was obtained.

**RESULTS**

**Table I Distribution of patients**

Total- 580		
Gender	Males	Females
Number	230	350

Table I shows that out of 580 patients, males were 230 and females were 350.

**Table II Incidence of dry socket**

Total	Dry socket	Percentage
580	30	5.1%

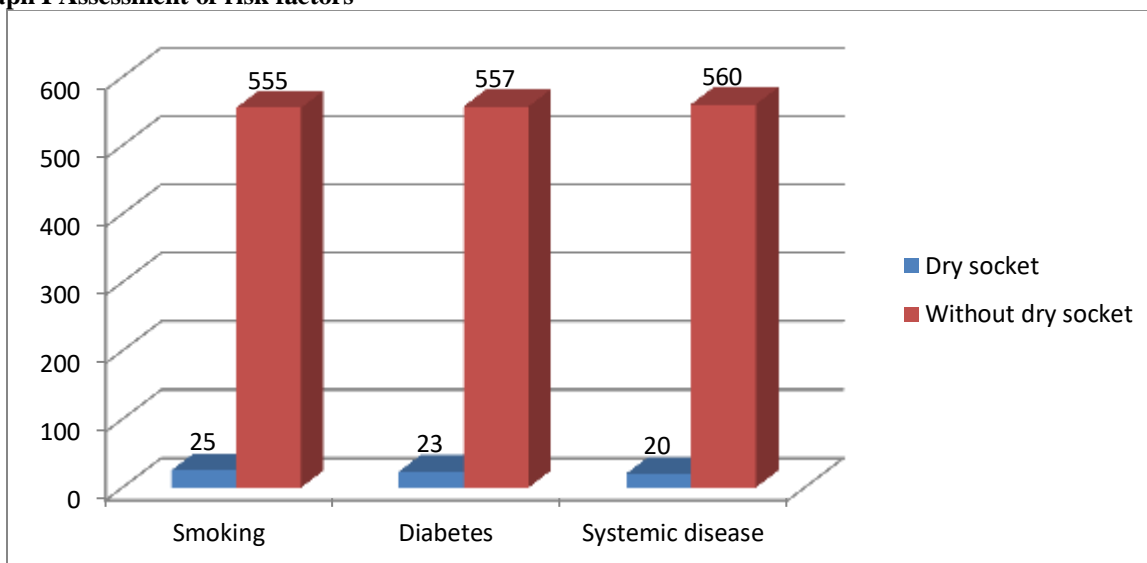
Table II shows that out of 580 teeth, 30 (5.1%) had dry sockets.

**Table III Assessment of risk factors**

Risk factors	Dry socket	Without dry socket	P value
Smoking	25	555	0.01
Diabetes	23	557	
Systemic disease	20	560	

Table III, graph I shows that common risk factors was dry socket was smoking seen in 25, diabetes seen in 23 and systemic diseases in 20 patients with dry sockets. The difference was significant (P< 0.05).

**Graph I Assessment of risk factors**



**Table IV Other parameters**

Parameters	Risk factors	Dry socket	Without dry socket	P value
No of carpules	<2	20	360	0.94
	>2	10	190	
Pre-anaesthetic antibiotic consumption	Yes	16	280	0.02
	No	14	270	
Anaesthetic technique	Field block	17	290	0.01
	Regional block	13	260	

Table IV shows that common risk factors were <2 carpules seen in 20 and >2 carpules in 10, use of pre-anaesthetic antibiotic consumption in 16, use of field block in 17 and regional block in 13 patients with dry sockets. The difference was significant ( $P < 0.05$ ).

## DISCUSSION

A dry socket lesion may show exposed bone located superior to the projected location of the occlusal surface of the socket after the socket heals.<sup>6</sup> This bone may be a protruding septum of bone or may be located on the socket occlusal perimeter. This superiorly-located exposed bone would be the last aspect of the socket to be covered by epithelium, since the bone, protruding superiorly to the projected occlusal surface of the healed socket, would be exposed to food particles or mechanical trauma that may erode epithelium growing over that bone.<sup>7</sup> This bone, if mechanically stimulated, would be a source of acute pain until the end of the healing period. A dentist may anesthetize the patient and use a football diamond bur with copious irrigation to trim this bone to approximately 1 mm inferior to the projected occlusal surface of the healed extraction socket.<sup>8</sup> Such trimming can result in the bone becoming immediately coverable by a blood clot or medicament, thereby reducing the total number of days that this hyper-sensitive bone is exposed and helping to ensure that epithelium will systematically grow over the remaining exposed bone of the dry socket.<sup>9</sup> The present study was conducted to assess risk factors of dry socket after tooth extraction.

In present study, out of 580 patients, males were 230 and females were 350. We found that out of 580 teeth, 30 (5.1%) had dry sockets. Singh et al<sup>10</sup> in the study 820 teeth in 1040 patients (males- 580, females- 460) who underwent non surgical removal of permanent teeth were included. Patients were divided into 4 age groups. Group I- 2 carpules. Patients were divided into medically fit and with systemic disorder, smoker or non-smoker. Out 1040 patients 580 were males and 460 were females. Total patients with DS were 42/1040 and the prevalence was 4%. Higher incidence was reported in age group 18-30 years and 31- 50 years. The difference was non significant ( $P > 0.05$ ). DS was seen in males (26) and females (16). The prevalence in males 4.5% was and in females was 3.4%. The difference was non significant ( $P > 0.05$ ). 166 patients were medically

fit. DS was seen in 6 patients and 160 were without DS. 874 patients were having systemic diseases. 838 were without DS while DS was seen in 36 patients. The difference was non significant ( $P > 0.05$ ). Smokers were 274 out of which 20 had DS. Nonsmokers were 766 out of which 22 had DS. The prevalence of DS in smokers was 7.2%.

We observed that common risk factors was dry socket was smoking seen in 25, diabetes seen in 23 and systemic diseases in 20 patients with dry sockets. We observed that common risk factors were <2 carpules seen in 20 and >2 carpules in 10, use of pre-anaesthetic antibiotic consumption in 16, use of field block in 17 and regional block in 13 patients with dry sockets. Cattelani<sup>11</sup> found the proportion of female: male 5:1. However, some other studies revealed that gender is not an effective factor in incidence of DS. Oral contraceptives increase the circulatory concentration of estrogen and estrogen enhances fibrinolytic activity of human body. Gersel- Pedersen<sup>12</sup> reported that the incidence of DS among OCP takers is triple of non-taker.

## CONCLUSION

Authors found that common risk factors for dry sockets was smoking, systemic diseases and diabetes.

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