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Research Article

**ANALYSIS OF RISK OF DENTAL IMPLANT FAILURE
ASSOCIATED WITH MEDICATION USE IN PAKISTAN**Dr Saima Sultan¹, Dr Sundas Akmal¹, Dr Saira Tariq¹¹University Medical & Dental College, Faisalabad**Abstract:**

Introduction: Implant failure has been categorized as early and late in retrospective studies according to different cutoff time points, such as at the time of abutment connection, at the time of loading, within several weeks after placement of the final prosthesis, or at the time of first year after loading. **Objectives of the study:** The main objective and focus of the study was to analyse the risk of dental implant failure associated with medication use in Pakistan. **Methodology:** This cross sectional study was conducted in University Medical & Dental College, Faisalabad during 2018 to 2019. All implant placement procedures were carried out by 5 faculty members and 10 residents. Sinus-floor elevation (SFE) and/or guided bone regeneration (GBR) was performed in patients with insufficient vertical bone height and/or width of the ridge crest either prior to or combined with the implant placement procedure. **Results:** The statistical significances of the differences between the groups were evaluated using the nonparametric tests. The paired means in time period analysis were statistically compared using the Wilcoxon signed-rank test. Chi-squared statistics was used to evaluate the statistical significance of the differences in prevalence between groups. $P \leq 0.05$ was considered statistically significant. **Conclusion:** It is concluded that implant failure is still observed in routine practice. The present study found that seniority of the surgeon and the position of the bone bed of patients significantly affected the likelihood of early implant failure using a single-implant system.

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INTRODUCTION:

Implant failure has been categorized as early and late in retrospective studies according to different cutoff time points, such as at the time of abutment connection, at the time of loading, within several weeks after placement of the final prosthesis, or at the time of first year after loading. Recent studies have found that the prevalence of implant failure is higher in the early phase than in the late phase regardless of the loading time. Most research in assessing the impact of malocclusion and treatment tends to focus on traditional clinical indices and measures. Investigators want to utilize the difference in cephalometric planes and edges or associate evaluation rating scores when orthodontic treatment as result measures. Nonetheless, the proposal by World Health Organization that personal satisfaction (QoL) measures ought to be incorporated into clinical examinations has brought about more accentuation on consideration of patient-focused result measures when contemplating orthodontic treatments and outcomes.¹ Patient-focused care is an idea that has been presented as of late in healthcare systems. Among the fundamental components are a need to comprehend the patient's treatment needs, encounters, fulfillment and the apparent general nature of healthcare system¹. With an expanding number of grown-up patients now looking for orthodontic treatment, there is a developing requirement for such research in orthodontics. To date, almost no work has been distributed assessing persistent encounters amid treatment in connection to the kind of machine being gotten.

Understanding focused care is an idea that has been presented as of late in healthcare systems. Among the primary components are a need to comprehend the patient's treatment needs, encounters, fulfillment and the apparent general nature of healthcare system². With an expanding number of grown-up patients now looking for orthodontic treatment, there is a developing requirement for such research in orthodontics. To date, next to no work has been distributed assessing quiet encounters amid treatment in connection to the kind of machine being gotten.

Inconvenience is communicated as unsavory material sensations, feeling of requirement in the oral hole, extending of the delicate tissues, weight on the mucosa, uprooting of the tongue, and soreness of teeth and pain.³ All orthodontic systems, for example, separator position, curve wire situation and enactments, use of orthopedic powers, and debonding produce torment in patients. Torment,

incited by orthodontic treatment, for the most part could be classified as mellow and short-lasting.⁴ However, a few patients do encounter serious agony, and even to the degree that rumination of sustenance and tooth brushing may be impeded. Agony is a subjective reaction and shows substantial individual variations.⁵ Patients' self-confidence might be affected by visibility of the appliance and speech impairment, especially during social interactions when attention is focused on the face, eyes, and mouth. Poor oral health can affect physical, psychological, and social conditions, which in turn affect patients' quality of life (QOL).

Objectives of the study

The main objective and focus of the study was to analyse the risk of dental implant failure associated with medication use in Pakistan.

METHODOLOGY:

This cross sectional study was conducted in University Medical & Dental College, Faisalabad during 2018 to 2019. All implant placement procedures were carried out by 5 faculty members and 10 residents. Sinus-floor elevation (SFE) and/or guided bone regeneration (GBR) was performed in patients with insufficient vertical bone height and/or width of the ridge crest either prior to or combined with the implant placement procedure. Either a 1-stage or 2-stage protocol of implant placement was selected according to the primary stability of the implant or the necessity for a bone augmentation procedure. In the 2-stage protocol, the second-stage surgery for implant exposure was performed after 3–4 months of healing.

Statistical analysis

Two-way ANOVA was performed to study the contributions. A chi-square test was used to examine the difference in the distribution of the fracture modes (SPSS 19.0 for Windows, SPSS Inc., USA).

RESULTS:

The statistical significances of the differences between the groups were evaluated using the nonparametric tests. The paired means in time period analysis were statistically compared using the Wilcoxon signed-rank test. Chi-squared statistics was used to evaluate the statistical significance of the differences in prevalence between groups. $P \leq 0.05$ was considered statistically significant. Ninety-five percent patients felt pain or discomfort. After 1 day of appliance placement, more than 85% of patients experienced severe to mild pain whereas 9% of patients suffered very severe pain. (Table 1).

Table 1: Pain intensity mean score at different time periods after the appliance insertion

score	Pain intensity	Day 1 n (%)	Day 7 n (%)	1 month n (%)
0	No pain	4.5	21	32
1	Moderate pain	23	24	35
2	Mild pain	22	31	54
3	Severe pain	44	5.5	0.5
4	Very high pain	10	2	2
	Chi-squared test	P<0.001		

During the 1 month of fixed orthodontic treatment, almost all domains in the OHRQOL, i.e., functional limitation, physical pain, physical disability, psychological disability, and psychological discomfort, were significantly affected following insertion of fixed orthodontic appliances, except physically challenged domain and social disability (table 2).

Table 2: Frequency distribution of reported impacts on the activities of the Oral Health Impact Profile and orthodontic treatment status

Questions	Never %	Seldom %	Sometime %	Often %	Always %
Problem in pronunciation	10.0	0.5	86.0	1.1	9.1
Sense of taste is effected	0.5	5.1	86.1	0	9.4
Pain in the mouth	5.0	2.0	1.0	2.0	90.0
Uncomfortable to eat food	4.5	0	1.5	1.0	93.0
Felt tense	4.5	12.5	15	6.0	62.5
Unsatisfactory diet	6.7	1.5	92.0	0	2.5
Interruption in meals	4.5	7.0	30.0	59.5	6.2
Difficulty in relaxation	42.1	5.5	45.5	3.0	2.6
Feel irritation in talking	5.6	5.0	92.0	0	1.0
Difficulty in routine life	84.6	6.1	5.5	0	3.5
Unable to do work properly	89.0	5.5	4.5	0	1.5

More than 85% of patients experienced problem in speech, more than 95% had problem in eating and experienced pain, 60%–65% of patients experienced anxiety, embarrassment, and difficulty to relax. There was a strong correlation between patients who indicated more pain (moderate to severe pain) during treatment with higher scores for the OHIP-14 impact profile ($P < 0.05$).

DISCUSSION:

The most common and problematic sequela of orthodontic treatment is pain and discomfort.⁷The intensity of orthodontic pain is comparable to the greatest intensity of general pain felt with a wasp sting or an ankle sprain. Between 87% and 95% of adolescents experience pain during fixed orthodontic treatment, especially during the first 24 h. Moreover, 39%–49% experience pain during every step of the treatment or after appliance removal. Therefore, pain is a major deterrent to orthodontic treatment, a factor that reduces patient compliance during treatment, and a reason that patients discontinue treatment or miss appointments. According to 90% of patients, orthodontic treatment is painful, and 30% might prematurely cease treatment because of the pain.⁸

Despite its substantial clinical value, this area has been surprisingly neglected in the literature, educational programs, and practice. Orthodontists usually underestimate the degree of pain caused by treatment and are not well equipped to assess if and when their patients might need painkillers.⁹Pain has

been assessed in only a handful of studies. According to the literature, 70%–95% of orthodontic patients experience pain during treatment. About 11% of patients maintain that treatment is constantly painful.¹⁰

CONCLUSION:

It is concluded that implant failure is still observed in routine practice. The present study found that seniority of the surgeon and the position of the bone bed of patients significantly affected the likelihood of early implant failure using a single-implant system.

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