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PRESCRIPTION OF MOUTH RINSE AFTER PERIODONTAL SURGERY- A RETROSPECTIVE STUDY

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ABSTRACT

Mouthwash has been used in a number of clinical areas of oral health. Various flap techniques are advocated in flap surgery. This study is done to assess the current trends in mouthwash prescription after periodontal surgery. A study of sample size 311 was taken of patients who underwent periodontal flap surgery. The details on the type of mouthwash that was prescribed was obtained by reviewing the case sheets of the patients who underwent flap surgery. Excel tabulation was done, the data was transferred to SPSS version 19 for statistical analysis. From the study, it has been found that the frequency of chlorhexidine prescription is 66%, herbal mouthwash is 0.3%, other mouthwashes prescribed were 0.6% and 33% of the patients were prescribed no mouthwashes. Within the limits of the study, it was found that chlorhexidine (CHX) was prescribed most frequently after periodontal surgery. It was also found that CHX was prescribed most commonly to the patients who underwent periodontal flap surgery in which kirkland flap was employed.

Keywords: Chlorhexidine; flap surgery; herbal; kirkland flap; mouthwash

INTRODUCTION

The soft and mineralised plaque constitutes the main etiological factor in gingivitis and periodontitis **[1]**. Treatment of periodontitis involves removal of the bacterial deposits and means to prevent the de novo – formation of gross plaque accumulations **[2]**. A variety of different techniques for surgical treatment of periodontitis have been described, examples of subgingival curettage, gingivectomy, procedures involving flap rising, full or partial thickness flap, apically or coronally replaced flaps **[3]**.

Results from clinical trials have documented the decisive role of careful plaque control measures, not only in the prevention and treatment of gingivitis and periodontal disease, but also to avoid the recurrence of disease following periodontal surgery **[4, 5]**. Rosling *et al* studied that the healing capacity of the periodontal tissues was more due to the maintenance therapy that resulted in low levels of plaque in gingivitis, significant refilling of bone in angular bone defects and gain of clinical attachment **[6]**.

Professional tooth cleaning repeated bi-monthly as well as other mechanical plaque control measures are no doubt demanding, for the dentists as well as the patients. Items have been made therefore, to use antiseptics antibiotics in the treatment and subsequent maintenance care of patients with advanced periodontal disease **[7]**.

One of the most common concerns associated with esthetics in periodontics is gingival recession **[8]**. It has been studied that the Salivary TNF-α levels, Endothelin-1 and interleukin-21 are significantly higher in chronic periodontitis than in healthy subjects, but no significant correlation with the clinical parameters was observed **[9-11]**. Endothelin-1 (ET-1) is a 21-amino acid peptide and is a potent vasoconstrictor produced by endothelial cells causing various diseases such as atherosclerosis **[12]**. COPD and periodontitis are severe inflammatory diseases **[13]**. Periodontitis and atherosclerosis also represent a chronic inflammatory process. [14]The different tissues in the oral cavity from where stem cells can be isolated include periodontal ligament, apical papilla, alveolar bone, dental pulp tissue, maxillary sinus, periodontal ligament granulation tissue and gingiva **[15]**. Periodontal regeneration is defined as the process of complete restoration of lost periodontal tissues to their original architecture and function **[16]**. Positive clinical impact was obtained by the additional application of PRF with xenogenic graft material in the treatment of periodontal

intrabony defect in a study conducted by Panda *et al* **[17]**. The aim of the present study is to assess the current trends in mouthwash prescription after periodontal surgery.

MATERIALS AND METHODS

The study was a single centred study in a university setting.Case records of 86,000 patients who had visited Saveetha Dental College and Hospitals from June 2019-April 2020 were analysed, out of which records of 318 patients who had undergone periodontal surgery were included in the study. The patients who had undergone flap surgery and prescribed mouthwash post-operatively were included in the study.Ethical approval was obtained from the Institutional Ethical Committee . Cross-verification of the data was done by telephonic communication. To minimise sampling bias, simple random sampling was done. The data contained records of the age, gender, type of mouthwash that was prescribed after periodontal surgery and the flap technique employed. The collected data was tabulated and statistically analysed. Incomplete and censored data was excluded. The data was imported to SPSS version 19. The independent variables in the study were age, gender and the dependent variable was type of mouth rinse and flap technique. Type of analysis that was performed was descriptive (percentage, mean, SD) and inferential test (Chi-square test).

RESULTS

Case records of 318 patients who had undergone periodontal surgery were reviewed. It was found that 66% of the patients were prescribed chlorhexidine (CHX) mouthwash, 0.3% were prescribed herbal mouthwash, 0.6% of them were prescribed other mouthwashes and 33% of patients were prescribed no mouthwashes **(Figure 1)**. It was also found that CHX was prescribed to patients who underwent flap surgery with kirkland flap technique and Herbal mouthwash was given to patients who underwent papilla preservation flap technique **(Figure 2)**.

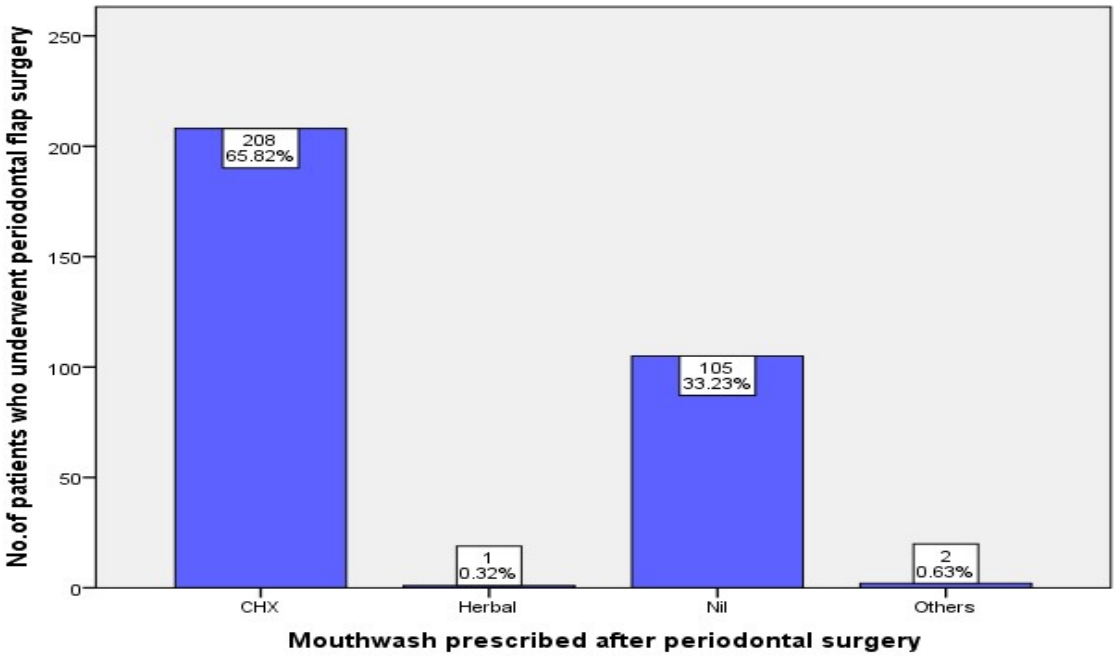

Figure 1: The above depicted bar graph shows frequency of mouth rinse that is prescribed after periodontal surgery. The X-axis denotes mouth rinse prescribed and Y-axis denotes number of patients. Chlorhexidine (CHX) is the most commonly prescribed mouth rinse in 65.82% of the patients after periodontal surgery.

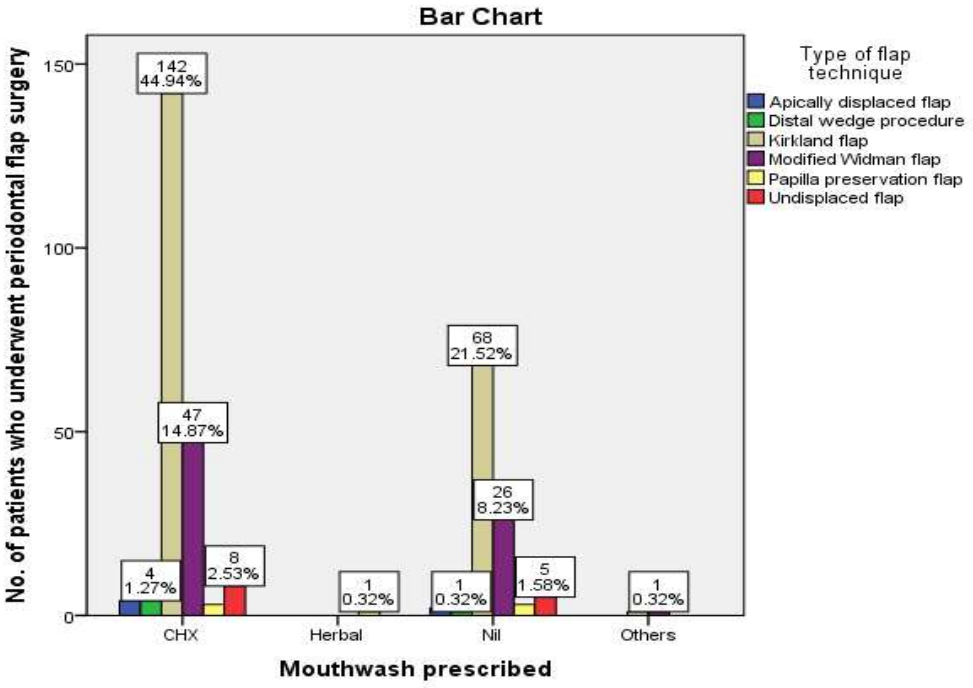

Figure 2: The above depicted bar graph shows association between different types of flap technique and prescribed mouthwash after periodontal surgery. The X-axis denotes mouthwash prescribed and Y-axis denotes the number of patients who underwent periodontal flap surgery. CHX mouthwash was prescribed in 44.94% of patients who had undergone periodontal flap surgery in which kirkland flap technique was employed than any other flap technique, this difference is statistically significant. Chi-square test, Pearson's Chi-Square value: 46.617, DF:15, p value:0.000 (p<0.05 which is statistically significant).

DISCUSSION

In the study, it was found that chlorhexidine (CHX) mouthwash was the most frequent type of mouthwash following periodontal flap surgery. In a study conducted by Sanz *et al*, It was found that 0.12% CHX immediately following periodontal surgery, for six weeks, has been shown to be a clinically effective adjunctive providing enhancement of the post-surgical management of periodontal surgical patients **[18]**.

Many studies have been done on various concentrations of CHX that can be used post surgery. In a study conducted by Elisabeth *et al*, use of CHX was compared with regularly performed professional tooth cleaning as a plaque control measure during healing following periodontal surgery. The results of this study indicated that professional tooth cleansing was somewhat more effective compared to CHX which contradicted other studies **[19]**.

In a study conducted by Oliver *et al,* it was found that the healing following periodontal surgery in patients prescribed with CHX and CHX/ herbal extract mouthwash was comparable **[20]**.

Herbal medicines are known to be used for therapy in India for a very long time **[21]**. A study showed that green tea aqueous extract can prevent Dental plaque formation and reduce gingival inflammation and it can be prescribed to patients after periodontal surgery due to its antibacterial and anti-inflammatory properties **[22]**.

In a study by J.J *et al,* wound healing was compared with patients using mouthrinse and saline post periodontal surgery. It was found that the use of an antimicrobial mouth rinse may be an effective aid in the early healing of gingival flap surgery wounds **[23]**.

The position of Inferior Alveolar Nerve should be evaluated before the placement of implants as the position varies in the south indian population in a study conducted by Kavarthapu *et al* **[24]**. Aggressive periodontitis, a type of periodontitis is the most severe form of periodontal disease affecting an individual at an early age. The placement of implants in such patients was studied by Ramesh *et al* **[25]**. It has been studied that cathepsin-P were significantly increased in smokers compared to nonsmokers with generalised chronic periodontitis **[26]**. Gummy smile has been a prevalent esthetic disorder commonly present in younger individuals that is skeletal, dento-alveolar, or soft-tissue in origin. It can also be due to jaw deformities, altered passive eruption, or tooth malpositioning **[27]**.

The limitations of this study include that the periodontal wound healing was not evaluated following different flap techniques in the patients who were prescribed with different types of mouthwash.. Thus the future scope of the study is to assess the periodontal wound healing assessment and the influence of mouthwash in periodontal healing.

CONCLUSION

Within the limits of the study, it was found that Chlorhexidine (CHX) was the most commonly prescribed mouthwash after periodontal surgery. CHX mouthwash is prescribed most commonly among patients who underwent flap surgery in which kirkland flap technique was employed. Further studies should be conducted to study the influence of mouthwash in periodontal healing.

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