

Prevalence of Pit and Fissure Sealant Pre and Post Covid-19 Infection: A Retrospective University Hospital Setting Study

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ABSTRACT

Background: The novel coronavirus, severe acute respiratory syndrome coronavirus (SARS-CoV-2), has precipitated the COVID-19 pandemic. The World Health Organisation (WHO) has recommended a society-wide quarantine approach (during acute or peak phases of the disease), social distancing and handwashing followed by the rescheduling of elective and non-urgent dental procedures. The aim of the study is to compare the prevalence of sealants pre and post covid 19.

Materials and methods: This is a retrospective study regarding patients with pit and fissure sealant treatment who have visited Saveetha dental college and hospitals from Jan 2019 to Jan 2021. All the parameters were tabulated and assessed for statistical significance using SPSS by IBM. Chi-square test was used to determine significance.

Results: The results of this study showed that the majority of male participants had increased their preference for treatment by pit and fissure sealant and there was 50% decrease in the value seen post-COVID. The most common teeth that required sealant were lower molar which was the same during the pre-COVID phase.

Conclusion: Within the limitations of the study it can be seen that the patients seeking sealants had been decreased in the post COVID period.

Key words: Innovative, Fissure, Sealant, Maxilla, Mandible

HOW TO CITE THIS ARTICLE: Ashwin Shravan Kumar, Dr. Arthi Balasubramaniam, Dr. Lalitha Rani Chellappa, Prevalence of Pit and Fissure Sealant Pre and Post Covid-19 Infection: A Retrospective University Hospital Setting Study, J Res Med Dent Sci, 2022, 10 (S1):32-35.

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Received: 24/02/2022, JRMDs-22- 55476

Editor assigned:- 26 /02/2022, PreQC No. JRMDs-22-55476(PQ)

Reviewed:- 10 /03/ 2022, QC No. JRMDs-22-55476(Q)

Revised:- 15 /03/ 2022, Manuscript No. JRMDs-22-55476(R)

Published:- 30 /03/2022.

INTRODUCTION

In general, the management of dental caries has traditionally involved using instruments that have the potential to generate bio-aerosols containing saliva, blood and tooth debris [1-8]. SARS-CoV-2 transmission between dental staff and patients is high, as many aspects of dental treatment generate aerosols. A precautionary position is to keep aerosol generation as low as possible. That is where sealants come into play. Sealant materials can control non-cavitated lesions on occlusal surfaces where there is no significant breach in the surface integrity of the tooth. These are also known as micro-invasive treatments.

Sealants are highly effective for the prevention of dental caries and also arrest the carious lesion and stop it from progressing [9]. While shallow or moderately deep lesions are likely to be successfully managed, there is not enough evidence to make recommendations for deeper lesions for long-term management. Although they may provide a good seal, they will not add much to the strength of the tooth-like other restorations. Our team has extensive knowledge and research experience that has translated into high quality publications [10-29].

The aim of this article is to evaluate the prevalence of pit and fissure sealant pre and post COVID as there were many restrictions on dental care to avoid possible transmission of disease.

MATERIALS AND METHODS

This is a retrospective data analysis done by examining records of 7000 patients in a private dental institution in Chennai. Patients undergoing pit and fissure sealant in the time period of Jan 2019 to Jan 2021 were taken for the study. Owing to the nature of the study design and setting a convenience sampling method was used and data were collected over a period of two years. All

patients who were treated with pit and fissure sealant were included in the study. Patients who have not been indicated or who have not done despite being indicated for pit and fissure sealants were excluded.

Prior to the start of the study Ethical clearance was obtained from the Ethical clearance committee of Saveetha University. The data were entered in an Excel sheet and were imported to SPSS software by IBM. Descriptive analysis was done using the Chi-square test. Comparisons were done between age, gender and teeth involved.

This is a retrospective study and all data were retrieved from Dental Information Archiving Software.

RESULTS

From Figure 1 it can be seen that the majority of sealants were placed in the age group 26-35 followed by 18-25. Also the majority of sealants 80% were done in pre-COVID phase.

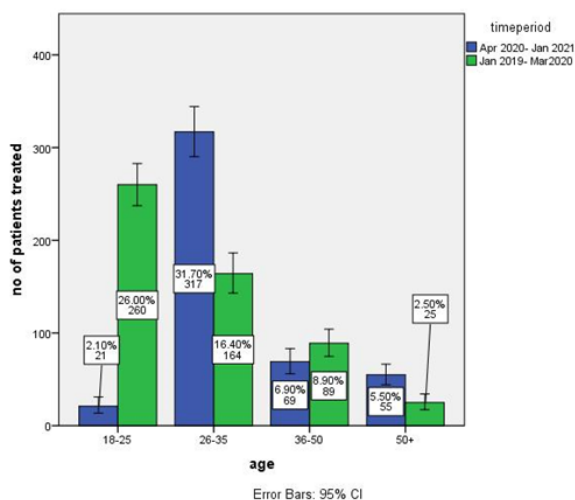


Figure 1: Representing association of sealant treatment among different age during pre and post COVID phase. X axis- Age group (18-25, 26-35, 36-50, 50+). Y axis-Time period- (Blue- Apr 2020- Jan 2021, Green- Jan 2019- Mar-2020. Chi square analysis was done and the p value was <0.01.

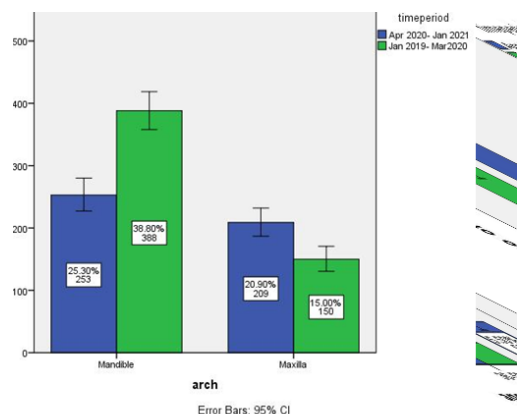


Figure 2: Representing association of sealant treatment among different gender during pre and post COVID phase. X axis- Gender group-(Female, Male). Y axis-Time period- (Blue- Apr 2020- Jan 2021, Green- Jan 2019- Mar-2020. Chi square analysis was done and p-value was <0.01.

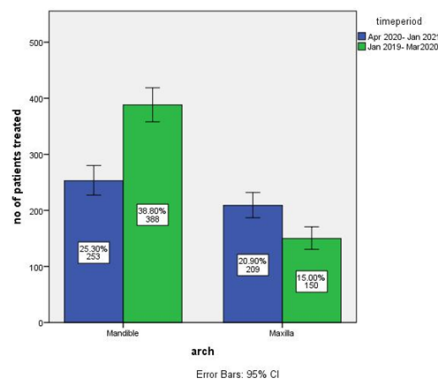


Figure 3: Representing association of sealant treatment among different arch during pre and post COVID phase. X axis- Arch-(Mandible, Maxilla). Y axis-Time period- (Blue- Apr 2020- Jan 2021, Green- Jan 2019- Mar-2020. Chi square analysis was done and p value was <0.01.

From Figure 2 it can be seen that the majority of sealants were placed among males and around 50% treatments were done in both pre and post-COVID phase.

Figure 3 shows that 60% of sealants were placed in mandibular teeth and wherein the pre-COVID phase.

DISCUSSION

Fidel and Bekes et al. in his study indicated that the awareness and willingness toward the placement of pit and fissure sealant was more in male patients which are in accordance with our study. The need for placement and the aetiology are not conclusive in nature. [30-32]

Also, a study by 2019 along with Fejerskov et al. said that the most number of sealants required were permanent molars, particularly lower molars followed by upper molars and premolars. He explained his statement by stating the complexity of anatomy in teeth which are in accordance with our study.

Said that the most prevalent population treated with pit and fissure sealant were 18-25 as they have got almost all teeth erupted and are still in the process of calcification which might be susceptible to cavitation. Our study proved similar results in the pre covid period as we can see the majority of participants treated were 18 years - 25 years old.

There is a comparison between sealant placement done in relation to individual teeth and it was concluded by that most sealants were indicated for upper first and lower molars due to presence of cusp of carabelli and oblique ridge in upper molars and deep central groove in lower moles. This is not in accordance with our study as we can see that majority of teeth treated were mandibular teeth [33,34]

CONCLUSION

Within the limitations of the study, it can be seen that the number of patients willing for sealant placement has reduced in the post covid phase. Pit and fissure sealant

placement has to be encouraged during the post covid phase as it is a preventive treatment and also does not produce aerosols. So the chances of transmission of covid 19 between the patient and dental staff is also less.

FUNDING

The present project is sponsored by Saveetha Institute of Medical and Technical Sciences, Saveetha Dental College and Hospitals, Saveetha University.

CONFLICT OF INTEREST

Nil.

ACKNOWLEDGEMENT

Nil.

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