

## Prevalence Of Different Forms Of Periodontitis: A Retrospective Study

Research Article

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## Abstract

Periodontitis is a highly prevalent oral disease that ranges from gingival inflammation to loss of teeth and supporting structures. It affects a wide range of people across all age groups and genders. It is the major cause of loss of teeth among all other oral diseases affecting the people. This study aims to evaluate the prevalence of different types of periodontitis. This retrospective study was done by analysing the case records of periodontitis patients in a private institution between June 2019-April 2020. A total of 510 periodontitis patients were randomly recruited. Data regarding the patient's periodontal status were collected from the case records and analysed. Descriptive statistics and inferential statistics were done using SPSS Software, Version 23. Among 510 periodontitis patients, 491 patients exhibited chronic periodontitis (96.27%) and 19 patients exhibited aggressive periodontitis (3.73%). The prevalence of chronic periodontitis was higher among the age group of 61-75 year old patients (36.0%) and aggressive periodontitis was present only within the age group of 15-30 years. The association between age and the type of periodontitis was statistically significant ( $p=0.000$ ). In gender wise assessment, chronic periodontitis was prevalent among 345 males(70.3%) and 146 females(29.7%). Aggressive periodontitis was prevalent among 13 males(68.4%) and 6 females(31.6%). Both chronic and aggressive periodontitis show a male predominance. The association between age and the type of periodontitis was statistically not significant ( $p=0.863$ ). The present study showed the prevalence of chronic periodontitis was higher than aggressive periodontitis among the study population.

**Keywords:** Aggressive Periodontitis; Chronic Periodontitis; Periodontitis.

## Introduction

Periodontitis is the most prevalent in adults, but can occur in children and adolescents. Chronic periodontitis is an infectious disease which is multifactorial in nature, it occurs as a result of imbalance between the host response and specific periodontal microorganisms which is characterized by the manifestation of a slow irreversible damage to the periodontal supporting tissue leading to its loss over a period of time [1]. A study conducted in Brazil (2011) [2] found that adolescents and young adults had a high prevalence of chronic periodontitis and that its presence was associated with age, socioeconomic status and calculus. The increase in the amount of tooth loss is associated with the deep periodontal pockets which result in alveolar bone destruction [3].

There is a presence of clinical inflammation in generalized aggressive periodontitis which is similar to that observed in chronic periodontitis, and in this case, age of onset (generally occurs at a younger age) and family history are important additional criteria to either diagnose or classify the condition. It is also generally observed that chronic periodontitis may subsequently be superimposed on both the forms of aggressive periodontitis (generalised and aggressive) [4].

Generalized and local forms of aggressive periodontitis are severe in the rate of progression and extent. Early diagnosis plays a crucial role in the success of the treatment and further prognosis. A positive outcome has been noted with antibiotic therapy and mechanical debridement. Prompt periodontal screening, maintaining good oral hygiene, eliminating the risk factors and the

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causative microorganisms could prevent the disease in families with a history of Aggressive Periodontitis [5]. The interpretation of the genotype status is not completely useful to alter the treatment regimen and the maintenance schedule [6]. Therefore, treatment outcome will still be heavily influenced by environmental and behavioral factors and whether an individual is genetically susceptible to disease or not. Previously our team has a rich experience in working on various research projects across multiple disciplines [7-9, 10-21].

In this context, this study aims to evaluate the prevalence of different types of periodontitis.

### Materials And Methods

This retrospective study was conducted among 510 periodontitis patients who visited a private dental college in Chennai from June 2019 to March 2020. Prior permission to utilise the data for the and analysis was obtained from the Institution Ethics Board with the ethical approval number being: SDC/SIHEC/2020/DIAS-DATA/0619-0320.

A total of 510 periodontitis patients were randomly recruited. Consecutive sampling method was carried out. Cross verification of data was done via photographs, data evaluation was done with two reviewers and cross verified with third reviewer. Relevant data such as age and gender were recorded. Patients with systemic illness and those who were on long term medications were excluded from the study. Repeated and incomplete data records were excluded. Data was verified by an external reviewer. Data regarding the periodontal status of the patients were collected from the case records and analysed.

Data was retrieved and entered in Microsoft Excel sheet and later exported to SPSS software (version 23.0) for statistical analysis. Descriptive (frequency distribution and percentage) and infer-

ential statistics (chi-square test) were done using SPSS software. Level of significance was set as  $p < 0.05$  for this study.

### Results And Discussion

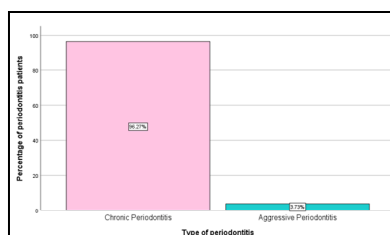
A total of 510 periodontitis patients were randomly recruited. Among 510 periodontitis patients, 491 patients exhibited chronic periodontitis (96.27%) and 19 patients exhibited aggressive periodontitis (3.73%) [Figure 1].

The study participants were divided based on the age as follows: 15-30 years, 31-45 years, 46-60 years and 61-75 years. The type of periodontitis was assessed based on the age. The prevalence of chronic periodontitis was higher among the age group of 61-75 year old patients (36.0%) followed by 31-45 year old patients (29.7%), followed by 46-60 year old patients (24.8%) and 15-30 year old patients (9.4%). Aggressive periodontitis was present only within the age group of 15-30 years. The association between age and the type of periodontitis was analysed using chi-square test and was found to be statistically significant with the p value of 0.000 [Figure 2].

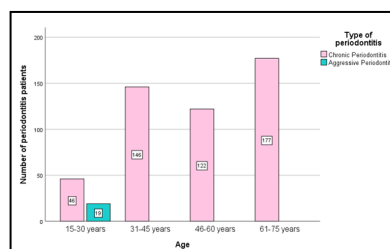
Out of 510 periodontitis patients, there were 358 males and 152 females. The type of periodontitis was assessed based on the gender. Chronic periodontitis was prevalent among 345 males (70.3%) and 146 females (29.7%). Aggressive periodontitis was prevalent among 13 males (68.4%) and 6 females (31.6%). Both chronic and aggressive periodontitis show a male predominance. The association between age and the type of periodontitis was analysed using chi-square test and was found to be statistically insignificant with the p value of 0.863 [Figure 3].

The present study evaluated the different types of periodontitis among periodontitis patients. A total of 510 periodontitis patients were randomly recruited. Out of which, 491 patients exhibited chronic periodontitis (96.27%) and 19 patients exhibited aggres-

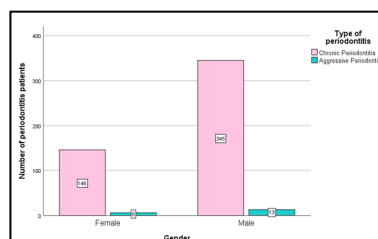
**Figure 1. Bar graph depicting the prevalence of different types of periodontitis among the study population. X axis represents type of periodontitis and Y axis represents the percentage of patients. The more prevalent periodontal disease is chronic periodontitis (Pink) which constitutes to 96.27% when compared to aggressive periodontitis (Blue) which constitutes to 3.73%.**



**Figure 2: This bar graph shows association between different types of periodontitis and the age of the population. X axis represents age groups and Y axis represents the number of patients exhibiting a particular type of periodontitis. From this graph it can be inferred that chronic periodontitis was most prevalent among the 61-75 year old patients (177 patients) and aggressive periodontitis was present only among the 15-30 year old patients (19 patients). The association between age and type of periodontitis was statistically significant (Chi-square analysis,  $p = 0.000$ )**



**Figure 3:** This bar graph shows association between different types of periodontitis and the gender of the population. X axis is the gender of the patients and Y axis represents the number of patients exhibiting a particular periodontal disease. From this graph it can be inferred that both chronic and aggressive periodontitis are more prevalent among males. The association between gender and types of periodontitis was statistically not significant (Chi-square analysis,  $p=0.863$ ).



sive periodontitis (3.73%). A study by Akula et al [22] suggested that A total of 67,236 patients (90.35%) had chronic periodontitis and 7178 (9.64%) had aggressive periodontitis. A study by Singh et al [23] suggested that periodontal disease was found to be highly prevalent in the study population (90%). These findings are in accordance with our results.

In the present study, the prevalence of chronic periodontitis was higher among the age group of 61-75 year old patients (36.0%). A study by Eke et al [24] showed that generalised chronic periodontitis was more prevalent in patients who are 30 years or older, which is similar to the findings of our study. A study by Singh et al [23] suggested that the periodontal treatment needs increased with advancing age.

In the present study, the prevalence of aggressive periodontitis was present only within the age group of 15-30 years. A study by Merchant et al [25] included all the cases diagnosed with aggressive periodontitis in their study, and the patients ranged from an age group of 5-25 years. This observation is similar to the results of our study. A study by Almadi et al [26] suggested that the prevalence of aggressive periodontitis in district Yamunanagar in a population attending schools and colleges was prevalent in the age group of 15-30 years. The results of these studies are in accordance with our findings.

In our present study, both chronic(70.3%) and aggressive(68.4%) periodontitis show a male predominance. The Government of India and World Health Organization collaborative program on oral health in India, 2007 stated that males were found to have higher scores of loss of attachment when compared to females [27]. This is in accordance with studies done by Doifode et al [28], Kundu et al [29], and Sekhon et al [30] which have concluded that periodontal disease was more common in males, with the explanation put forward being the deleterious oral habits which are more prevalent in male population. The positive relationship between the prevalence of aggressive periodontitis and the female gender have been observed in studies by Cortelli et al [31], Hormand and Frandsen [32], Baer [33] and Akula et al [21]. This finding is contradictory to our study. This could be due to the sample size of our population. Our institution is passionate about high quality evidence based research and has excelled in various fields [34-44].

Our present study showed that chronic periodontitis is more prevalent than aggressive periodontitis. However, more studies need to be conducted by considering radiographic, microbiologic, immunologic parameters to differentiate different types of periodontitis.

## Conclusion

Within the limits of the study, it can be observed that chronic periodontitis (96.27%) was more prevalent when compared to aggressive periodontitis (3.73%). Both the types of periodontitis showed a male predilection. Also, there was a statistically significant association between age and the type of periodontitis.

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