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A Retrospective Study on Partial Edentulism Of Kennedy's Class Ii Classification Based on Age and Arch

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Abstract: Aim: The aim of the study is to assess the analysis of partial edentulism of Kennedy's Class II among different age groups.
Materials and Methods: A retrospective study was conducted among partial edentulism patients.Data collection was done by reviewing 86,000 patient's records between june 2019 and march 2020. The parameters assessed were age, arches of Kennedy's Class II classification. The collected data were tabulated in excel sheet and imported to SPSS version 20.Descriptive statistics and Chi square test was used to determine the association between the variables.
Results: In the present study, the most common age group among 60 years (34.7%). Kennedy's Class II was more prevalent in mandibular arch (50.8%). There is no significant association between age of the patients and site with Kennedys class II ($p>0.05$).
Conclusion: From the study we can conclude that Kennedy's class II partial edentulism was more prevalent at the age group of 60 years and above. The most affected arch was the mandibular arch. There is no significant association between age and site at which Kennedy class II was prevalent.

Keywords: Kennedy's classification, Partial edentulism, Prevalence, Tooth loss.

INTRODUCTION

Partial edentulism in the dental arch is in which one or more permanent natural teeth are missing (Ehikhamenor et al., 2010). Edentulous areas are the essential indicator of oral health of a population worldwide [(Zaigham and Muneer, 2010)]. Causes of exodontias which may result in periodontal diseases, dental caries , traumatic injury, orthodontic and prosthodontic indicators, cystic lesions, supernumerary teeth [(Al-Shammari et al., 2006; Naveed et al., 2011)]. One of the most critical factors affecting the epidemiology of edentulism is age [(Peltzer et al., 2014)]. In addition, Loss of teeth in the oral cavity can cause difficulty in mastication, alteration of speech ,poor esthetics and affects the quality of life. The main functional component of the oral cavity is teeth and teeth provide various consequences like mastication, speech and esthetics. [(Stratton and Wiebelt, 1988; Naveed et al., 2011)]. It can also cause drifting and tilting of adjacent teeth, supraeruption of opposite teeth, changes in facial appearance and TMJ disorder (Zaigham and Muneer, 2010; Abdurahiman, Abdul Khader and Jolly, 2013; Muneeb, Khan and Jamil, 2013).

There are variation in number and location of edentulous space which related to the remaining natural teeth helps in classifying the partially edentulous arches (Zaigham and Muneer, 2010; Naveed et al., 2011).The objective of classification is to facilitate the communication about the combination of missing teeth to edentulous ridges among students, dental practitioners and laboratory technicians[(Patel et al., 2014)]. There are a number of classifications for classifying the partial edentulous arches. There are various classifications for partially edentulous arches such as Cummer, Kennedy's, Applegates, Avant, Neurohar, Eichner, ACP [(McGarry et al., 2002; Ehikhamenor et al., 2010; Zaigham and Muneer, 2010; Patel, Vohra and Hussain, 2014)]. Among all the classification Kennedy's is the most preferred and widely accepted because it provides immediate visualisation. It also allows you to differentiate between tooth born and tooth tissue borne partial denture [(Arbabi, Ahmadian and Shrifi, 2007)].

Replacement of the missing teeth with a removable prosthesis is required to restore the function [(Stratton and Wiebelt, 1988)].Previously our team has conducted numerous original studies ([No title], no date; Shree, Kumar and Ganapathy, no date; Ashok et al., 2014; Venugopalan et al., 2014; Ganapathy, 2016; Selvan and Ganapathy, 2016; Subasree, Murthykumar and Dhanraj, 2016; Vijayalakshmi and Ganapathy, 2016; Jyothi et al., 2017; Ariga et al., 2018; Basha, Ganapathy and Venugopalan, 2018; Anjum, Ganapathy and Kumar, 2019; Inchara, Ganapathy and Kumar, 2019; Ramya, Pandurangan and Ganapathy, 2019; Pandurangan, Veeraiyan and

Nesappan, 2020) over the past 5 years. The plan for this study stemmed from the contemporary interest in our community. Our team has rich experience in research and we have collaborated with numerous authors over various topics in the past decade (Deogade, Gupta and Ariga, 2018; Ezhilarasan, 2018; Ezhilarasan, Sokal and Najimi, 2018; Jeevanandan and Govindaraju, 2018; J et al., 2018; Menon et al., 2018; Prabakar et al., 2018; Rajeshkumar et al., 2018, 2019; Vishnu Prasad et al., 2018; Wahab et al., 2018; Dua et al., 2019; Duraisamy et al., 2019; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Gheena and Ezhilarasan, 2019; Malli Sureshbabu et al., 2019; Mehta et al., 2019; Panchal, Jeevanandan and Subramanian, 2019; Rajendran et al., 2019; Ramakrishnan, Dhanalakshmi and Subramanian, 2019; Sharma et al., 2019; Varghese, Ramesh and Veeraiyan, 2019; Gomathi et al., 2020; Samuel, Acharya and Rao, 2020)

Therefore, the purpose of this study is to determine the analysis of partial edentulism of Kennedy's Class II classification among different age groups.

MATERIALS AND METHODS

Study Design

An institution based retrospective study was conducted among partially edentulous patients with Kennedy's Class II. Ethical approval was obtained from the Institutional Ethical Committee, IEC approval number: SDC/SIHEC/2020/DIASDATA/0619-0320.

StudySubjects

The data was obtained from the patient's records after evaluating 86,000 patients records between 1stJune 2019 and 30st Nov 2019. A total of 124 patients were partially edentulous with Kennedy's class II classification who were included in the study.

Methodology

Informed consent was obtained from the participants. Oral examinations were done and verified clinical photographs of patients' oral cavity which was obtained from patients records was done.The subjects were divided into five groups based on age, Group I - 18-30 years; Group II -
31-40 years, Group III - 41-50 years. Group IV - 51-60 years, Group V - above 60 years.

Criteria of Selection of Subjects

Inclusion Criteria

Both male and female patients aged between 18 years and 80 of age and patients who are partially edentulous with Kennedy's class II**.**

Exclusion Criteria

Patients with complete natural teeth present, completely edentulous patients and incomplete data.

Statistical Analysis

The collected data were tabulated in excel sheets. The data was then imported to SPSS software IBM SPSS Version 20 for statistical analysis. Descriptive statistics were applied and frequencies were found for each variable. Chi Square test was performed to determine the correlation between age and the site

RESULTS

Based on the present study, we found that the prevalence of partial edentulism of Kennedy's Class II was high prevalence among 60 years (34.7%) and least prevalence among 18-30 years (5.6%) of age group. (Figure 1). There was a higher prevalence of partial edentulism in mandibular arch (50.8%) when compared to maxillary arch (49.2%) (Figure 2). There is no significant difference between age and site ($p>0.05$) (Figure 3).

DISCUSSION

The primary purpose of using a classification for removable partial denture cases is to facilitate the description of partial edentulous cases. Kennedy's classification was employed as it permits easy visualisation of partially edentulous arches [(Bharathi et al., 2014)]. The present study was initiated to assess the prevalence and pattern of partial edentulism in different age groups.

In the present study the most common age group that shows in Kennedy's Class II partial edentulism is above 60 years of age. Disparity with previous study , it was reported that 47 years is the age at which partial edentulism was seen [(Scholar, 2017)]. Different findings were seen in a previous study done by Devishree et al., Where Kennedy's Class II partial edentulism was more commonly seen at the age of 30-40 years of age [(Devishree, Sangeetha and Jain, 2018)]. Previous study conducted by Mohammad Ariflone et al., it was reported that the most common age group among 41-50 years [(Lone, Shah and Mir, 2019)]. The results obtained in the present study, found that the mandibular arch is the most common arch than maxillary arch. Similar findings were seen with the previous studies of Rana SB et al.,Shubita where the mandibular arch was more prevalent than maxillary arch [(Rana et al., 2018),(Shubita, 2015)].

Limitation of the study is small sample size and it doesn't represent ethinic groups. The future scope of the study is that it can be used in diagnosis and treatment planning as well as used for future research with a larger

population. Our institution is passionate about high quality evidence based research and has excelled in various fields ((Pc, Marimuthu and Devadoss, 2018; Ramesh et al., 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai et al., 2019; Sridharan et al., 2019; Vijayashree Priyadharsini, 2019; Mathew et al., 2020)

CONCLUSION

Within the limits of the present study, partial edentulism of Kennedy's class II was more prevalent in 60 years and above age groups. Kennedy's class II was more predominantly seen in mandibular arch than in maxillary arch. There was no significant association between age groups and site of partial edentulism.

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AUTHOR CONTRIBUTIONS :

Author 1 (Gayathri R Menon), carried out the study by collecting data and drafted the manuscript after performing the necessary statistical analysis. Author 2 (Dr. Kiran Kumar Pandurangan) aided in conception of the topic, has participated in the study design, statistical analysis and has supervised in preparation and developing the manuscript.

CONFLICTS OF INTEREST

There are no conflicts of interest.

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Figure 1	Bar graph depicting distribution of age groups of patients with Kennedy's class II
Figure 2	Bar graph depicting the site distribution of patients with Kennedy's class II.
Figure 3	Bar graph detecting the association between age and site in which kennedys class II was more prevalent

GRAPHS

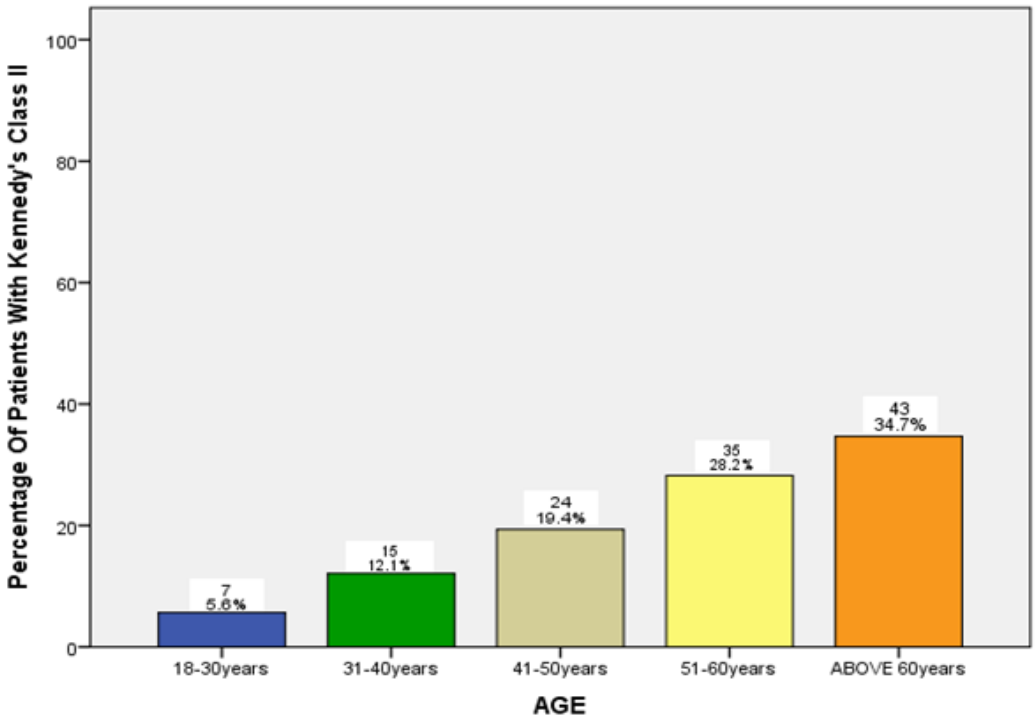

Fig.1: Bar graph depicting distribution of age groups of patients with Kennedy's class II. X axis denotes age groups and Y axis denotes percentage of patients with Kennedy's class II. Kennedy's class II was more prevalent at above 60 years of age (34.7%) and least prevalent in 18-30 years of age (5.6%).

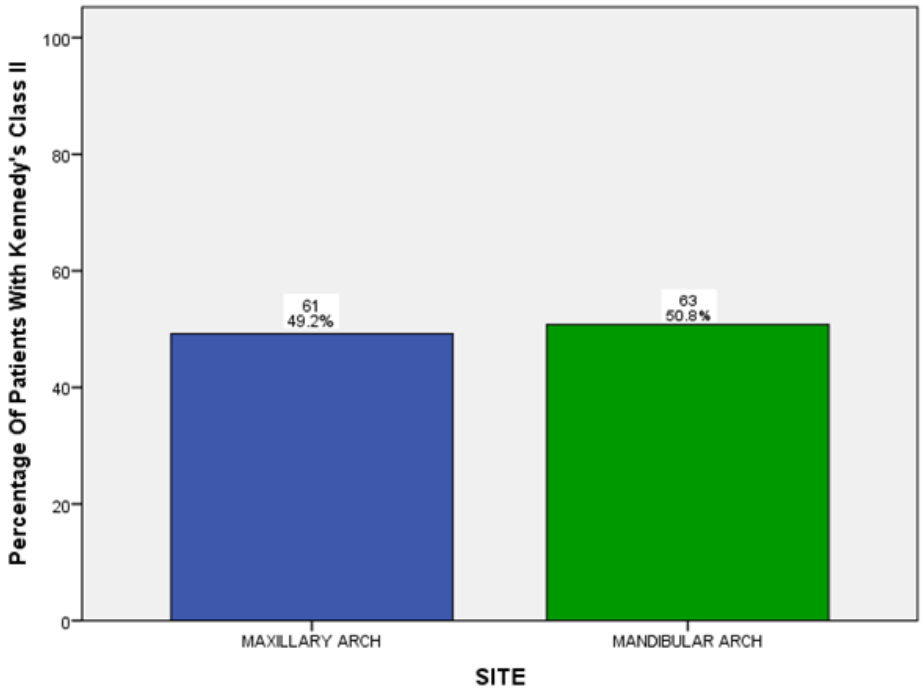

Fig.2: Bar graph depicting the site distribution of patients with Kennedy's class II. X-axis denotes site (maxillary or mandibular arch) and Y axis shows percentage of patients with Kennedy's class II. Kennedys class II was more prevalent in mandibular arch by 50.8% and followed by maxillary arch 49.2%..

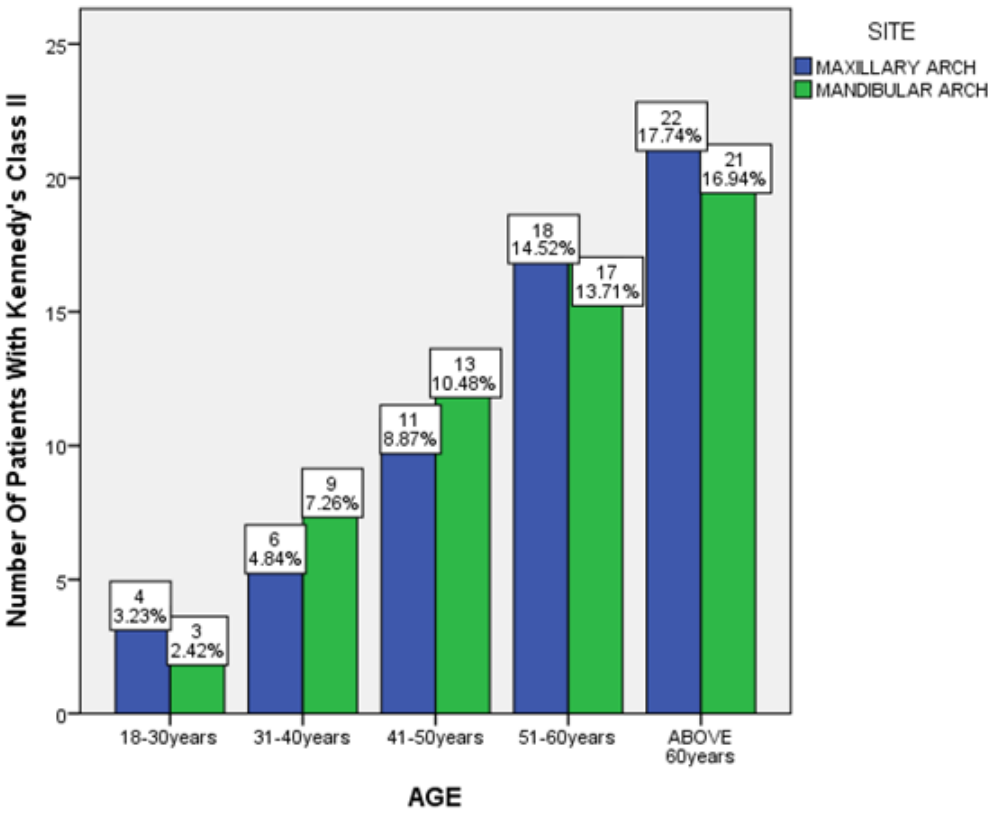

Fig.3: Bar graph detecting the association between age and site in which kennedys class II was more prevalent. X axis represents age and Y axis represents number of patients with Kennedy's class II. From the graph we can infer that Kennedys class II was more prevalent at above 60 years of age in maxillary arch. However this is not statistically significant (Pearson's Chi Square test, P value=0.920,P>0.05,statistically not significant).