Prevalence of Aggressive Periodontitis in patients visiting Ajman University Dental Clinics – Radiographic Study

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Abstract

Objectives: The aim of this research project was to determine the prevalence of aggressive periodontitis cases in patients visiting Ajman University dental clinics and to determine the prevalence of Aggressive periodontitis in patients across different ethnic groups.

Methods: A total of 200 OPG radiographs of patients were assessed for signs of Aggressive Periodontitis. The selected cases were then confirmed by correlating the findings from the patient's file. The data was then recorded for analysis.

Results: A total of 14 (7%) radiographs showed features of aggressive periodontitis, out of which 6 (42.8%) were males and 8 (57.1%) were females. Out of them 8 were Pakistanis, 5 Indians and 1 Chinese.

Conclusion: Within the limitations of this retrospective study, the prevalence of aggressive periodontitis was found to be more in the female population than in the male population. However, a larger sample size is necessary to determine the prevalence.

Keywords: Aggressive Periodontitis, Prevalence, Radiographs, Periodontal disease, Retrospective study.

Key Message: Early detection of aggressive periodontitis patients could help in controlling tissue destruction and preserving the health of the uninvolved periodontal tissue.

Introduction

Periodontal disease is one of the major dental diseases that affect human populations worldwide at high prevalence rates. Although the prevalence of aggressive periodontitis has been reported to be much less than that of chronic periodontitis, it can result in early tooth loss in the affected individuals if not diagnosed in the early stages and treated appropriately[(1)]. Aggressive Periodontitis varies among various ethnic groups, regions and countries usually affecting individuals at a young age, and its prevalence varies from 0.2% for Caucasians to about 2.6% for African Americans children and young adults[(2)].

Aggressive periodontitis comprises a group of rare, often severe, rapidly progressive form of periodontitis often characterized by an early onset of clinical manifestation and a distinctive tendency for cases to aggregate in families, in otherwise healthy individuals. The World Health Organization (WHO)[(3)] reported that 10–15% of the world populations suffer from severe periodontitis. Abdullah Gh *et al*[(4)] studied the prevalence and risk factors of aggressive periodontitis among Yemeni students from schools in the city of Thamar. He found out that 3.6% of the population had aggressive periodontitis and the risk factors were low socioeconomic level and poor oral hygiene status of most of the Yemeni students. Borrell LN *et al*[(5)] also studied the prevalence of periodontitis among ethnic groups and found a higher prevalence of periodontal disease in older adults, African-Americans, those with fewer years of education and lower income group

The main aim of this study was to assess the prevalence of aggressive periodontitis patients across different ethnic groups visiting Ajman University clinic.

Materials and Methods

The study was conducted in the University Dental Clinics. Previous OPG X-rays were reviewed from dental case records taken during the period of September 2013 to December 2013.

Procedure

The Data was obtained from the Archives of Department of Oral Medicine & Radiology. The X-rays were assessed for signs of Aggressive Periodontitis according to the age, amount and pattern of bone loss, number of teeth involved and the presence of local factors such as calculus.

Criteria for case selection

1. Localized Aggressive Periodontitis (LAP): Cases affectingincisor or first molar with proximal attachment loss on at least two permanent teeth, one of which is a molar.
2. Generalized Aggressive Periodontitis (GAP): Generalised proximal attachment loss affecting at least three or more permanent teeth, other than the first molar and incisor.
3. Radiographic pattern of bone loss: Vertical/Angular loss of alveolar bone around the first molars and incisors. Arc-shaped loss of alveolar bone extending from distal surface of second premolar to mesial surface of second molar. For Generalized Aggressive Periodontitis (GAP) ranging from

severe bone loss associated with minimum number of teeth as described above or advanced bone loss affecting the majority of teeth in the dentition. The patients who fulfilled the above criteria were included in the study. The radiographic data was correlated with the patients information, case history and clinical parameters from the patient's record.

Results

Around 200 radiographs were checked from September to December 2013, out of them 14 radiographs were diagnosed as aggressive periodontitis after correlating with patients history, family history, medical history, clinical findings and telephonic conversations. [Fig. 1, Fig. 2, Fig. 3]. Out of the 14 confirmed diagnosed cases, 6 of them were males (42.8%), while 8 of them were females (57.1%). The ethnic groups involved were mainly Pakistani (8), Indians (5) and Chinese (1). All patients had generalised aggressive periodontitis

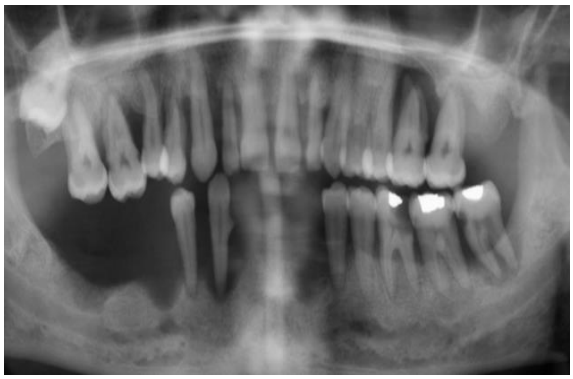

Fig. 1: An OPG radiograph of a patient visiting our clinic during the study period, showing signs of Aggressive Periodontitis

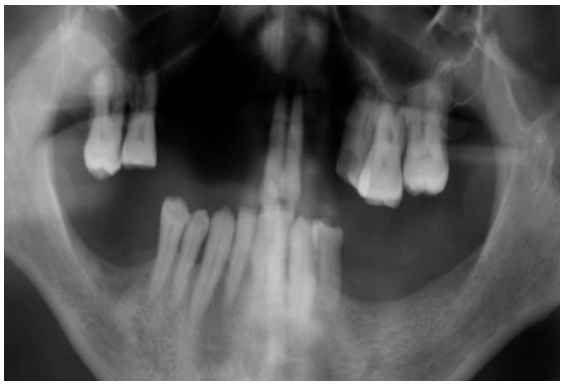

Fig. 2: An OPG radiograph of a patient visiting our clinic during the study period, showing signs of Aggressive Periodontitis

Fig. 3: An OPG radiograph of a patient visiting our clinic during the study period, showing signs of Aggressive Periodontitis

Discussion

Periodontitis contributes extensively to the global burden of oral disease, the extent of which increases with age. There are numerous reports in literature on the prevalence of aggressive periodontitis among the population. This study demonstrated that the prevalence of aggressive periodontitis was 7% among 200 patients, a relatively low prevalence in comparison to previous studies conducted in other countries. Such result might be related to the smaller sample size and a shorter time frame period. A similar result was achieved by a study done to determine the prevalence of aggressive periodontitis in an urban population in southern Brazil by Susin C[6] in which 5.5% among 612 subjects had aggressive periodontitis. Previous studies such as: Prevalence of aggressive periodontitis in adolescents and young adults from Vale do Paraiba[7], has shown positive correlation between the female gender and the occurrence of periodontal disease. Also, Hormand[8] examined a large group comprising 156 aggressive periodontitis patients and concluded that the disease affects females more often than males with a ratio of 2.5:1. Baer[9] also estimated that the female/male ratio was about 3:1, suggesting that females are 3 times more likely to develop the disease than males. This study had a similar result with 57.1% being females and 42.8% being males. Although some of the previous studies by Albandar JM *et al*[10] have indicated a strong relationship between periodontitis and smoking, Schenkein *et al*[11]also revealed that 20% of aggressive periodontitis patients were smokers, Hanioka T *et al*[12] also demonstrated that there is differences in the oxygen saturation of hemoglobin in the gingiva of smokers and non-smokers, suggesting that smokers have functional impairments in the gingival microcirculation. However, our study provided insignificant relationship between aggressive periodontitis and smoking habits. This may be due to the fact that only a few number of patients (around 1%) practised smoking occasionally and the sample size was small. The study done by Enrico Marchetti *et al*[13] Periodontal disease: "the influence of

metabolic syndrome", stated that patients with poor oral hygiene have higher blood pressure problems than do healthy subjects with good oral hygiene condition.

To conclude, UAE being a cosmopolitan country, we have patients from different ethnic groups visiting our hospital. Out of the ethnic groups Pakistani people were more in number who had aggressive periodontitis, probably because we get a lot of patients from that part of the world, even though the disease may not be prevalent in Pakistan. The treatment will be more effective if the disease is identified and the patient is informed about it at an earlier stage in order to take an action as soon as possible. However the prevalence and ethnicity cannot be concluded due to the small sample size and limited time frame of 4 months which is one of limitation of this study. In addition, future large scale studies with larger sample size should be done in order to determine the prevalence of the disease.

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