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Research Article

**STUDY TO KNOW THE AGGRESSIVE PERIODONTITIS  
PREVALENCE AMONG HIGH SCHOOL STUDENTS OF  
MULTAN**<sup>1</sup>Dr. Samina Qaisrani, <sup>2</sup>Dr. Rameez Tariq, <sup>3</sup>Dr. Muhammad Aqib Khan  
<sup>1,3</sup>Nishtar Institute of Dentistry, Multan, <sup>2</sup>Chiniot General Hospital, Faisalabad.**Article Received:** January 2019**Accepted:** February 2019**Published:** March 2019**Abstract:**

*Aggressive periodontitis, which is characterized by the rapid rate of progression of periodontal disease in the absence of a large amount of bacterial plaque or present stone, affects healthy individuals under 30 years of age.*

***Objective:** The aim of this study was to determine the prevalence of aggressive periodontitis among high school students.*

***Study Design:** A Retrospective Study.*

***Location and Duration:** In the Dental department of Nishtar Hospital Multan for one year duration from July 2017 to June 2018.*

***Methods:** 780 students attending high school were randomly selected. Probing depths were measured in 6 permanent incisor teeth and first molars each individual. Those with a depth of pocket greater than 4.5 mm were invited to participate in the next stage of the study in which periapical and bitewing radiographs were taken. Individuals with evidence of radiographic bone loss completed clinical and radiographic examinations. The prevalence of aggressive periodontitis was determined. Fisher's exact test was used to determine 4 significant differences between sex groups. Data were analyzed using the 18th version of SPSS.*

***Results:** The probing depth was > 4.5 mm in 39 of 780 patients. Thirty-four of these individuals presented a subsequent examination, which led to the diagnosis of aggressive periodontitis localized in 6 subjects (0.77%), 4 girls (0.86%), and 2 children (0.63%). There was no significant difference between boys and girls. We could not find cases of generalized aggressive periodontitis.*

***Conclusion:** The results of this study revealed that 0.77% of the population studied was diagnosed with localized aggressive periodontitis. This figure is similar to that reported for the European and North American population.*

***Key words:** aggressive periodontitis, localized aggressive periodontitis, generalized aggressive periodontitis, prevalence.*

**Corresponding author:****Dr. Samina Qaisrani,**

Nishtar Institute of Dentistry, Multan.

QR code



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**INTRODUCTION:**

Aggressive periodontitis (AP) refers to a class of periodontitis with clinical, laboratory and characteristic radiographic features<sup>1-3</sup>. This term replaces early-onset periodontitis (EOP) used in the 1989 American Periodontics Academy and the European classification of 1993. Patients diagnosed with AP are systematically healthy and show a rapid loss of periodontal attachment and destruction of alveolar bone. The rate of alveolar bone loss in these Patients is three to four times faster than in chronic periodontitis<sup>4-6</sup>. The amount of plaque and microbial

deposits is inconsistent with the periodontal destruction level observed in Patients with AP. Such periodontitis is believed to have a genetic basis, but it has been shown to be difficult to investigate susceptibility genes. However, the evidence from various reports suggests that the risk of developing AP is largely hereditary. AP can be divided into: localized aggressive periodontitis (LAP) and aggressive generalized periodontitis (GAP)<sup>7</sup>. The characteristics of LAP and GAP are summarized in Tables 1 and 2.

<b>Localized Aggressive Periodontitis</b>	
•	<b>Onset around puberty</b>
•	<b>Localized involvement of first molar/incisor</b>
•	<b>Interproximal attachment loss on at least two permanent teeth, one of which is a first molar and involving no more than 2 teeth, other than first molars and incisors</b>

**TABLE 1: CLINICAL FEATURES OF LOCALIZED AGGRESSIVE PERIODONTITIS**

In the pathogenesis of AP, there were three types of bacteria in susceptible hosts: Actinobacillus actinomycetemcomitans, Porphyromonas gingivalis and Tannerella forsythensis. In fact, several studies

have shown actinomycetemcomitans as an important agent for LAP<sup>8</sup>. It should be kept in mind, however, that other bacteria have a specific role to play in the pathogenesis of AP [9].

<b>Generalized Aggressive Periodontitis</b>	
•	<b>Generally affecting patients &lt; 30 years old</b>
•	<b>Pronounced episodic nature of destruction of alveolar bone</b>
•	<b>Generalized interproximal attachment loss involving at least 3 permanent teeth other than first molars and incisors</b>

**TABLE 2: CLINICAL FEATURES OF GENERALIZED AGGRESSIVE PERIODONTITIS**

The aim of this study was to determine the prevalence of AP among high school students aged 15-16 years. To our knowledge, this study represents the first attempt of this kind of research.

**MATERIALS AND METHODS:**

Of the 1,962 students attending 8 different high schools of Multan, 780 were randomly selected for this study. The study population consisted of 314 (40.26%) children and 464 (59.49%) girls. The

Protocol was approved by the Corporate Review Board in accordance with the Declaration. The parents of each participant were informed about the nature of the study, and a consent form approved by the Institutional Review Board was signed before the study.

The clinical examination was carried out in two stages: The first phase of the study was conducted in the school where the students were enrolled. A Williams probe (Hu-Friedy, Chicago, IL) was used to

measure the depths of the first molar and incisor teeth in 6 different regions (mesiobuccal, buccal, distobuccal, mesiolingual, multilingual and distodilual). All Patients with PD > 4.5 mm in the first molar or incisor teeth were treated in phase II.

In Phase II, the Patients were treated at the Dentistry Faculty Clinic. Two-bit radiography was performed from the right and left molar regions in each Patient. If the Patients had PD above 4.5 mm in any of the incisive regions, the AP radiography of the affected area was also taken using the Pralleling technique. All localized bone loss sites believed to be the result of local etiologic factors, ie restoration leading to the interproximal area, deep CII caries lesions, orthodontic bands, crowd, etc. It was removed from the study. X-rays were examined using a magnifying lens by 3 members of the Periodontics Division. A range meter was used to measure the distance between CEJ and alveolar ridge (CEJ-BC) up to 0.1 mm. Areas with CEJ-BC > 2 mm were recorded.

AP frequency was determined for each sex. Fisher's exact test was used to determine a significant difference between the groups. P < 0.05 was considered statistically significant. All data analysis was performed using the 17th version of SPSS.

### RESULTS:

In the first phase of the study, 780 patients (465 girls, 315 men) were examined. Thirty-nine (5%) of these patients had a probing depth of > 4.5 mm in the first molar / incisor area. These 39 Patients were later treated in phase II. He was selected for additional clinical and radiographic examinations at the stage. 37 of these Patients (87.18%) were included in the study. He was admitted to the Faculty of Dentistry Clinic. Five Patients (12.82%) left the study and did not come to Phase II. The diagnostic criteria used are based on the consensus report of the American Society of Periodontology (Consensus Report 1999). Two of 34 patients (0.26%) were diagnosed as chronic periodontitis and 6 (0.77%) were diagnosed with LAP. No patient was diagnosed with BAP.

The results can be summarized as follows:

The incidence of LAP in children was 2/315 (0.63%) and in girls 4/465 (0.86%). There was no statistically significant difference between males and females. The mean sound depth on the mesial side of the first permanent molar ( $4.8 \pm 0.8$  mm) in children was higher in girls ( $4.5 \pm 0.7$  mm). The first permanent molar on the right side was the most common tooth. The mesial side of the first molar was the most common area with a DP > 3 mm between the continuous molars.

### DISCUSSION:

Much of the studies to date have reported that the

prevalence of AP in Caucasian populations is between 0.1 and 0.2%. The prevalence of LAP among American school children aged 14 to 17 is estimated to be 0.2% for Caucasians and 2.6% for African-Americans. In contrast, white adolescents were more likely to have LAP than their white male counter [10]. A higher prevalence of AP has been reported in studies in some developing countries. Kronauer reported a prevalence of 0.1% LAP among 16-year-old Swiss adolescents. They also did not report a gender difference in the prevalence of this disease. In another study, Saxby reported a difference in the prevalence of AP for different ethnic groups in the United Kingdom [11]. The overall prevalence of AP was 0.1%. However, the prevalence was 0.02% for the Caucasian group, 0.8% for the Afro-Caribbean group and 0.2% for the Asian group. These differences were reported statistically significant. There was no difference in prevalence between men and women [13].

The difference in AP prevalence in different populations can be attributed to different research methodologies used in various studies [14]. On the other hand, genetic susceptibility may also highlight the difference in the prevalence of this disease in different populations<sup>15</sup>. While some studies provide a preliminary preference for female patients, especially in young age groups, others do not report incidence differences between men and women when research is designed to test bias.

### CONCLUSION:

In this study, 780 high school students aged between 15-16 years were examined to determine the prevalence of AP. Six (0.77%), 4 (0.86%) female, 2 (0.63%) male, LAP were diagnosed. No GAP cases were found. Furthermore, there was no gender difference in prevalence in our study population.

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