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The prevalence of the localized aggressive periodontitis among students at 14-16 years in Ilam, Iran

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ABSTRACT

The localized aggressive periodontitis, called an early onset periodontitis, is periodontal tissue destruction that symptoms appear at adolescence and youth that the prevalence of it is different in different areas. The cross-sectional present study was done by two-step method on 1000 individuals at 14-16 years high school students. The examination was done in two parts. After isolating samples at office school in normal light, overthrow of the lips and cheeks by tongue blade or mirror examination, the pockets of mesiobuccal, mesiolingual, distobuccal, distolingual, buccal and lingual of first molar and incisors of both jaw were measured by Williams probe. In step two the suspicious student invited to clinic for more diagnosis. Other information was collected by Questionnaire. There were 500 boys and 500 girls that were examined. In the first step of examination, the 32 individuals who suspected were isolated. In the second examination, the 7 persons isolated as patient. The prevalence of that was 0.7% in population.). The prevalence divided into 0.3% females and 0.4% males. By Chi-square was determined that there wasn't any significant relationship about gender ($p>0.05$). In respect of 0.7% prevalence for local aggressive periodontitis in Ilam, Iran and the prevalence around the world about 0.1-0.3%, it can concluded that Ilam has the more prevalence and it needs more healthy services attention.

Key words: Localized aggressive periodontitis, Ilam, student

INTRODUCTION

The localized aggressive periodontitis, called an early onset periodontitis, is periodontal tissue destruction that symptoms appear at adolescence and youth, and it divided into generalized and localized. There are many different titles for youth periodontitis such as *juvenile periodontitis* and *prepubertal periodontitis* [1, 2]. The localized aggressive periodontitis appeared with bone recession into first molars and incisors areas, and there were more damages in generalized type. The localized aggressive periodontitis subjects are resistant to tooth decay. The intra-tooth decay was seen less comparison with healthy individuals, which related to immunologic and micro flora of pockets's changes. This disease was seen in male and female. It was reported in studies, the 2-10 fold prevalence was seen in females [3]. Another believe about the high prevalence of this disease is related to research's wrong or more likely in females to seek dental care, so they referred to clinics more and constantly had more frequent in researches [4]. In a National survey of oral Health of U.S. the localized type was defined as the loss of clinical attachment more than 3 mm in one of first molars and at least one of incisors or second molars and 2 or less suffered premolars or canine [5]. The rate and intensity of atrophy are not related to calculus and plaque amounts and the disease was seen in healthy adults from all directions [6]. The prevalence of this disease was reported less than 1% in United State and other industrialized countries [7]. The prevalence of localized and generalized type are mentioned 35% and 31%, respectively [5]. There are a few long-term studies about the evaluation of the prevalence

of this disease. A 5years-study on 167 teens at 14-19 years in England showed that the most involved teeth were Maxillary first molar and Mandibulary mediate-incisors [8]. Another long-term study was done in 1984-1992 among 2776 Norwegian teens in 16 years old [9]. By using Bite-wing radiography and confirming disease, and more than 3 mm space between C.E.J and alveolar proximal bone crest in full-growth teeth, 3.5% teens had bony lesion that got 2 fold in last year of research (1992). The percent of subjects that had 3mm atrophy or the most atrophy area was bone; during research was increase from 5.2% to 9.33%. The Cogen & Wright in 1992 investigated the prevalence of this disease between Black and White people, and they reported them 5.1% and 3%, respectively [10]. The development of disease in suffered area and people with low socio-economic status was fast [7, 11]. The purposes of this present study was evaluating the prevalence of this disease among 14-16 years students in Ilam, Iran also in boys and girls separately, and demonstrating surface and type of the most suffered teeth, and the relationship between economic status and the prevalence of this.

MATERIALS AND METHODS

The cross- sectional present study was done by two-step method on 1000 individuals at 14-16 years high school students. The examination according to characteristics in Cross-sectional presented by Baer is followed [12]:

- 1- The patient has complete health and medical history, and no systemic disease.
- 2- The 4 mm or more atrophy in connective tissue attachment at least two permanent teeth (at least one molar) and 2 mm or more bone recession around suffered tooth [6, 11].
- 3- The loss of balance between local moving and bone recession and atrophy of connective tissue attachment that was calculated with Plaque Index (PI) and calculus index (Calculus Surface Severity Index) and mismatching with Gingival Index (GI).

The examination was done in two parts. After isolating samples at office school in normal light, overthrow of the lips and cheeks by tongue blade or mirror examination, the pockets of mesiobuccal, mesiolingual, distobuccal, distolingual, buccal and lingual of first molar and incisors of both jaw were measured by Williams probe. The patients with 5mm or more depth pocket were isolated and PI, GI and CSSI were calculated for them. The high restoration, Grade II for serve decay, existence of overhang in restoration, plaque or orthodontic cord, improper coating and irregular teeth were ruled out in study. The suspected local aggressive periodontal were invited to college for second visit. In second step, the depth of six surfaces of teeth and also PI, GI and CSSI were measured. The usual questions about ethnic diseases and general healthy were asked. The bite-wing radiography was done from first molars and in case of incisors and others; the set of pre-epical radiography was done. The radiographic pictures were investigated by a researcher and a periodontics specialist in negatscope light. With respect of general healthy and whole characteristics of disease, the suffered from aggressive local periodontitis were diagnosed by the connective tissue recession about 4mm or more at least in 2 permanent teeth (one of them was molar), the bone recession around suffered tooth more than 2 mm, the lack of balance between local moving and atrophy of connective tissue attachment and atrophy of around bone. The statistics were analyzed by Chi-square test.

RESULTS AND DISCUSSION

There were 500 boys and 500 girls that were examined. In the first step of examination, the 32 individuals who suspected were isolated. In the second examination, the 7 persons isolated as patient. The prevalence of that was 0.7% in population (Table 1). The prevalence divided into 0.3% females and 0.4% males. By Chi-square was determined that there wasn't any significant relationship about gender ($p>0.05$). The comparing between suffered teeth showed that the first permanent molar with 4mm probing depth was the most common. The most suffered surfaces were mesiolingual, mesiobuccal, distolingual and distobuccal. In both gender, the most suffered tooth was first molar in down jaw. The aggressive periodontitis is a periodontal disease with severe tissue atrophy, and the common age is 14-16 years. Probably reasons for suffering from that were such as the role of special bacteria like *Acintobacillus Acintomycetem Comitans*, pathogen bacteria, Neutrophils function disorders (70-75%) of cases in phagocytes function disorder [13, 14, 15, 16] and chemotaxis [15], the sensitive Macrophages that secreted much amounts of destroyed mediators (L1B, PGE2) [17, 18, 19]. However, Sjodin *et al* in 1989-1993 and Cogen *et al* in 1992 showed that the age of suffering from disease was simultaneously with Primary teeth [10, 20]. So that was suggested examination for diagnosing early in younger patrons, but in respect of unstable dental system in primary period, it seems 14-16 years old was the best survey time, that was done in present study. The prevalence of aggressive periodontitis was 0.45% for females and 0.7% for males, in line with Aass & Saxby (1994) results [5]. In national study in U.S. in 1986-7 the males had more prevalence and induced, but it was not statically significant [10]. The Clerehugh *et al* in 5-year longitudinal study monitored 167 subjects at age 14-19 in 1990 found that the

most suffered teeth were maxillary first molar and mandibular santrals [8] whereas the present study showed the most common tooth was mandibulay permanent molar.

Table 1. All of the examined person divided to age, suspected cases and suffered from LIP

Gender	14 years olds	15 years olds	16 years olds	Total	Suspected cases	Referring to clinic	Suffered from LIP
Girl	129	144	227	500	13	8	4
Boy	231	123	146	500	19	11	3
Total	360	267	423	1000	32	19	7

CONCLUSION

In respect of 0.7% prevalence for local aggressive periodontitis in Ilam, Iran and the prevalence around the world about 0.1-0.3%, it can concluded that Ilam has the more prevalence and it needs more healthy services attention. We hope get exact result for prevalence of this disease in Iran with more same studies.

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