GENDER SPECIFIC PREVALENCE OF GINGIVAL DISEASE AMONG THE PATIENTS VISITING BAQAI DENTAL HOSPITAL

SHAKILA NAZIR, BDS, MCPS, PhD
ABDUL HAKEEM AIRAI, BDS, DDP (UK)

ABSTRACT

The aim of the study was to investigate the prevalence of gingival disease with regards to the age and sex of the patients who sought treatment from Baqai Dental Hospital. Out of 746 patients, 524 (71.18% male and 28.82% female) were diagnosed as suffering from gingivitis, both acute and chronic. Standard protocol procedures for examination and diagnosis of gingival disease were followed. Lack of proper oral hygiene was concluded as the dominant causative factor.

Key words: prevalence, gender-wise distribution, gingival disease.

INTRODUCTION

Gingivitis may be an early sign of a systemic disorder, which affect the response to infection (eg, diabetes, AIDS, vitamin deficiency, leukopenia), particularly if it occurs in patients with minimal dental plaque.1

Gingivitis is caused by substances derived from microbial plaque accumulating at or near the gingival sulcus. It was indicated that a portion of gingival lesions can and does progress to periodontitis.2

Periodontitis is always preceded by gingivitis. But most gingivitis remains stable for years without progressing to periodontitis.3 Acute exacerbation of gingivitis can lead to destructive periodontitis.4 The findings of Prayitno et al., (1993) revealed that gingivitis is a poor predictor of periodontitis in subjects younger than 30 years.5 According to the results of Trombelli et al., (2006), the susceptibility to gingival inflammation in response to the experimentally induced plaque accumulation may be related to susceptibility to periodontitis.6

The main cause for gingival bleeding, revealed and reported by a prior study was, due to the plaque accumulation, which in turn was due to improper and inefficient cleaning method and unsuitable cleaning time.7

Gingivitis is highly prevalent in adults in the United States. It is characterized by inflammation of the gingiva without loss of connective tissue attachment to the teeth. Improved mechanical and chemical plaque control, as well as improved restorative materials to facilitate plaque removal, continue to enhance the patient’s ability to control the plaque bacteria.8 With increasing the age from 6 to 11, the severity of gingivitis was increased, reported by Ketabi et al., (2006). Furthermore, in all age groups, the level of oral hygiene was superior in girls.9

METHODOLOGY

A cross sectional prevalence study was conducted to evaluate the prevalence of gingival diseases in male and the female population.

A predesigned patient’s examination proforma was used to keep the record of the entire data. Only dentate patients, who attended the out patients department of Baqai Dental Hospital during the year 2008 were included in the study. An overall 746 patients were examined. Two distinct levels were considered for screening of the patients i.e. the gender and age of a person. The investigation was done and assessed, by taking history of the patient regarding the predisposing disease and the clinical examination. A routine intra-oral examination was performed for diagnosis of the disease, with

1 Associate Professor of Oral Biology, Baqai Dental College / Baqai Medical University, Karachi. Contact # 03008283345, e-mail address: shakila.nazir@gmail.com
2 Associate Professor of Community Dentistry, Baqai College / Baqai Medical University, Karachi
the help of dental instruments, while patients seated in the dental chair. Evaluation of the disease was done by the visual method of examination, and with the periodontal probe where needed, according to the standardized method. Examination was performed by a single examiner.

Status and severity of gingival inflammation was calibrated and recorded, solely by the presence or absence of chronic or acute disease. This is said to be an accurate method of recording and time efficient in outpatient department. Patients with diffuse edema of acute inflammation and pain with grayish sloughing, flake like particles and debris adhering to the eroded surface with vesicles formation was regarded as an acute gingivitis.

The chronic gingivitis was recorded when it was painless, complicated by acute and subacute exacerbations, soggy puffiness that pits on pressure, marked softness and friability, with ready fragmentation on exploration with probe, and pinpoint surface areas of redness and desquamation and firm leathery consistency.

RESULTS

Following the baseline examination and the distribution outline revealed by the clinical examination, parameters were charted out. Total 746 patients were examined for the occurrence of gingival diseases in the outpatient department of Baqai Dental Hospital during the year 2008. There were 524 patients from the reported group, who were diagnosed as having gingival diseases (71.18 % males and 28.82 % females) (Table 1, Fig 1) Among them 68.32 % males and 27.29 % females were observed suffering from Chronic Gingivitis, while 2.86 % males and 1.53 % females appeared with Acute Gingivitis, who reported with severe pain and discomfort (Table 1).

Prevalence of Chronic Gingivitis was observed in 501 (95.61 %) patients (358 males and 143 females). Acute Gingivitis was observed in only 23 (4.39 %) of the suffering patients (15 males and 8 females) (Table 1).

![Figure 1: Percentage of patients with gingival diseases with respect to the gender](image)

<p>| TABLE1: PREVALENCE OF GINGIVAL DISEASES IN MALE AND FEMALE POPULATION |
|------------------------|----------------------------|----------------------------|------------------------|</p>
<table>
<thead>
<tr>
<th>Gender</th>
<th>Chronic Gingivitis</th>
<th>Acute Gingivitis</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>358 (68.32 %)</td>
<td>15 (2.86 %)</td>
<td>373 (71.18 %)</td>
</tr>
<tr>
<td>Female</td>
<td>143 (27.29 %)</td>
<td>8 (1.53 %)</td>
<td>151 (28.82 %)</td>
</tr>
<tr>
<td>Total</td>
<td>501 (95.61 %)</td>
<td>23 (4.39 %)</td>
<td>524 (100 %)</td>
</tr>
</tbody>
</table>
TABLE 2: PREVALENCE OF CHRONIC GINGIVITIS ACCORDING TO AGE AND SEX.

<table>
<thead>
<tr>
<th>Age in years</th>
<th>10-20</th>
<th>21-40</th>
<th>41-70</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>18 (5.03%)</td>
<td>215 (60.06%)</td>
<td>125 (34.92%)</td>
<td>358</td>
</tr>
<tr>
<td>Female</td>
<td>7 (4.90%)</td>
<td>86 (60.14%)</td>
<td>50 (34.97%)</td>
<td>143</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>301</td>
<td>175</td>
<td>501</td>
</tr>
</tbody>
</table>

CHRONIC GINGIVITIS

![Bar chart showing prevalence of chronic gingivitis by age and gender]

Fig 2: Prevalence of Chronic Gingivitis according to age and sex

TABLE 3: PREVALENCE OF ACUTE GINGIVITIS ACCORDING TO AGE AND SEX.

<table>
<thead>
<tr>
<th>Age in years</th>
<th>10-20</th>
<th>21-40</th>
<th>41-70</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>8 (53.33%)</td>
<td>5 (33.33%)</td>
<td>2 (13.33%)</td>
<td>15</td>
</tr>
<tr>
<td>Female</td>
<td>4 (50.00%)</td>
<td>3 (37.50%)</td>
<td>1 (12.50%)</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>8</td>
<td>3</td>
<td>23</td>
</tr>
</tbody>
</table>

ACUTE GINGIVITIS

![Bar chart showing prevalence of acute gingivitis by age and gender]

Fig 3: Prevalence of Acute Gingivitis according to age and sex
DISCUSSION

By focusing attention on the levels of oral health conditions, it enabled us to understand the occurrence of the gingival diseases in the population near the suburbs of Baqai Medical University. It was observed that the dental plaque has been the primary factor in the destruction of oral and gingival health. Poor oral hygiene in that population seemed to be the primary cause of gingival diseases. It also appeared, that the occurrence of the disease was basically due to the lack of knowledge and awareness to maintain the oral hygiene which may also be the contributing factors.

The association between dental plaque and gingival health was also reported in the prior studies. Dental plaque accumulation has been reported to be the major cause of gingivitis, which confirms the consistency of the predisposing factors of the present study. Periodontopathic bacteria and subgingival calculus is closely associated with gingivitis and periodontitis. There is now a considerable evidence to support the concept of the relationship between lower level supra-gingival plaque and gingivitis.

The results of El-Qaderi, and Quteish Ta‘ani (2006) showed that males had significant lower plaque but significantly higher gingival scores than females (P < 0.001). El-Qaderi, have not documented any reason for lower plaque level resulting into a higher gingival scores, which seems to be contrary to the fact and not consistent with the results of the present study. Almost similar observations were reported in another study that, the boys had higher plaque and gingival scores than girls.

Observations and results of the present study showed that the prevalence of gingival diseases is more in male than in female population which is evident as shown, (71.18 % of male and 28.82 % of female) (Fig 1). Results of the present investigations coincide with the data of studies performed earlier and reported by Ketabi et al., (2006), that the level of oral hygiene was better in girls than in boys. High prevalence of the disease among the male population was also observed in the prior studies, e.g the level of oral hygiene was superior in girls.

According to another report, medium severity of gingivitis was observed in (12.9 % boys and 4.5 % girls). The findings of the present study are consistent with those reported earlier.

Although the peak prevalence of gingivitis in a prior study was observed in the 15-year olds, it was also reported that, with the increasing age from 6 to 11 yrs, the severity of gingivitis was increased. Whereas in the present study, the frequency of chronic gingivitis has been found significantly higher in the age group of 21 to 40 years, in both males and females (Table 2), as compared to younger ones, of 10 to 20 years and in the older age group i.e 41 to 70 years (Fig 2). In contrast, the prevalence of acute gingivitis was observed in 53.33 % of male and 50.00 % of female population between the age group of 10 to 20 years, which is higher as compared to the people between the ages of 21 to 70 years (Fig 3).

It could thus be hypothesized that the disease would have started in early ages, which ultimately converted into the chronic stage.

Significant differences in prevalence were revealed among persons presenting with Chronic gingivitis and Acute gingivitis. Prevalence of Chronic Gingivitis was highest between the ages of 21-40 years, and the lowest between 10 to 20 years of age (Fig 2), whereas prevalence of Acute Gingivitis was highest between the ages of 10 to 20 years and lowest among the people with 41 to 70 years of age (Fig 3).

In majority of the sample population the children and adolescents were especially undernourished and frequently had high levels of undisturbed dental plaque, which appeared to be the main cause of destruction for their gingival health.

Comparing these results with a study performed earlier, the state of oral hygiene and the incidence of gingivitis are closely linked.

As it was reported that the acute exacerbation of gingivitis can lead to destructive periodontitis. It is therefore necessary to control the disease in its initial stages before its conversion into the destructive periodontitis, because the ongoing research supports the association of periodontal infections with cardiovascular/cerebrovascular, endocrine and other systemic diseases.
Gender specific prevalence of gingival disease

Hence it has become very important area of research, regarding its spread and prevention.

CONCLUSION

The results suggest that susceptibility to gingival diseases is associated with the poor level of oral hygiene, and also with the unhealthy living conditions. The occurrences of such diseases was basically due to the poor literacy rate, resulting into a pitiable understanding, regarding the importance of methods to maintain their oral hygiene which ultimately exert a negative effect on the oral and gingival health.

The present study revealed, and it was particularly noted, that the prevalence of gingivitis was higher in the male as compared to the female population, irrespective of their age and the type of disease.

Increasing population’s awareness of gingival diseases is therefore indispensable. Prevention and management is worthwhile for health benefits to control and treat the gingivitis and prevent from leading into severe periodontitis and particularly cardiovascular and cerebrovascular diseases.

REFERENCES

1 Ubertalli JT. Gingivitis. The Merck Manuals. 2008; Source:http://www.merck.com/mmpe/sec08/ch095/ch095e.html
10 Ursell M. Disease detection in periodontics examination and diagnosis. Dental Practice. The journal for the dental team. 2006 Jan, Feb; 5(2): 10-13