Prevalence of Periodontal Disease in Children with Leukemia and Thalassemia

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ABSTRACT

Background. Various periodontal disease can occur in children and adolescents. Some can take place quickly and periodontal tissue damage. Several previous studies indicate that systemic diseases associated with periodontal disease in children.

Objectives. This study aims to determine the prevalence of periodontal disease in children with leukemia and thalassemia.

Methods. The design study is a cross-sectional approach. Periodontal pocket depth measurements performed using the WHO standard of measurement. The samples in this study were drawn from the entire population using accidental sampling method. Sampled population was pediatric patients with leukemia and thalassemia. These patients were undergoing treatment in hospital Wahidin Sudirohusodo Hospital Makassar.

Results. During the study, children with leukemia as many as 18 patients and children with thalassemia by 8 patients. Distribution of pediatric patients suffering from leukemia by CPITN score; score of 2 as many as 10 patients (55.6%), a score of 1 as 6 patients (33.3%), and score of 0 as many as 2 patients (11.1%). CPITN score in children with thalassemia; scores 2 in 1 patient (12.5%), a score of 1 as 6 patients (75%), and score of 0 by 1 patient (12.5%).

Conclusion. From the study, it can be concluded that in children with leukemia or thalassemia, indicating the level of periodontal disease is still high.

Keywords: periodontal disease, pediatric, leukemia, thalassemia.

BACKGROUND

Periodontal tissue is the tissue that surrounds the teeth and tooth serves as a buffer, consisting of the gingiva, cementum, periodontal ligament and alveolar bone. Both normal and abnormal circumstances of the periodontal tissues is important to note before getting periodontal tissue disorder. Disruption of periodontal tissues can affect the state of the network buffer fourth gear, so it can cause periodontal disease. At the initial stage is called gingivitis, gingival become swollen and red due to inflammation. In a more serious form called periodontitis, gingival recession and supporting tissues damaged.

Indonesian society many infections in dental hygiene problems associated with the oral cavity. The focal infection theory which has existed since the 19th century and 20 current, generates an epidemiological study, that oral infections, especially in the marginal part of the gingival and apical periodontitis is a risk factor for systemic
The prevalence of periodontal disease can be seen with the number of cases on the epidemiology of periodontal disease, especially in children that occurred in several countries. The prevalence obtained from various nations and countries, but will be discussed in the next chapter.

The prevalence of periodontal disease in children is very high and the presence of periodontal disease is closely associated with the occurrence of systemic disease. Until now, the lack of data describing the prevalence of periodontal disease in children with systemic diseases, especially those in Makassar.

**OBJECTIVE**

The purpose of the authors in this study is to determine how much the level of prevalence of periodontal disease in pediatric patients with leukemia and thalassemia, in RS.Wahidin Sudirohusodo Makassar in 2013.

**MATERIALS AND METHOD**

**MATERIALS**

Periodontal disease can be classified as either gingivitis or periodontitis that occurs as a result of the presence of plaque, bacteria, or the supra-gingival calculus. In general, periodontal disease begins as gingivitis, and only in some individuals will progress to periodontitis. 1999 International Workshop on research cited VS Chauhan et al. in the classification of periodontal disease, periodontal disease to classify children as follows: chronic gingivitis, aggressive periodontitis, chronic periodontitis, periodontitis as a manifestation of systemic disease, and necrotizing periodontal disease.

Periodontal disease in children and adolescents may be limited to the gingival tissues or tissue damage in the form of the periodontium, and in some cases can lead to tooth loss. Gingivitis is a common occurrence in children aged 5 years, mainly occurs around the age of adolescence that affects more than 80% of young children, while almost all of the population has gingivitis experience.

Periodontitis is usually accompanied by gingivitis lead to irreversible damage of the supporting tissues around the teeth, including the alveolar bone. Severe form, for example, from aggressive periodontitis that results in damage to the periodontium during childhood. Periodontal disease occurs at any age, and the process occurs slowly. The initial phase, generally occurs in adolescence. Therefore, it is very important to recognize the problem of periodontal and oral health attention to the child to achieve a healthy mouth circumstances in adulthood.

**Perodontitis as Manifestations of Systemic Disease**

Periodontitis as a manifestation of systemic disease can occur in people with diabetes are dependent on insulin (Insulin Dependent Diabetes Mellitus).
Periodontitis as a manifestation of systemic disease children is a rare disease that often starts between the time of the eruption of primary teeth until the age of 4 or 5 years. Periodontitis occurs in localized and generalized forms. In localized form, the affected area showed rapid bone loss and minimal inflammation of the gingiva. In a generalized form, there is rapid bone loss around the teeth and almost all marked with gingival inflammation. Increased pathogen is suspected, namely *Actinobacillus actinomycetemcomitans*, *Prevotella intermedia*, *Eikenella corrodens*, and *Capnocytophaga sputigena*.

**Etiology of Periodontal Disease**

Endodontal human infections and periodontal microflora associated with the complex in which approximately 200 species (section apical periodontitis disease), and more than 500 species (section marginal periodontitis disease) that have been found. The infection is predominantly anaerobic bacteria, and most gram-negative rods. Periodontitis is caused by bacteria found in dental plaque, where bacteria levels can reach up to more than $10^{11}$ microorganisms per mg of dental plaque, and there are 10 identified species are pathogenic in periodontitis disease, such as gram-negative rods. Some gram-negative bacteria that is widely available in periodontitis is *Actinobacillus actinomycetemcomitans*, *Prophyromonas gingivalis*, and *Bacteroides forsythus*.

Factors that cause periodontal disease can be divided into two factors, namely local and systemic factors. Local factors that are a cause of the environment around the teeth, whereas systemic factors associated with metabolism and general health. Bone destruction in periodontal disease is mainly caused by local factors that gingival inflammation and trauma from occlusion or a combination of both. Damage caused by gingival inflammation resulted in a reduction of alveolar bone height, while trauma from occlusion causes loss of alveolar bone on the side of the root surface.

Tissue response to the bacteria, physical and chemical stimuli can be aggravated by systemic disorders. Network required for the metabolism of materials such as hormones, vitamins, nutrients and oxygen. When the balance is disturbed material can result in severe local disturbance. Balance disorders can be a lack of materials needed by cells for healing.

Systemic factors include: High fever, vitamin deficiency, drugs or drug use, and hormonal. Many systemic diseases that manifest in the oral. The disease may worsen the situation of the oral cavity. Periodontal diseases are serious and aggressive periodontitis can also be seen occasionally in children and some diseases.
are signs of systemic disease. This leads to bone loss and migration of the junctional epithelium in the apical region, thus forming a periodontal pocket. In a recent article stated, that periodontitis may affect host susceptibility to systemic disease in three ways: by shared risk factors, by subgingival biofilms acting as reservoirs of gram-negative bacteria, and through the periodontium acting as a reservoir of inflammatory mediators.

**Hematologic Disorders**

Hematology is the branch of medicine that studies the blood, blood-forming organs and tissues limforetkuler and disorders arising therefrom. Disturbances in the blood can cause abnormalities in the blood and disorder can be acquired or congenital. Iron deficiency (anemia) is usually unknown and can accompany other forms of anemia, such as β-thalassemia that can appear at the beginning of the birth. Sudden onset of anemia is rare in children, but is a continuation of the blood loss, hemolysis, acute leukemia, and bone marrow aplasia. Hematologic disorders in children in general, namely anemia, and leukemia thallasemia.

Thalassemia is a blood disorder because there is no or lack of hemoglobin chains are complex, which is characterized by a decrease in the speed of synthesis or production capability of one or more globin chains α- or β-, or other globin chains. As a result, the type of thalassemia occurs according to the globin chains that disrupted production, as shown below.

a. Thalassemia- α, occurs due to reduced (partial deficiency) (thalassemia- α+) or not produced at all (total deficiency) (thalassemia- α0) globin- α production chain.

b. Thalassemia- β, occurs due to reduced β chain globin- (thalassemia- β+) or not produced at all globin- chain β (β thalassemia- β0).

c. Thalassemia- δβ, occurs due to reduced or not produced two δ-chain and β-chain. The same thing happened to thalassemia- γδβ, and thalassemia- αβ.

Leukemia is a cancer of a type of white blood cells in the bone marrow, which causes the proliferation of a type of white blood cells to get rid of other cell types, which means that the abnormal cancer cells proliferate uncontrollably, a group of cells produce abnormal children. These cells inhibit all other blood cells in the bone marrow to develop normally, so they accumulate in the bone marrow. In the end, leukemic cells take over the bone marrow, resulting in lower levels of nonleukemik cells in the blood which are the cause of many common symptoms of leukemia. Leukemia is described as acute or chronic, depending on whether or not the appearance and how fast differentiation of cancer cells is concerned. Acute leukemia cells with poorly differentiated, whereas chronic leukemia cells are usually well differentiated.

*Acute Lymphoblastic Leukemia* (ALL) is a malignant disease that is most common in children, affecting about 475 per 100,000 people around the world, with
the highest age between 2-6 years. It accounts for 80% of all cases of leukemia in children 33.

Hematological disorders caused by abnormalities of quantitative, qualitative elements of the blood, circulating proteins, or vascular wall, drop in the platelet count or platelet dysfunction, or lack of coagulation factors (eg, thrombocytopenia and coagulation factor deficiencies in disseminated intravascular coagulation) 10,32. In children, a lot of bleeding disorders occur due to background genes 32.

Dental implications of thalassemia is jaw malformations. This is caused by excessive growth of the maxilla and zigomatikum. Thalassemia patient care is a routine blood transfusion. Blood transfusions can cause discoloration of the gingiva (hemosiderosis) due to the accumulation of iron. Treatment in patients with thalassemia should be sufficient, with a dentist or specialist pediatric hematology before dental treatment 10.

Oral manifestations in patients with leukemia may include pallor of the gingiva, gingival bleeding spontaneously, lymphadenopathy, gingival hyperplasia or atrophy, mucositis, infections (viral, bacterial or fungal), the presence of caries, the occurrence of xerostomia, dermatitis, and trismus 4,31. In patients with acute leukemia, oral manifestations are not much different from leukemia patients in general, which may include swelling of the gingiva, oral ulceration, spontaneous gingival bleeding, pale mucous area, herpes infection and candidiasis 32,33.

**Epidemiology of Periodontal Diseases in Children.**

There are reports of epidemiological studies on periodontitis of various nations in the world 20. New epidemiological data, on periodontal status in the year 2009-2010 from the National Health and Nutrition Survey (National Health and Nutrition Examination Survey / NHANES) which was written in the Journal of Dental Research in the USA by Papapanou 21, in a recent publication, showed a total prevalence of periodontitis in children in 2009 & 2010 19 which is from the state of mild, moderate, and severe was 47.2% 21.

In contrast to the prevalence and risk of periodontal disease in the Islamic Republic of Iran Tehran students quoted from research Hugar SM, et al. 20th, the periodontal health of 867 students aged 15-19 years results showed that 88.7% of the teenage years are very risky on the incidence of periodontal disease 20.

Epidemiological studies of periodontal disease in Jordan by Hugar et al. 20th, just explain the prevalence of gingival disease at the age of 6-7 years. The results of this study indicate that gingivitis in children aged 6-7 years in Jordan in general is 69%, but in most cases it is mild. The results of this study is almost similar to previous research that has been conducted in several countries and it is higher than in some other countries, and there are also 10 studies that discuss the prevalence of gingivitis in children aged 5-7 years and give different results, namely 9% -85% 21.

A study conducted by Moller of Ayesh HSD 21 research citations, assessing gingivitis in children Iceland and showed, that 23% of children aged 6 years have
gingivitis, while the results of other studies using the Russell index found that 75% of children aged 5-9 years with mild gingivitis and relatively wide variation in the real prevalence between different samples or associated with a variety of methods used to assess gingivitis. The prevalence of gingivitis increased from 3-5 years of age until puberty, and this increase is caused by changes in the population of microorganisms of the oral cavity.

While the distribution of periodontal disease sites in India by Papanou, in men and women produce 68% of men have a higher periodontal disease compared with only 32% of women.

METHOD

Type of research is observational research is to see and observe the condition of the periodontal tissues of children who become the object of research. The data is taken based on direct observation of oral pediatric patients with systemic disease in the hospital. Wahidin Sudirohusodo Makassar, use the diagnostic tool to probe measurement of periodontal disease.

The study design used was a cross-sectional approach is to observe the research object only once within a certain time.

This study was conducted in March-June 2013 Location research will be conducted in the pediatric ward inpatient unit Lontara 4, and space poly outpatient children, RS. Wahidin Sudirohusodo Makassar.

The study population was all patients who take children, either outpatients or inpatients who had leukemia and thalassemia in the hospital. Wahidin Sudirohusodo Makassar. Furthermore, a sample of children who were patients aged 5-15 years. The sample size obtained using the nomogram table harry king.

The samples in this study were drawn from the entire population by using accidental sampling method, the sampled population was inpatients and outpatients (leukemia, thalassemia) at the time of the study.

To facilitate the assessment of the use of pocket depth measurements using CPITN index. The patient's mouth is divided into six sektan, namely sektan upper right, upper anterior sektan, sektan upper left, lower left sektan, sektan lower anterior, and sektan bottom right, as shown in Table 1 below.
Table 1. Sektan On examination CPITN

<table>
<thead>
<tr>
<th>Sektan 1</th>
<th>Sektan 2</th>
<th>Sektan 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 6 5 4</td>
<td>3 2 1 1</td>
<td>2 3 4 5 6 7</td>
</tr>
<tr>
<td>7 6 5 4</td>
<td>3 2 1 1</td>
<td>2 3 4 5 6 7</td>
</tr>
</tbody>
</table>


A sektan can be checked if there are at least 2 teeth and is not an indication for revocation. If on the sektan there is only one tooth, the tooth is inserted into sektan next. In sektan are not toothed, not given a score. Assessment for the sektan is the worst state (highest score).

Teeth should be checked on an index that depends CPITN assessment of the age of the individual. There are three age groups for these measurements, the group aged 20 years or older, the age group 16 to 19 years, and the group aged less than 15 years. Determination of the index teeth are examined along with age group can be seen in Table 2 below.

Table 2. Teeth Age Group and Its Possible index scores were checked and were obtained

<table>
<thead>
<tr>
<th>Age</th>
<th>Teeth Index</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 years and over</td>
<td>7 6 1 1 6 7 6 1 1 6 7</td>
<td>0,1,2,3,4</td>
</tr>
<tr>
<td>19 and under</td>
<td>6 1 1 6</td>
<td>0,1,2,3,4</td>
</tr>
<tr>
<td>15 years and under</td>
<td>6 1 1 6</td>
<td>0,1,2</td>
</tr>
</tbody>
</table>


Associated with the index tooth and possible scores obtained on CPITN measurement, there are several things that must be considered, namely:

- If one molar and incisor teeth there, no need for the replacement tooth.
- If there is a sektan index teeth, all teeth present in the sektan examined and assessed, take the worst, that which has the highest score.
- For ages 19 and under, no need for a dental examination M2 to avoid false pockets.
- For ages 15 years and under the recording is done only if there is bleeding and tartar alone.
- If there is no index tooth or tooth replacement, such sektan marked x.

Once the index selected teeth, each tooth on probing is done by moving the probe around the tooth to assess at least six points around the teeth, namely: mesiofasicial, midfasicial, distofacic. Also similar place on the lingual or palatal
aspect. The most serious findings recorded as the score sektan. Code³ scores are recorded as follows:

Score 0: in the deepest pocket in a sektan, colored areas on the probe still looks full. Healthy gingival bleeding on probing did not show. Not found calculus. In these individuals are not required special care, preventive programs continue.

Score 1: Area full color still visible in the deepest groove on a sektan, but found no calculus was found bleeding after probing light. Individuals such as these require proper oral hygiene instructions to the actions that can clean and subgingival plaque disupa.

Score 2: Area full color still visible in the deepest groove on a sektan, can be found bleeding after probing, and supra-or subgingival calculus was found. Treatments include scaling to remove plaque and calculus supra and subgingival, and oral hygiene instruction.

Score 3: Areas colored in the probe entered partially into the pocket. This suggests a shallow pocket with a depth of more than 3.5 mm but less than 5.5 mm. Necessary treatment to remove subgingival calculus with a more comprehensive oral hygiene instruction.

Score 4: Areas colored in the probe enter everything into the pocket, showed pocket depth is more than 5.5 mm. Required a more complex periodontal treatment, includes a thorough periodontal examination, records or charts on a periodontal chart and plan perawtan appropriate for each case.

The rate of periodontal tissue conditions for each sektan can be seen in Table 3.

<table>
<thead>
<tr>
<th>Value / Score</th>
<th>Network conditions Periodontal</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Healthy</td>
</tr>
<tr>
<td>1</td>
<td>Bleeding of the gums</td>
</tr>
<tr>
<td>2</td>
<td>There subgingival tartar</td>
</tr>
<tr>
<td>3</td>
<td>Shallow pockets (3.5-5.5 mm)</td>
</tr>
<tr>
<td>4</td>
<td>Deep pockets (greater than 5.5 mm)</td>
</tr>
</tbody>
</table>


This study to obtain the primary data in the form of tables and data processing using SPSS 16.0 (Statistical Package for the Social Sciences 16.0).

RESULTS

The study took place from the date of 6 March to 4 June 2013, the study sample was 26 respondents with sampling methods accidental sampling. Obtained
pediatric patients suffering from leukemia were 18 patients (69.2%), and pediatric patients with thalassemia 8 patients (30.8%).

**Leukemia**

Based on the research results of the patient's age characteristics of children with leukemia as follows:

**Table 4.** Frequency Distribution of Child Patients Leukemia Disease Patients According to Age in ES, Wahidin Sudirohusodo Makassar in 2013

<table>
<thead>
<tr>
<th>No.</th>
<th>Age</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5-9</td>
<td>10</td>
<td>55.5%</td>
</tr>
<tr>
<td>2</td>
<td>12-14</td>
<td>7</td>
<td>38.9%</td>
</tr>
<tr>
<td></td>
<td>&gt; 14</td>
<td>1</td>
<td>5.6%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>18</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Source: Primary Data, 2013*

Table 4 shows that of the 18 children penderitaa leukemia, most patients are children with leukemia is 5-9 years old, 10 patients (55.5%), while 12-14 year olds were 7 patients (38.9%), and children aged> 14 years by 1 patient (5.6%).

**Table 5.** Frequency Distribution of Child Patients with Leukemia Patients by Sex in the hospital, Wahidin Sudirohusodo Makassar in 2013

<table>
<thead>
<tr>
<th>No.</th>
<th>Sex</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Women</td>
<td>7</td>
<td>38.9%</td>
</tr>
<tr>
<td>2</td>
<td>Male</td>
<td>11</td>
<td>61.1%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>18</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Source: Primary Data, 2013*

Table 5 shows the frequency distribution of children with leukemia by sex there is more in males as many as 11 patients (61.1%), and women were 7 patients (38.9%).

**Table 6.** Frequency Distribution of Patients According to the Children's Leukemia Patients CPITN scores in RS, Wahidin Sudirohusodo Makassar in 2013

<table>
<thead>
<tr>
<th>No.</th>
<th>CPITN scores</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>2</td>
<td>11.1%</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>6</td>
<td>33.3%</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>10</td>
<td>55.6%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>18</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Source: Primary Data, 2013*

Table 6 describes the distribution of 18 children with leukemia according to CPITN scores. In children with leukemia who received a score of 2 more that as many as 10
patients (55.6%), a score of 1 as 6 patients (33.3%), and a score of 0 were 2 patients (11.1%).

**Thalassemia**

Based on the results obtained the following results:

**Table 7.** Frequency Distribution of Patients According to Age Children Thalassemia Patients in the hospital. Wahidin Sudirohusodo Makassar in 2013

<table>
<thead>
<tr>
<th>No.</th>
<th>Age</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&lt;8</td>
<td>1</td>
<td>12.5%</td>
</tr>
<tr>
<td>2</td>
<td>8-10</td>
<td>4</td>
<td>50%</td>
</tr>
<tr>
<td>3</td>
<td>11-14</td>
<td>3</td>
<td>37.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>8</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Source: Primary Data 2013*

Table 7 shows that of the 8 children with thalassemia patients found that children aged 8-10 more as many as 4 patients (50%), and fewer at age <8 years as many as 1 patients (12.5%).

**Table 8.** Frequency Distribution of Child Patients with Thalassemia Patients by Sex in the hospital. Wahidin Sudirohusodo Makassar in 2013

<table>
<thead>
<tr>
<th>No.</th>
<th>Sex</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Women</td>
<td>4</td>
<td>50%</td>
</tr>
<tr>
<td>2</td>
<td>Male</td>
<td>4</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>8</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Source: Primary Data, 2013.*

Table 8 shows the distribution of 8 children with thalassemia by sex. There are the same number of children with thalassemia many anatara sex men and women respectively were 4 patients (50%).


<table>
<thead>
<tr>
<th>No.</th>
<th>CPITN scores</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>1</td>
<td>12.5%</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>6</td>
<td>75%</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>1</td>
<td>12.5%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>8</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Primary Data, 2013.

Table 9 describes the distribution of 8 children with thalassemia number of patients according to the acquisition of CPITN scores. In children with thalassemia who obtained a score of 1 is much more as many as 6 patients (75%), and a score of 0 and 2 in 1 patient (12.5%).

DISCUSSION

This research was conducted by means of primary data collection for children with leukemia and thalassemia. When viewed in general, it is found that pediatric patients suffering from leukemia more as many as 18 patients (69.2%), and the least amount of children suffering from thalassemia patients 8 patients (30.8%).

Of the characteristics of a child with leukemia showed that of 18 children with leukemia, most patients are children with leukemia is 5-9 years old, 10 patients (55.5%), while 12-14 year olds were 7 patients (38, 9%), and children aged> 14 years by 1 patient (5.6%). Of the characteristics of children who suffer from thalassemia showed that of 8 children with thalassemia patients found that children aged 8-10 more as many as 4 patient (50%), and fewer at age <8 years as many as 1 patients (12.5%)

This proves that in the age of adolescence, pediatric patients are at risk of periodontal disease. In accordance with research on the prevalence and risk of periodontal disease in students of Tehran Islamic Republic of Iran by Hugar SM, et al. about periodontal health of 867 students aged 15-19 years the results showed that 88.7% of the teenage years are very risky to the onset of periodontal disease. Whereas an epidemiological study of periodontal disease in Jordan by Hugar et al. explained that the prevalence of gingival disease at the age of 6-7 years. The results of this study indicate that gingivitis in children aged 6-7 years in Jordan in general is 69%, but in most cases it is mild, and there are also 10 studies that discuss the prevalence of gingivitis in children aged 5-7 years and give different results, namely 9% -85% as well as a study conducted by Moller of Ayesh HSD research citations, assessing gingivitis in children Iceland and showed 23% of children aged 6 years have gingivitis, while the results of other studies Russell uses the index found that 75% of children aged 5-9 years with mild gingivitis. The prevalence of gingivitis increased from 3-5 years of age until puberty, and this increase is caused by changes in the population of microorganisms of the oral cavity.
Of the characteristics of a child with leukemia by sex, there is more in males as many as 11 patients (61.1%), and women were 7 patients (38.9%). Of the characteristics of children who suffer from thalassemia showed a lot of the same number of children with thalassemia sex men and women respectively were 4 patients (50%).

This is consistent with the distribution of periodontal disease sites in India by Papanou in men and women, resulting in 68% of men have a higher periodontal disease compared with only 32% of women. In the same study, the prevalence of the presence of supragingival and subgingival calculus, nearly 50% of men and women simply indicate the presence of plaque. This is due to the presence of plaque. Both sexes showed higher than supragingival calculus subgingival calculus in all age groups, and the results of other studies indicate that boys have a higher prevalence of periodontal disease than girls.

Distribution of pediatric patients with leukemia based on CPITN scores earn a score of 2, 10 patients (55.6%), a score of 1 as 6 patients (33.3%), and a score of 0 were 2 patients (11.1%). For CPITN scores in children with thalassemia scored 1 more as many as 6 patients (75%), and a score of 0 and 2 in 1 patient (12.5%).

In children with leukemia gives the highest score on the score 2 as many as 10 patients (55.6%) of 18 patients. This is evidenced from the presence of oral manifestations in children with acute leukemia who are not much different from leukemia patients in general, which is a swelling of the gingiva. Swelling or inflammation that may affect the structure of the software and hardware that supports the teeth. At first it may be gingivitis and the impact of the occurrence of periodontal disease, the bone can be lost and separated from its attachments to the teeth. This is why the more leukemia patients get a score of 2.

Different things found in children suffering from thalassemia, the highest score obtained on a score of 1, as many as 6 patients (75%) of 8 patients. This indicates systemic factors may influence the occurrence of periodontal disease.

CONCLUSION

From the study, it can be concluded that in children who have leukemia or thalassemia, indicating the level of periodontal disease is still high.

References