THE CHANGE IN SOME IMMUNITY PARAMETER AS A RESULT OF GINGIVITIS INFECTION IN SMOKING PATIENTS

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Abstract

In the current study collect 18 samples from smoking patient with gingivitis and 7 samples from healthy people as control (age 20-25 years) to study parasites which found in mouth spatially in gingivitis and affected on IL-2 and IL-4, IgA and IgG we found parasite Entamoeba gingivalis and Trichomonas tenax. 10 samples have Trichomonas tenax and 8 samples have Entamoeba gingivalis. In other hand we found significant differences at 0. 05 in IL-2 (Mean =20.62727 infected with Trichomonas tenax, Mean =19.31818 infected with Entamoeba gingivalis, control =11.4), IL-4 (Mean =509.3636 infected with Trichomonas tenax, Mean =235.2727 infected with Entamoeba gingivalis, control=7), IgA (Mean =264.50 infected with Trichomonas tenax, Mean=243.50 infected with Entamoeba gingivalis, control = 7) and IgG (Mean =975.00 infected with Trichomonas tenax, Mean = 1024.00 infected with Entamoeba gingivalis, control = 7) which mean this parasitical infection increase periodontitis additional to smoking. Gingivitis may happened by parasites not by bacteria we found IgG level had been decreased in while IgA, IL-2 and IL-4 levels were increased in serum during infection with parasite.

Key words: Entamoeba gingivalis, Trichomonas tenax, IL-4 , IL-2, IgA and IgG.

Introduction

The mouth is the first member affected by smoking; especially that it is directly exposed to the chemical component of the cigar and the component of the tobacco. The affected tissues are those thin, laminated tissues of the tongue, the roof of the mouth, the floor, the cheeks, gums and lips, as well as the teeth (Karasneh and et al., 2017).

The consequences of smoking are tentative and troublesome and can be summed in the following: Oral cancer, surrounding tissues, chronic ulcers and microbial infections (bacteria, parasite & fungi), chronic gum disease, which is a major cause of tooth loss, decreased taste and smell sensation and lack of salivation rate, discoloration and change of color of teeth and tongue, the emission of odors odious from the mouth, lack of success rate of some dental treatments such as dental implants and evaluation and the possibility of complications such as osteomyelitis when the tooth is removed (Jasim et al., 2016).

Gingivitis, sometimes called gum disease or periodontal disease, describes cases of bacterial buildup in the oral cavity, which in the end, if untreated, can lead to loss of teeth, as a result of damage to the layer that encapsulates the teeth (Jabuk et al., 2015).

The gingivitis cause by parasite infection the parasite such as Entamoeba gingivalis and Trichomonas tenax was responsible for oral infection. Trichomonas tenax is an anaerobic parasite contaminates oral depression of human. Number of studies demonstrates the connection between T. tenax and unending periodontitis (Hayawan et al., 1992). This parasite can Transmission through droplet spray and saliva Entamoeba gingivalis one of Entamoeba species (Hussien et al., 2017).

The aim of study was isolated and identification of parasite from periodontal smoking patients with gingivitis and study the changes of some immunological parameters as a result of microbial infection.

Material and Methods

(A) Sample collection

25 swap from periodontics and 25 blood sample were collected from smoking patient with gingivitis (age 20-25 years) these samples taken to detect parasite.

(B) Isolation and identification of parasite

To detect parasite used wet mount, normal saline and eosin stain then prepared slide and finely examined directly under microscope (Jabuk et al., 2015)

(C) Immunological Study

Serum samples were collected from patients with periodontitis & from healthy individual as a control samples according to, to test immunological parameters including (IL-2, IL-4, IgG and IgA) according to the manual procedure of lab scien compand (china). (Chi-Cheng Tsai et al., 2007)

(D) Statistical Analysis

Statistical analysis (mean ± standard deviation) was done depending on SPSS

Results and Discussions

The result show that Entamoeba gingivalis and Trichomonas tenax, were types of parasites detected in samples as table (Karasneh et al., 2017) show infected with E. gingivalis highly ratio when comparative infected with T. tenax. This result was different from another research which refers to highly infected with T. tenax more than E. gingivalis (Chi-Cheng Tsai et al., 2007) while were closed to another research (Mehri et al., 2016).

Table 1 : Number and ratio of positive samples parasites

<table>
<thead>
<tr>
<th>Parasites</th>
<th>No. of positive sample</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entamoeba gingivalis</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>Trichomonas tenax</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td>control</td>
<td>7</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>100</td>
</tr>
</tbody>
</table>
Entamoeba gingivalis is protozoan parasite that infects humans, and is opportunistic which need to another microorganism to has infection; in this study, we believes that’s smoking may be helped parasites and bacteria to infection; and determined some immunity parameters and comparison it with infection by Entamoeba histolytica and Trichomonas tenax because have be not found research for the same aim. We found IL-4 and IL-2 have be increased level in serum like another research which show increasing of IL-4 and IL-2 levels in serum because of infected with E. histolytic (Bansal et al., 2005). Similar the result obtain by (Chi-Cheng Tsai et al., 2007). Nonetheless, it is some way or another startling that inoculated CD8+ T cells could likewise secure. CD8+ cells are for the most part seen as middle people of insusceptible reactions against intracellular pathogens. Be that as it may, the wonder of cross-preparing, what's more, past work portraying an antigen-non-particular incitement of CD8 T cells by cytokines, for example, IL-2, IL-15 or IL-21 given provisional clarifications to how CD8 T cells may be enacted by E. histolytica antigens. Truth be told a past report demonstrated that PHA-invigorated CD8 T cells had coordinate amebicidal movement in vitro (Leippe, 1997), in this way it would hold any importance with perceive whether the CD8+ cells executed amebae by means of direct cytotoxicity or through enacting frill cells (eg. neutrophils and macrophages). In another study had been in Baghdad university show increased levels of IL-4 and IL-2 in infection with T. vaginalis like our results. (Shaker and Hussein, 2012) Table (2)

Table 2 : Show change of IL-2 and IL-4 in smoking patients

<table>
<thead>
<tr>
<th>Parameters</th>
<th>IL-2 Mean</th>
<th>IL-4 Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient with Trichomonas tenax (10)</td>
<td>20.62727</td>
<td>509.3636</td>
</tr>
<tr>
<td>Patient with Entamoeba gingivalis (8)</td>
<td>19.31818</td>
<td>235.2727</td>
</tr>
<tr>
<td>control (7)</td>
<td>11.4</td>
<td>14</td>
</tr>
</tbody>
</table>

Table 3 : Show change of IgA and IgG in smoking patients with gingivitis

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Groups</th>
<th>IgA Mean</th>
<th>IgG Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient with Trichomonas tenax (10)</td>
<td>264.50</td>
<td>975.00</td>
<td></td>
</tr>
<tr>
<td>Patient with Entamoeba gingivalis (8)</td>
<td>243.50</td>
<td>1024.00</td>
<td></td>
</tr>
<tr>
<td>Control group (7)</td>
<td>42</td>
<td>1250</td>
<td></td>
</tr>
</tbody>
</table>

Conclusions
Gingivitis is a non-destroyed disease infects around the teeth. Caused by parasites Trichomonas tenax and Entamoeba gingivalis and not necessary have by porphyromonas gingivitis bacteria.

References


