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RESEARCH ARTICLE

Incidence of *Tricomonas tenax* in Diseased Mouth

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Abstract

Objective: Is to report the incidence of *T. tenax* in relation to oral health, age, sex and residency.

Materials and methods: Two hundreds patients with diseased mouths were examined by wet mount preparation and Giemsa's stained methods for identification of *Trichomonas tenax*.

Results: Its frequency was 9% among the examined swabs. There were 50% infection rates for both males as well as females. The highest incidence (11.25%) was found among 21-40 years-old while the lowest (6.66%) in 41-60 years-old. There were no significant variations in relation to residency. The association between *T. tenax* infection and dental caries was noticed at a rate of 66.7%. In addition, different rates for *T. tenax* were observed among patients with some other oral diseases as bleeding gum, gingivitis and periodonitis.

Conclusion: This parasite should be considered as a potential etiological agent in diseased mouth, especially in individuals with poor oral hygiene.

Keywords

Incidence, Mouth diseases, *Trichomonas tenax*

Introduction

Trichomonas tenax is a non-pathogenic oral protozoan parasite of human being. It has a worldwide distribution and may be found in up to 26% of patients with dental caries or pyorrhea and in up to 11% of those healthy mouths [1]. There were studies that related to its incidence in patients with chronic periodontitis [2-4]. Transmission is through saliva, air droplet spray, and kissing or use of contaminated dishes and drinking water [1].

Several studies have reported its incidence in the world including Iraq (20%) [5,6], Iran, (20.7%) [3,7], Turkey (2.17%) [8], Egypt (19%) [9], Malaysia (32%) [10], Nigeria (35%) [11], Italy (40%) [12], Hungary (38.3%) [10] and France (35.5%) [13].

The aim of the study is to record the incidence of *T. tenax* in relation to oral health, age, sex and residency.

Patients and Methods

A sterile swab was rubbed around the surface of teeth for 200 patients with diseases mouth. Samples were collected during 3 months (June-August, 2022). This study was carried out at College of Dentistry, College of Medicine and private clinics, Basrah, Iraq. Informed consent has been obtained from all involved patients. The work has proved by the Ethical Committee of the College of Medicine, Basrah, Iraq (No. 2022-371). All patients provided informed consent. There were 100 males and 100 females. Their ages ranged between 3-60 years. People receiving anti-protozoan drugs were excluded from the study.

The collected samples were examined directly by wet mount preparation and Giemsa's stained methods [14].

Results

Trichomonas tenax was found in 18 (9.0%) patients with diseased mouths (Table 1). Its frequency (11.25%) was noticed in a substantial level among age group of 21-40 years (Table 1). There were equal incidence rates for both males and females. Furthermore, there was no significant variation as far as residency is concerned.

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Table 1: Incidence of *Trichomonas tenax* according to different variables.

Variable (years)	No. examined	No. (%) positive
Age:		
3-20	105	8 (7.6)
21-40	80	9 (11.25)
41-60	15	1 (6.66)
Sex:		
Male	100	9 (50)
Female	100	9 (50)
Residency:		
Urban	120	11 (9.16)
Rural	80	7 (8.75)
Total	200	18 (9.0)

Table 2: The association between *Trichomonas tenax* positivity and oral disorders.

Oral disorders	*Trichomonas tenax* No (%)
Dental caries	12 (66.7)
Bleeding gum	3 (16.7)
Gingivitis	2 (11.1)
Periodonititis	1 (5.5)
Total.	18 (100)

The association between *T. tenax* infection and dental caries was noticed at a rate of 66.7%. In addition, different rates for *T. tenax* were observed among patients with some other oral diseases as bleeding gum, gingivitis and periodonititis (Table 2).

Discussion

The peak of infection (11.25%) was detected in patients of 21-40 years of age. Similar findings with higher incidence rates have been reported elsewhere [5,9,15,16] but dissimilar with other study [17]. The prevalence of parasitic infection among population may be attributed to lack of health and cultural awareness, lack of attention to oral and dental hygiene, lack of adequate hygiene guidance, and the spread of bad habits such as the use of matchstick and other tooth cleaning products that lead to increased oral parasites.

However, the low incidence observed in this study can be due to a better degree of oral hygiene, teeth brushing and proper restorations of decayed teeth and periodontal problems. In addition, the decrease or absence of *T. tenax* in older people may be related to the unfavorable conditions for its existence for instance, in toothless mouths, or due to educational level factor to maintain better oral hygiene and dental care.

Both sexes showed an equal incidence rate for *T. tenax*. This result is in agreement with previous study at the same locality [5]. Other workers have stated a high incidence among males than females [9,17] while vice versa have reported a higher rates among females rather males [15,16]. The explanations for that are all related to the practice degree for oral health including teeth.

Present study hasn't shown significant effect of residence. Similarly, in Iran have not seen significant differences as far as residence is concerned [17]. Teeth brush is an excellent practice to get a healthy clean mouth and teeth to prevent suitable conditions for the growth and survival of *T. tenax* [9].

In conclusion, this parasite should be considered as a potential etiological agent in diseased mouth, especially in individuals with poor oral hygiene.

Author Contributions

N. K. Mahdi, diagnosis of the protozoan parasite and righting up. H. N. Kadhim, sampling and diagnosis of the oral diseases.

Declaration of Interests

The authors have no conflicts of interest to declare.

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