A STUDY ON GIARDIA LAMBLIA INFECTION AMONG PATIENTS ATTENDING PRIMARY HEALTH CARE CENTER IN NORTH OIL COMPANY,KIRKUK.

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Abstract :

The study was carried out on 300 patients attended primary heath care center in North Oil Company from 15th January to 15th August 2000, to show the prevalence of Giardia lamblia infection .General stool examination was done for each patient using direct smear method and haemoglobin concentration was measured using Sahli method. The age of each patient was recorded and weight and height were measured . It was found that the rate of G. lamblia infected pwsons was(25.33%) (26.59% in males and 23.62% in females). The distribution of G. lamblia was not related to the age of patient .In G. lamblia positive cases , other organisms were recorded, monillia sp. followed by Entamoeba histolytica , Trichomonas hominis, Hymenolepis nana , and both Enterobius vermicularis and Balantidium coli, while in G. lamblia negative cases, the organisms recorded were E. histolytica followed by monillia sp., T. hominis, E. vermicularis and H. nana respectively. The rate of associated organisms in G. lamblia positive cases was higher than negative cases.The haemoglobin concentration in positive cases was lower than negative ones. The age, weight and height of infected group did not vary significantly from uninfected group.

المستخلص

اجريت الدراسة على ٣٠٠ مريضٍ راجعوا مركز الرعاية الصحية الاولية في شركة نفط الشمال للفترة من (١٥ كانون الثاني الى (١٥) اب /٢٠٠٠) لبيان مدى انتشار طفيلي جياردیا لامبليا . اجري فحص البراز لكل مريض باستعمال الطريقة المباشرة وقيس تركيز الهيموغلوبين باستعمال طريقة سالي . سجل عمر ، ووزن وطول كل مريض . وجد ان انتشار طفيلي جياردیا لامبليا (٢٥,٣٣%) ، (٢٦,٥٩% في الذكور و ٢٣,٦٢% في الاناث) . وان انتشار طفيلي الجياردیا لامبليا لا علاقة له بعمر المريض في الحالات المصابة بطفيلي الجياردیا لامبليا سجلت الجراثيم التالية : الطوقيات ، يتبعها انتيميبا النسيج ، المشعرات البشرية ، الشريطية القزمية ، الدودة الدبوسية والقربيات القولونية . بينما في الحالات السالبة لطفيلي الجياردیا لامبليا الجراثيم التي سجلت كانت : انتيميبا النسيج ، يتبعها الطوقيات ، المشعرات البشرية ، الدودة الدبوسية والشريطية القزمية على التوالي . وان نسبة الجراثيم المصحوبة في الحالات المصابة بالجياردیا لامبليا كانت اعلى من الحالات الغير مصابة وان تركيز الهيموغلوبين في

+Received on 1/12/2000 - Accepted on: 26/5/2001
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الحالات المصابة كان اقل منه في الحالات السالبة .لم يختلف العمر والوزن والطول في الحالات الموجبة معنويا عن الحالات السالبة .

Introduction:

Giardia lamblia is an intestinal flagellate found in the duodenum and jejunum of human being. Infection may be asymptomatic, but in some it may lead to mucous diarrhoea, dehydration, dull epigastric pain and flatulence [1&2]. The diarrhoea in some cases may be steatorrheic with excess mucus and fat, but no blood. In children it may lead to chronic diarrhoea, malabsorption,wieght loss, asprue like syndrome and interference with absorption [3&4].

The infection is common in warm, moist climates particularly in children. The prevalence of infection is affected by the level of sanitation and socioeconomic factors [5].

This study was planned to show the prevalence of Giardia lamblia among attenders of primary health care center in North Oil Company in Kirkuk City.

Materials and Methods:

Fecal samples were collected from 3000 patients including 173 males and 127 females attending primary health care center in North Oil Company during 15th January to 15th August 2000.

Single stool sample was obtained from each patient in a tightly covered wide mouth plastic container. These were labeled with sample numbers, date and name of patient. The stool samples were examined by direct general stool method using physiological saline and lugol's iodine solution, in the 1st June hospital laboratory.

The haemoglobin concentration was estimated for each individual using Sahli method.

The weight of each patient was measured on a beam digital self-calibrated balance [6].

The height of each patient was mea sured on standing position, with bare foot and fixed to vertical rule and reading was taken to the nearest 0.5 cm [7].

The student t-test was done to show the significant difference between infected and uninfected groups.

Results and Discussion:

Examination of 300 fecal samples, showed positive results in 76 (25.33). Of thes (26.59%) were males and (23.62%)were females as shown in table 1.

Three hundred patients aging below one year old up to 60 years old, who attended primary health care center in North Oil Company, Kirkuk were studied for Giardia lamblia infection and relation of infection with haemoglobin concentration and age, weight and height of patients. This study remarks the high prevalence of G. lamblia among studied groups (25.33%). This reflects poor health care and poor hygienic condition . The rate of infection is higher than that reported in Arbil [8] who reports (10.9%) among different groups of population and which is higher than that in Al-Tameem of (11.45%) in Hayders study [9]. The differences might be due to different periods of study and different sample sizes.

The rate of infection in males was slightly higher than in females. This might be because to males are mostly outside their houses and are mostly exposed to faecally transmitted parasites. This is also reported in a study done among different localities of Al-Tameem governorate [9 & 10] In Arbil [11] and in Mosul [12 & 13] they did not find significant difference in the rate of infection between males and females .

The percentage of positive cases is distributed into six age groups, ranging from below one year old up to 60 years old, it is noticed that the percentage of positive cases was not related to the age of patients (table 2)

The rate of infection in this study was not related to age of patients, as the prevalence of infection varied among different age groups. This finding is not in agreement with study done by Haydar [9] who observed significant difference between the rate of infection and different age groups. He found the highest rate of infection among those below one year to 10 years, followed by those between 11-20 years and the lowest rate between 61-70 years of age. In Arbil , Kadir and Al-Barzanjy [11] and in Mousl Al-Abiady [14] also found highest rate was of infection wasamong those from below one year to 10 years of age .

Table (3) demonstrates that other organisms are associated with Giardia lamblia positive and negative cases .In G. lamblia positive cases, the highest rate of infection was monillia sp., followed by Entamoeba histolytica, Trichomonas hominis , Hymenolepis nana and both Enterobius vermicularis and Balantidium coli, while in Giardia negative cases , the highest rate of infection was due to E.histolytica followed by monillia sp., T.hominis, E. vermicularis and H.nana respectively.

The overall rate of organisms associated with G. lamblia positive cases (52.63%) was higher than negative ones (37.95%).

The associated organisms with Giardia lamblia (positive cases) were monillia, E.histolytica, T. hominis, H. nana, E. vermicularis and B. coli while the organisms among negative cases were E. histolytica, monillia, T. hominis, E. vermicularis and H. nana. The mechanism responsible for association of microorganisms, is not fully known [15]. However each infection may act as predisposing factor for the other one which can be able to established in the host [16]. The higher rate of associated organisms among Giardia lamblia infection leads to decrease the immunological status of host thus increasing the rate of other organisms in the patients.

Table (4), illustrates the comparison of haemoglobin concentration, age, weight and height between G. lamblia infected and uninfected groups. The concentration of haemoglobin in infected group was significantly lower ($p<0.05$) than that of control groups . The age, weight and height of infected and control groups did not differ significantly.

Although the haemoglobin concentration in infected group was lower than uninfected ones, infection did not lead to anemia, as the Hb concentration was within lower normal range [17]. The height and weight of patients did not vary significantly among infected and control groups. This reflects that G. lamblia infection was not so severe as to cause pathological conditions in patients. Similar finding was reported by Haydar [9] who reports that G. lamblia infected persons had lower Hb value than uninfected ones, he also found the weight and height of person was not affected by G. lamblia infection in his study among different groups of population in Al-Tameem governorate.

Table (1): The rate of Giardia lamblia infection according to sex.

Sex	No.Examined	No.Positive	Positive %

Male	**173**	**46**	**26.59**
Female	**127**	**30**	**23.62**
Total	**300**	**76**	**25.33**

Table (2): The rate of Giardia lamblia infection according to age..

Age/Year

Cases Number	**Below one year-10**	**11-20**	**21-30**	**31-40**	**41-50**	**51-60**
Examined	**78**	**128**	**24**	**25**	**35**	**10**
Positive	**19**	**27**	**7**	**8**	**12**	**3**
Positive %	**24.36**	**21.09**	**29.16**	**32**	**34.28**	**30**

Table (3): Microorganisms associated with Giardia lamblia positive cases (76) and negative (224) cases.

Organisms	**Giardia positive cases**		**Giardia negative cases**	
	Number	**%**	**Number**	**%**
E.histolytica	**11**	**14.47**	**35**	**15.62**
Monillia sp.	**19**	**25.0**	**27**	**12.05**
T. hominis	**5**	**6.58**	**16**	**7.14**
H.nana	**3**	**3.95**	**2**	**0.89**
E. vermicularis	**1**	**1.31**	**5**	**2.23**
B.coli	**1**	**1.31**	**0**	**0**
Total	**40**	**52.63**	**85**	**37.95**

Table (4): Comparison of haemoglobin concentration, age, body weight and height between G. lamblia infected and uninfected patients.

Groups	**Hb-concentration gm/100 ml**	**Age (year)**	**Weight (kg)**	**Height (cm)**
Infected	**11.72 ± 2.04**	**22.32 ± 4.72**	**49.63 ± 7.04**	**146.27 ± 20.16**
Uninfected	**12.34 ± 1.68**	**19.55 ± 14.68**	**45.28 ± 21.11**	**144.21 ± 18.06**
t-test(sig.)	**P<0.05**	**NS**	**NS**	**NS**

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