Indirect Imunofluorescent Antibody Test for Detecting Chlamydial Infection

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Abstract

A total of 243 serum samples were tested for the presence of Chlamydia antibodies by indirect immunofluorescent antibody test.Ninety nine females were suffering from abortions, 64 were infertile and other 80 were none aborted women. The incidence of Chlamydia were (15%, 9.4%) and (3.8%) in abortion, infertile and non aborted group, respectively. The results also showed a difference in prevalence rate between the age groups. The highest incidence was found in the age group 20-39 years. Levels of immunolobulines (IgG, IgM) were also determined to identify a high positive titer of these chosen samples.

Introduction

Chlamydia was first observed in 1907 when intracytoplasmic inclusion was detected in conjunctival scaping of neonates (1). The pathogem is obligating intracellular with characteristics of development cycle which alternate between two forms. The elementary bodies which are the infections from of organism and the reticulate bodies which are the replicative form (2). The pathogen is divided into three species *ch. trachomatis, ch. pneumonia* and *ch. psittaci* (3). They include agents of human disorders such as trachoma, inclusion conjunctivitis, non gonococcul urethritis, cervicitis and lymphogranuloma (4).

Materials and Methods

The present study was extended from October 2001 to March 2002, during this period a total of 273 females were included in this work.

All subjects were interviewed and a detailed questionnaire was completed for each individual. All samples were selected from Public Health Laboratory/ Baghdad.

Materials

Chlamydia elementary bodies (Biomeriux conjugate (goats)) [antihuman IgG, antihuman IgM], BPS PH=7.7, Evans blue [BDH (England)], glycerol, acetone.The procedure of IFAT accomplished according to Khater etal, 1992(5).Each smear was examined under a fluorescent microscope with 40x objective. Chlamydial infection was reported positive result by counting at least 10 morphologically fluorescing is seen on the entire smear to avoid false-positive (6). The sera with titer of $\geq$ 1:8 was considered positive for the presence of Chlamydia antibodies 5

Results

Table(1) shows that patients with age 20-39 years have a high risk of infection, out of 50% was positive in these age groups.

Table(2) shows the prevalence of Chlamydia infection detected by IFAT test. The rate of infection was (7.9%, 19.2%, 20%) in first, second, third abortions and above respectively.The prevalence rate of infection was (9.4%) in case of infertile women while it was 3.8% women with no history of abortion.

Table(3) shows a comparison between (IFAT IgG) antibodies titers in all case groups (abortion, infertility and no abortion).

$\leq$ 1:32 titer gives a high positive in all samples studied.

Table(4)shows a comparison between (IFAT IgM) antibodies titers in all case groups (abortion, infertility, and no abortion). The highest frequency of antibodies was also in $\leq$ 1:32.titers.

Statistical analysis of data: The data was analyzed by percentage.

Discussion

Although Chlamydia Spp is bacteria, they are obligate intracellular parasites. Cultures and other diagnostic tests for Chlamydia require

procedure much like those used in diagnostic virology laboratories rather than used in bacteriology and mycology laboratories (3).

IFAT test is more sensitive for measuring antichlamydial antibodies (3).

In this work, it appeared in this work that prevalence of infection in population associated with age of the women. The high rate of infection among (20-39) years, 50 were positive in this age groups. This can explain the sexual activity in this period (7).

In first, second, third and above cases of abortion, the prevalence rate was detected by IFAT (7.9%, 19.2%, 20%), respectively. Similar results were found by Witkin (8). While it was 9.4% in infertile women. This was higher than the result found in no abortion groups (3.8%).

Chlamydia infection represents one of the most common preventable causes of infertility in women (9) and (10).

The titer of IgG antibodies can be diagnostic when four fold titer rises are seen in acute and convalescent sera. Because of high prevalence of Chlamydia infection in some societies, there is a high background titer in this population (11).

It was found in this work that titer of $\geq$ 1:32 was higher than the other titer in case of IgG, IgM antibodies in all groups studied.

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Table(1) The incidence of Chlamydia against different age categories for all women studied

Age catcgories	*IFAT techniques		
	+ve (%)	-ve (%)	Total (%)
<20	10 41.6)	41 (18.0)	51 (20.9)
20-39	12 (50)	146 (66)	158 (65.1)
≥ 40	2 (8.4)	32 (14)	34 (14)
Total	24 (100)	219 (100)	243 (100)

*IFAT= indirect imunofluorescent antibodies test.

Table (2) The distribution of positive IFAT test in all groups (Abortion, infertile, no abortion)

Case groups	*IFAT positive(%)	IFAT negative(%)
Abortion n=99	15 (15)	84 (85)
First abortion n=38	3 (7.9)	35 (92.1)
Second abortion n=26	5 (19.2)	21 (80.2)
Third abortion and above n=35	7 (20)	28 (80)
Infertility n=64	6 (9.4)	58 (90.6)
No abortion n=80	3 (3.8)	77 (96.2)
Total n=243	24 (9.9)	219 (90.1)

*IFAT: indirect immunofluorescent antibody test

Table (3) The distribution of *IFAT-IgG antibodies titer in all groups (abortion, infertility, no abortion)

Titers	Abortion N=99%	Infertility N=64%	No abortion N=80%
≤ 32	7 (7)	4 (6.2)	3 (3.7)
64	2 (2)	1 (1.5)	0 (0)
128	1 (1)	2 (3.1)	0 (0)
256	1 (1)	0 (0)	0 (0)
512	3 (3)	0 (0)	0 (0)
1024	0 (0)	0 (0)	0 (0)

*IFAT-IgG:- Indirect immunofluorescent antibody IgG.

Table (4)The distribution of *IFAT-IgM antibodies titer in all groups (abortion, infertility, no abortion) studied)

Titers	Abortion N=99%	Infertility N=64%	No abortion N=80%
≤32	5 (5)	2 (3.1)	2 (2.5)
64	1 (1)	1 (1.56)	0 (0)
128	1 (1)	1 (1.56)	0 (0)
256	1 (1)	0 (0)	0 (0)
512	0 (0)	0 (0)	0 (0)
1024	0 (0)	0 (0)	0 (0)

*IFAT-IgG:- Indirect immunofluorescent antibody IgG.

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فحص التألق المناعي غير المباشر لتشخيص الإصابة بالكلاميديا

امالي محمد جاسم القيسي
كلية التقنيات الطبية والصحية

الخلاصة

تم في هذه الدراسة فحص مجموع (243) عينة مصل للتحري عن وجود الاجسام المضادة للكلاميديا باستعمال فحص التألف المناعي غير المباشراذ كانت 99 امرأة تعاني من الاجهاضات و 64 اخريات كن نساء عقيمات و 80 امرأة لم يكن لديهن اي حالة اجهاض. ولقد كانت نسبة الاصابة بالكلاميديا هي (15% ،9.4% ،3.8%) على التوالي في حالة الاجهاض، العقم، عدم الاجهاض). كما لوحظ إن هناك تباين في نسبة الاصابة بين الفئات العمرية حيث ظهر ان اعلى نسبة اصابة كانت بين الفئة العمرية 39-20 سنة تم تحديد مستوى الكلوبيولينات المناعية IGg,Igm لتعيين تدرج ارتفاع الأضداد في مصول النساء موضوع الدراسة.