



## DETECTION THE INFECTION OF *CHLAMYDIA TRICHOMATIS* IN IRAQI WOMAN WITH LOWER TRACT INFECTION BY ELISA

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### ABSTRACT

A total of 70 women with symptoms suggestive of genital infection were evaluated by ELISA test. Thirty one women get positive results. The results showed that *Chlamydia Trichomatis* antibody was detected more in women aged between (21-30) years while women aged (31-40) years had negative results. Also the study showed that the distribution for the CT positive group was significantly less than that for the CT negative group ( $P=0.0001$  significant at  $P<0.01$ ). The incidence of positive CT infection are more in low social classes ( $P=0.0025$  significant at  $P<0.05$ ).

**KEY WORDS:** *Chlamydia Trichomatis*, Tract Infection, ELISA.

### INTRODUCTION

*Chlamydia trachomatis*, also known as Chlamydia, is an organism responsible for the most prevalent STD. It is one of four bacterial species in the genus *Chlamydia*<sup>[1]</sup>. Chlamydia is an obligate intracellular parasite. It is a gram-negative bacterium, ovoid in shape and non-motile and non-spore-forming. The elementary bodies of this bacteria act like spores when released into the host<sup>[2]</sup>. *Chlamydia trachomatis* inclusion bodies were first described in 1942, the agent was first cultured in the yolk sacs of eggs by Tang Fei-fan et al in 1957<sup>[3]</sup>. About 70% of infected women and men do not have symptoms. When symptoms do occur they begin after 5 to 28 days of exposure. Symptoms may include itching in the genital area, a bad smelling and thin vaginal discharge, burning with urination. Having trichomoniasis increases the risk of getting HIV infection. It also causes complications during pregnancy. Trichomoniasis disease is a sexually transmitted infection (STI). People who are infected can spread the disease even when symptoms are not present. Diagnosis is by finding the parasite in the vaginal fluid by using a microscope, by culturing the vagina or urine, or testing for the parasites DNA by RCR test. There were nearly 58 million cases of trichomoniasis in 2013. It occurs more often in women<sup>[4]</sup>. The genome has 26,000 genes, an additional ~35,000 unconfirmed genes, including thousands of parts of potential transposable elements. For more than 95% of cases, infection can be resolved after one dose of metronidazole<sup>[5]</sup>. Without treatment, trichomoniasis can persist for months to years in women, and is thought to improve without treatment in men<sup>[6]</sup>. Women living with HIV infection have better studies showed that there is a link between trichomoniasis and two serious sequelae. Data suggested that Trichomoniasis is associated with increased risk of infection with HIV<sup>[8]</sup>. This may occur either because Chlamydia-induced information results in recruitment of CD4 lymphocytes into genital tract enhancing the number of

HIV targets or because chlamydia-induced Inflammation stimulates HIV replication<sup>[9]</sup>. It may cause a woman to deliver a low-birth-weight or premature infant<sup>[10]</sup>. Trichomonas infection may be associated with co-infection with high-risk strains of HPV<sup>[11]</sup>. In males *T. vaginalis* infection may cause asymptomatic urethritis and prostatitis<sup>[12]</sup>. *Chlamydia trichomatis* in the cervix may be transmitted to the neonate passing through the infected birth canal, and an eye disease (inclusion conjunctivitis) of the newborn and characteristic chlamydial pneumonia of the infants may develop. Vaginal, Pharyngeal, and enteric infection are also recognized<sup>[9]</sup>. This study was done to detect the *Chlamydia trichomatis* antibody in Iraqi woman with lower genital tract infection.

### MATERIALS & METHODS

This study was performed on 70 women who attended the outpatient clinic at the Baghdad teaching hospital, medical city. Their ages ranged from 17-46 years, and they were all married. The patients were chosen according to their clinical symptoms as either chief complaints were either the presence of vaginal discharge or lower abdominal pain or their clinical symptoms revealed the presence of mucopurulent vaginal discharge and or cervical abnormalities which are ectopy or friability. Cervical mucous was defined as the presence of yellowish or greenish exudate on the end cervical swab.

3-5 ml of venous blood was obtained from each subject and the volume of blood was centrifuged and then serum was divided into aliquots and stored at (-20) °C for further processing. All sera were thawed once. ELISA test for serum human IgM antibodies to *Chlamydia trichomatis* was done.

### RESULTS & DISCUSSION

During 12 months, a total of 70 women with symptoms suggestive of genital infection was evaluated ELISA test.

Thirty one women get positive results. The relations of patient age with CT infection are shown in table 1 and the

relationship between CT infection and patient's social class is shown in table 2.

**TABLE 1:** Describe the relation of patient age with CT infection

Age distribution	Total	CT +ve	% of positive	CT-ve	% of negative
20 years	2	1	50	1	50
21-30	26	20	76.92	6	23.08
31-40	32	8	25	24	75
41-50	10	2	20	8	80

It was demonstrated that the CT antibody positive was detected more in women aged between (21-30) years while women aged (31-40) years had negative antibody showing

that the distribution for the CT positive group was significantly less than that for the CT negative group(P=0.0001 significant at P<0.01).

**TABLE 2:** The relationship between CT infection and patients' social class

Social class	Total no. of patient	CT +ve	% of positive	CT-ve	% of negative
High	15	3	20	12	80
Moderate	20	4	20	16	80
Low	35	24	68.57	11	31.43

Chiuar-seqare P value=0,002563036 significant at <0.0

\*CT +ve= Chlamydia trichomatis positive infection.

\* CT -ve= Chlamydia trichomatis negative infection.

It is observed from the table-2 that the incidence of positive CT infection are more in low social classes (P=0.0025 significant at P<0.05). This study results has shown agreement with other study done by Gun-munro and Richaredson<sup>[13]</sup>. But the makhija and Dhali<sup>[14]</sup>, showed that this result. The differences between the rate of infection in these studies may be attributed to the differences in the prevalence of *Chlamydia trachomatis* infection in various areas at different times of the year. Previous studies by Kiviat *et al.* and Parashari *et al.* <sup>[15]</sup>, confirmed that inflammatory cervical smears had a high degree of sensitivity and specificity and positive predictive value in relation to isolation of CT. Also Wilson *et al.* <sup>[16]</sup>, found that inflammatory changes are often associated with sexually acquired infection especially in younger women Using non-barrier methods of contraception. These previous studies concluded that women <35 years of age with an inflammatory cytological smear should be referred for further evaluation and testing for chlamydial infection. In the present study a population at increased risk for having a genital tract infection were examined chosen on basis of the presence of mucopurulent vaginal discharge, lower abdominal pain or both. In a similar fashion, Gaydos *et al.* <sup>[17]</sup>, had previously found that 92% of patients with genital infection had either ectopy, mucopus Neisseria gonorrhea, CT, *Trichomonas vaginalis* or herpes simplex virus alone in combination. Ther umsch <sup>[18]</sup>, disputed this this association and confirmed that in addition to the absence of evidence connecting pathogenic organism to the genital infection, the positive predictive value for CT infection was only 10%. In this study *Chamydia trachomatis* infection was significant greater in women aged less than 30 years than in older women. Riddell <sup>[19]</sup>, who found CT to be the most prevalent potentially serious of the genital tract infections, confirmed this observation and suggested that women with *chlamydia trachomatis* infection who are under 25 years should be referred to a department of genitourinary medicine because

of the risk of STD being present. A large group in this study was predominantly from low social classes and urban area as found also by Ryan *et al.* <sup>[20]</sup>, who reported an increased detection of CT infection in the lower socioeconomic group.

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