The Frequency Of Chlamydial Urethritis Among A Group Of Iraqi Male Patients

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Abstract

Background & Objective: The most important and potentially dangerous pathogen involved in non-gonococcal urethritis is *Chlamydia trachomatis*, so this study is conducted to evaluate the frequency of chlamydial urethritis among group of Iraqi male patients.

Methods: The study design is a descriptive cross sectional study, including fifty two male patients complaining from urethral discharge, they were seen in the department of Dermatology and Venereology at Baghdad Teaching Hospital .Their ages ranged from 16-49 years (mean±SD 29.28Y±8.5).They were investigated using enzyme linked fluorescent assay to a direct urethral swabs for detection of chlamydial antigen.

Results: Twenty one (40.38%) male patients were chlamydial antigen positive. Six of them (11.5%) had mixed infection (chlamydial and gonococcal urethritis).Chlamydial urethritis were most frequent at the third decade of life, those constitute of eight Patients (15.38%). Urethral discharge and dysuria were the most frequent symptoms which were noticed in all patients, frequency of micturation were seen in thirteen patients. Twenty patients were heterosexual and only one was homosexual; eight patients were practicing sex with single partner, the remainder practiced sex with multiple partners.

Conclusion: Chlamydia is one of the common causes of urethritis among sexually active Iraqi male patients, enzyme linked fluorescent assay technique is simple reliable test in the diagnosis of this disease.

Key words: Iraqi, chlamydial, urethritis.

Introduction:

Non-gonococcal urethritis (NGU) is a disease of world wide distribution, it affects both men and women, and it's usually seen in sexually active age [1]. NGU clinically resemble gonococcal urethritis but is milder [2], with incubation period longer than that of gonorrhea, varying from 1 to 3 weeks and the onset of symptoms is more insidious; These symptoms include dysuria, a clear or white urethral discharge and occasionally frequency of micturation [3] diagnosis of NGU requires demonstration of urethritis and exclusion of infection with N. gonorrhea [4].The most important and potentially dangerous pathogen involved in NGU is *Clamydia trachomatis*, which can be blamed for 30% to 50% of NGU cases [5]; other possible causes include *Ureaplasma urealyticum, Mycoplasma genitalium,* and *Bacteroides ureolyticus* [3] . All these infections are acquired sexually; and in 20-30% of cases with acute urethritis, the cause can not be definitely determined [6].

Chlamydiae are obligate intracellular bacteria with a unique life cycle, whose extreme biosynthetic defects in intermediate metabolism and energy generation cause them to be absolutely dependant on a host cell to grow and replicate [7]. All Chlamydiae exhibit similar morphologic features, share a common group of antigens .The major chlamydial antigens are the major outer–membrane proteins (**MOMP**), the lipopolysaccharides (**LPS**), and the heat–shock proteins (**HSP**)[8] .

The nonculture methods used antigen detection, generally of Chlamydia lipopolysaccharides (**LPS**) or **(MOMP)**, as a means of detecting chlamydial elementary bodies (EBs) in genital specimens. The enzyme immuno-assay (**EIA)** detects the presence of genus specific **LPS** antigens extracted from EBs in the specimen. It's including Enzyme – Linked Immunosorbent Assay (ELISA) and Enzyme – Linked Fluorescent Assay (ELFA) techniques, which is capable of detection approximately 10^3 EBs [7].

This study was performed to asses the frequency of chlamydial urethritis among group of Iraqi male patients complaining from urethral discharge by using (ELFA) techniques.

Patients & Methods:

The target population involved in this study are males within their reproductive age's ranging from 16-49 years(mean ± S.D 29.28 y. ± 8.5) ,who attending the department of Dermatology and Venereology at Baghdad Teaching Hospital from April 2001 to April 2002 complaining from urethral discharge.

Research strategy was a descriptive cross sectional study, designed as such to identify the frequency of chlamydial urethritis among sexually

active male those who had single or multiple sex partners.

Demographic data such as age, occupations, marital status , number and type of sexual contact in the last four weeks ,also history of similar infections and other sexually transmitted disease where also included in this study.

A urethral swab (smear) was taken for both gram stain and for culture which inoculated into chocolate agar media; so *Nisseria gonorrhea* was identified by the typical colonial morphology and microscopic examination of gram stained smear, which was consider positive when intracellular gram negative diplococci detected.

All patients were investigated for the presence of chlamydial antigen with a **VIDAS** instrument, as an automated Enzyme Linked Fluorescent Assay (**ELFA**). Patients were instructed not to urinate for one hour prior to taken a urethral swabs; a small swab(special cotton swab) was inserted (1–2 cm) into the patients urethra, and rotated for 10 seconds to ensure it will touches all urethral surface before removal. The swab was placed in the transport tube (provided by the specimen collection kit) and the tube closed tightly, the tube was labeled with the patients identification numbers.

The assay processing was initiated as directed in the operative manual. All the remaining steps were executed automatically by the instrument. The assay was completed in approximately one hour. Once the assay was completed, the results were analyzed automatically by the computer.

The remainders of those patients who are not proofed to be infected by either chlamydia or gonorrhea were classified under the other causes of NGU.

Results:

Fifty two male patients were investigated for detection of *chlamydial* antigen, using enzyme linked fluorescent assay (ELFA) technique to a direct urethral swabs.

Using ELFA technique, twenty one patients (40.38%) were *Chlamydia* antigen positive. Six of them (11.5%) had mixed infection (*chlamydial* and *gonococcal* urethritis) (table 1). The incubation periods of positive chlamydial antigens patients were estimated to be ranged from 7 – 35 days (mean ± S.D 13.09 ± 7.9).

The *chlamydial* urethritis Patients were most frequently seen at the third decade of life, those constitute eight patients (15.38%). (table 1) Among the fifteen patients with *chlamydial* urethritis only, eight were married and seven were not (single), while those with mixed infection, two of them were married and the other four were single (table 2).

Table 1: Distribution of different causes of urethritis according to the age group.

Age groups	*Chlamydia*		Mixed		GC		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
10 – 19	4	30.76	2	15.38	3	23.07	4	30.76	13	100
20 – 29	6	30	2	10	7	35	5	25	20	100
30 – 39	4	30.76	2	15.38	6	46.15	1	7.69	13	100
40 – 49	1	16.66	-	-	1	16.66	4	66.66	6	100
Total	15	28.84	6	11.53	17	32.69	14	26.92	52	100

Mixed : mixed gonococcal and chlamydial urethritis.
Others : other causes of urethritis other than chlamydia and gonorrhea.
GC : gonococcal urethritis.

Table 2: Distribution of patient's marital status in relation to different causes of urethritis according to their age group

Age groups	Chlamydia		Mixed		GC		Others		Total	
	Married	Single	Married	Single	Married	Single	Married	Single	Married	Single
10 – 19	1 (7.69%)	3 (23.07%)	-	2 (15.38%)	-	3 (23.07%)	1 (7.69%)	3 28.07%	2 (15.38%)	11 (84.61%)
20 – 29	3 (15%)	3 (15%)	1 (5%)	1 (5%)	3 (15%)	4 (20%)	2 (10%)	3 (15%)	9 (15%)	11 (55%)
30 – 39	3 23.07%	1 (7.69%)	1 (7.69%)	1 (7.69%)	4 (30.76%)	2 (15.38%)	1 (7.69%)	-	9 (69.23%)	4 (30.76%)
40 – 49	1 16.66%	-	-	-	1 (16.66%)	-	3 (50%)	1 16.66%	5 83.3%	1 (16.66%)
Total	8 15.38%	7 13.46%	2 (3.84)	4 (7.69%)	8 (15.38%)	9 (17.3%)	7 (13.46%)	7 (13.46%)	25 (48.07%)	27 (51.92%)

Patients presenting symptoms and signs were also included in this study (table 3). Dysuria was the commonest presenting symptom which was noticed in all patients, followed by frequency of micturation (thirteen patients) (61.9%), and arthralgia (recent onset) of both knee joints in one patient (4.76%). On examination, inguinal lymphadenopathies were observed in five patients (23.8%), and three patients presented with low grade fever (14.2%).

Table 3: Distribution of patients according to signs and symptoms and types of urethritis

Symptoms & signs	Chlamydia		Mixed		GC		Others	
	No.	%	No.	%	No.	%	No.	%
Dysuria	15	100	6	100	17	100	9	64.2
Frequency	8	53.3	5	83.3	15	88.2	10	71.4
Pain and tenderness								
A. suprapubic	5	33.3	1	16.6	4	23.5	5	35.7
B. scrotal	2	13.3	1	16.6	4	23.5	3	21.4
C. at the shaft	2	13.3	1	16.6	2	11.7	2	14.2
Congestion of urethral meatus	3	20	3	50	9	52.9	2	14.2
Fever	3	20	-	-	4	23.5	3	21.4
Inguinal lymphadenopathy	5	33.3	-	-	3	17.6	3	21.4
Arthralgia	1	6.6	-	-	1	5.8	3	21.4
Total patients number	15		6		17		14	

The pattern of sexual behavior of these patients and associated complications were also included in this study (tables 4,5). Twenty patients (95.23%) were heterosexual and only one (4.76%) was homosexual. Eight patients were practicing sex with single well known partners, the remainder practiced sex with multiple (not well known) partners. Ten patients (47.6%) had history of recurrent similar infection (urethritis); one patient presented with pain and tenderness at the left side of the secrotum (epididymorchitis); another patient (4.76%) presented with urethral stricture, one patient was complaining from painful ejaculation with history of recurrent urethritis and per rectum examination is tender (prostatitis) .

Table 4: Distribution of patients according to the sexual behaviors and types of urethritis

Patients sexual behaviour	Chlamydia		Mixed		GC		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Heterosexual	15	100	5	83.3	13	76.4	14	100	47	90.3
Homosexual	-	-	1	16.6	4	23.5	-	-	5	9.6
Multiple partner	9	60	4	66.6	11	64.7	8	57.1	32	61.5
Single partner	6	40	2	33.3	6	35.2	6	42.8	20	38.4

Table 5: Distribution of patients according to complications and types of urethritis

Complications	Chlamydia		Mixed		GC		Others	
	No.	%	No.	%	No.	%	No.	%
Recurrent urethritis	7	46.6	3	50	7	41.1	8	57.1
Urethral stricture	1	6.6	-		1	5.8	1	7.1
Epididymo-orchitis	1	6.6	-		1	5.8	-	
Prostatitis	-		1	16.6	2	11.7	2	14.2
Total patient No.	15		6		17		14	

Discussion:

The antigen detection test ELFA (Vidas Chlamydia) can provide an accurate diagnosis of *C. trachomatis* infections in men by the analysis of urethral swabs.

Chlamydia is both treatable and easily cured when it is detected [9]. This study demonstrates the importance of screening Iraqi male patients with urethritis and history of sexual contact for *C. trachomatis* as an important cause of NGU.

Many works in different centers concerning the epidemiology of STD were done, but unfortunately few studies were focusing on *C. trachomatis* as an important cause of urethritis among sexually active Iraqi male patients, and to the best of our knowledge, this is the first work in Iraq

demonstrating the frequency of *C. trachomatis* among sexually active Iraqi males patients using a specific test ELFA (Vidas Chlamydia) to detect *Chlamydial* antigen from the patient's urethra.

The results of the present work showed that the frequency of *Chlamydial* urethritis among Iraqi male patients attending the Dermatology and Venereology department at Baghdad Teaching Hospital was (40.38%); (28.8%) with *Chlamydial* urethritis and (11.5%) had a mixed (*gonococcal* and *Chlamydial* urethritis) infections.

Our results are higher than that of Al-Delaimy [1], in which NGU in general was (18.5%) in males. Because his study was depend on the exclusion of *N.Gonorrhea* only from other causes, to the patients presented with urethritis; not by detection of *Chlamydia* antigens specifically, which is not that accurate method of diagnosis.

Our study also differ form that of Al-Yazachi [10], which reported 102 patients with NGU out of 202 patients with urethral discharge. Although *C. trachomatis* was not included as one of the important pathogen that causing NGU, may be due to the shortage of investigation facilities.

Our results also greatly differ from that of Maeda et al [11] and Erdogru et al [12] where both reports *C. trachomatis* (55.2%) and (68.2%) (28/41) respectively were responsible for NGU in men.

But our results are in agreement with the results of Chavez et al [13], who reported that the incidence of *C.trachomatis* infection in men (29.8%) diagnosed by ELFA technique (Vidas *Chlamydiae*); also coincide with Mckee et al [14] results in which (36%) are *C. trachomatis* positive. Comparing with studies done by Evans et al[15] and Charoenwatanachokchai et al [16] ,there results were (25%) in both white and black male and (27.3%) had *Chlamydial* urethritis respectively which are close to our results .

All patients included in this study were symptomatic and the main presenting symptoms were dysuria which differ from study by Zelin et al [17] who reported that, men with *Chlamydial* urethritis were significantly more likely than men with non- *Chlamydia* urethritis to be asymptomatic. Although Maeda et al [11], results are in coincidence with ours, where he found that the highest percentages of C. trachomatis infection were among symptomatic men.

Eckert et al [18], reported that the highest rate of infection (STD) due to *C. trachomatis* in both males and females were seen among those of age group less then sixteen years.

Other studies also by Orr et al [19], Bavastrelli et al [20], and Evans et al [15], have shown that young subjects and teenager's are risk group of acquisition of *C. trachomatis* genital infection due to the earlier commencement of intercourse. This is in contrary to our result which shows that the highest incidence of *C. trachomatis* infection was seen at the third decade of life, close to the result of Al-Delaemi [1], who reported that, the peak age of acquisition of (STD) for both men and women was ranged from 21-27 years, this probably due to late sexual awareness; Evans et al [15], reported that "Asian men commenced intercourse later then European". The present work shows that men with recurrent urethritis and those in contact with multiple sex partners had more liability to get *chlamydial* urethritis, this finding coincides with other study done by Chaves et al [13], and Bavastrelli et al [20], who reported that sex with more than one partner and contact with prostitute were a significant risk factor for the acquisition of *chlamydial* urethritis.

This study demonstrate the importance of screening sexually active male patient with urethritis for *C. trachomatis*, although *chlamydial* urethritis are not as common as gonococcal urethritis in symptomatic Iraqi male patients for whom a specific test for detection of *Chlamydia* was never done at the time those patients were examined (in the past) despite an empirical treatment with Doxocycline which is effective against *C. trachomatis* always prescribed.

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