JOURNAL OF PURE AND APPLIED MICROBIOLOGY, Dec. 2014. Vol. **8**(6), p. 4477-4480

Prevalence of *Chlamydia trachomatis* among Iranian Women, Tehran, Iran

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(Received: 06 April 2014; accepted: 19 August 2014)

Sexually transmitted infection (STIs) are a major global cause of acute lleness,infertility ,long term disability and death with sever medical psychological consequence for millions of men,women and infants.Meanwhile Chlamydia trachomatis which is a gram negative bacteria could places a heavy burden on women and neonatal health,consist of chronic pelvic pain, pelvic inflammatory disease ,ectopic pregnancy,infertility , infant pneomonia and neonatal ophtalmia.The world health organization (WHO) estimated that 90 million cases occur annually on a global basis and in young women the proportion infected ranges from 8-40%, with a median of about 15%. In Iran the information about prevalence of chlamydia trachomatis is rare, so having more information could help to prepare complete estatic about situation of infection and also could help to mother and children healthy. In this study we had 3 groups of women who reffered to gynecologist for genital problems, D&C or spontanous abortion .with dacron swab ,specimens were gathered and placed in 2sp medium for each paitent and rereservoir in -70c refrigerator for molecular detection. Consequently with 2 pairs of primers Nested PCR were done. Our result revealed that the preavalence of chlamydiat Trachomatis among 3 groups in order of was 35%,43%,43.8%,Mean of prevalence between 3 groups was: 40.6% , there is not significant difference between 3groups.

Key words: *Chlamydia trachomatis*,Genital infection,Prevalence.

Chlamydia trachomatis is a gram negative bacteria with a unique biphasic life cycle : Elemntry body which is transmissible form of the organism capable of extracellular survival attaches to a susceptible epithelial cell to initiate the cycle and replicative form of the organism[1]. In addition to occular trachoma, Chlamydia trachomatis serovar D&K can causes genital infections in male and female with different consequences , from an asympthomatic infections to symptomathic ectopic pregnancy or mucopurelent cervicitis, inflammatory disease (PID) in women or urethrities in males and pneomonia , neonatal ophtalmia in infant and children[2,3].According to the world health organization (WHO) in most countries Chlamydia trachomatis is the most common bacterial sexually transmitted infection worldwide[4,5]. The prevalence of Chlamydia trachomatis in the world is differ from one country to another ,according to WHO information most of data comes from countries like USA, Britain,Sweden,Norway and Denmark but data from developing and indeveloping countries are rare or poor, The prevalence of Chlamydia in

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women of developing countries like Asian or African countries is rare and spreding .

MATERIALS AND METHODS

Bacterial isolates

In the present descriptive study 200 paitents in 3 groups were enrolled: group 1 consisted of 100 women who refered to gynecologist at Imam Hossein hospital ,Tehran ,Iran for having vaginal discharge with bleeding.abdominal pain or disuria ..Group 2: 50 women with oligomenorea or hypermenorea having D&C in surgery room . group 3: 50 pregnant women who had spontaneous abortion in surgeryroom.For all specimen (a Dacron swab with enterance to endocervical canal and rotate it for 60 seconds were taken then the swabs were placed in 2sp (2-sucrose phosphate transport medium) and placed on ice then transfer to laboratory of molecular microbiology, faculty of medicine, shahid beheshti university of medical sciences ,Tehran,Iran. referegeratedat -70 c for next work.

DNA Extraction and nested PCR :DNA was extracted from bacteria by using DNA isolation columns (Bioneer Korea) according to the manufacturer's procedures. By designing of a pair of primers which amplfied a 5oo bp fragment of OMPA gene. Nested PCR were done ,with following protochole:

External Primers for PCR1:TGA ACC AAGCCT TAT GAT CCA C, TAG AGG CAT CCT TAG TTC CTG

Internal Primers for PCR2:TTG GTG TGA CGC TAT CAG CAT G,AGC ATA TTG GAA TGA AGC TCC

PCR1: Primer forward=0.5µl,primer revers: 0.5µl,DNAtemplate5 µl,Mastermix12 µl,H_2O 7 µl. **total volume=25 µl.**

PCR2:Primer forward=0.5µl,primer revers:0.5µl, DNAtemplate5 µl,Mastermix12 µl,H_2O 7 µl.
total volume=25 µl.

RESULTS

From 200 paitents in this study ,80 cases were positive for chlamydia trachomatis .In table 1 the prevalenceof Chlamydia trachomatis in 3 groups were shown:group 1 consist of 100women (35 number were positive =35%),group 2 consist of 50 women (21number were positive= 42%)and group 3 consist of 50women(22number were positive =44%). The mean of prevalence among 3groups is 40% and there are not a significant difference between 3 groups.The mean age of group 1 was 36.2,group 2 was 39.2 and group 3 was 27 year old.

Table 1. Prevalence of chlamydi Trachomatis among 3 groups of women:

	Positive result for PCR	Negative result for PCR	TOTAL
GROUP 1	N=35 F=35%	N=65 F=65%	100
GROUP2	N=21 F=42%	N=29 F=58%	50
GROUP3	N=22 F=44%	N=28 F=56%	50
			Pvalue=0.345 (α=0.05)

N=Number, F=Frequency
GROUP2 =paitients refer for D&C
GROUP 1 = paitients with cervicitis
GROUP3 = paitients with spontaneous generation

Table 2. The mean age of women among 3groups

	Mean age	Total number
Group 1	36.2	100
Group 2	39.2	50
Group 3	27	50

GROUP 1 = paitients with cervicitis
GROUP2 =paitients refer for D&C
GROUP3 = paitients with spontaneous generation

DISCUSSION

According to CDC information the prevalence of chlamydia trachomatis in American women from 1989 through 2008,were risen from 102.5 to 401.3 cases per 100,000 population[6,7]. In European women by information from ECDC was 203/100000population in 2010(5,8).In different countries of Asia there are different report of prevalence . In a recent study The prevalence of CT in south India was 10.5%in both male and female[9].and in men from Taiwan was 7.9% [10] and in female student with active sexuallbehaivour was 12.5% [11]. In Bangladesh the prevalence of bacteria in women with cervicitis was 21.6% and in asymptomatic women was 44.1%[12] another study in Bangladesh of sex worker women and sexually active women was 58% and 27%[13].

In Tehran ,Iran the prevalence of chlamydia trachomatis in women with cervicitis between 2003-2004 was 15.5%(14).with urine of pregnant women in east of Iran (sabzevar) the prevalence was 15.8%(15).with comparison of infertile women with fertile women the prevalence of chlamydia trachomatis was 29% and 19%.(16). Another study on pregnant women and their children the prevalence in women was 15.5% and their children with neonatal ophtamia was 11.7%.[17]). In zanjan Northwest of Iran women who reffered to gynycologist was 10.3% [18]and in north of Iran (Babol)was 14.6%[19]. Other study from women with sexually active behaivour age(15-50) the prevalence was 14.9%.[20].

In Our study with symptomatic women among 3 groups consist of women with bleeding ,abdominal pain ,vaginal discharge or reffering for D&C or spontaneous abortion determined the prevalence of bacteria in order was 35%,42%,44% which notice to high prevalence of chlamydia trachomatis in women., so it is important to pay attention of controlling programme on women health in order to prevent spreading and transmissing bacteria to their parteners or their infants and also wide spectrum of complications.

ACKNOWLEDGEMENTS

With special thanks to Dr Latif gachkar and Medical University of Shahid Beheshti for supporting this research .and also special thanks for personnels of Surgery room and gynycology section of Imam hossein hospital, Tehran,Iran.

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