Chlamydia Trachomatis Proportion on Urine and Endoservical Swabs in Non Specific Genital Infection with Polymerase Chain Reaction Method

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Abstract: Non-specific genital infection (NSGI) is a sexually transmitted infection such as inflammation in the urethra, rectum, or cervix caused by germs nonspecific. Causes of Chlamydia trachomatis most IGNS that approximately 30-50%. Center for diseases control and prevention recommend a type specimen for laboratory examination CT in women can be derived from the urine, endocervical swabs and vaginal swabs. Urine specimens procedure is easier and less invasive. **Objective:** To know the results of the urine specimen and endoservical swabs as a diagnostic specimen test on a non-specific genital infections caused by Chlamydia trachomatis. **Subject and method:** A cross-sectional study conducted in patients who had been diagnosed with non-specific cervicitis at the Outpatient Clinic Dermatology Venereology Dr. M. Djamil Hospital Padang. The total number of samples 39. Chlamydia trachomatis is checked by PCR. This study was conducted from June 2015 - April 2017. **Result:** The proportion of positive results on non-specific cervicitis caused by Chlamydia trachomatis with PCR were found both in urine specimens and endocervical swabs (2.5%), only on urine specimens (21%) and only on endocervical swabs (8%).**Conclusion:** The proportion of positive results in urine specimens of patients with non-specific genital infections caused by Chlamydia trachomatis was higher than endocervical swabs specimens.

1 INTRODUCTION

Non-specific genital infections (NSGI) are sexually transmitted infections (STIs) of inflammation in the urethra, rectum, or cervix caused by non-specific germs. The term NSGI began to be used in the UK since 1972, covering a range of non ur specific conditions of urethritis and cervicitis non specific in women (Lumintang, 2007).The causes of most Chlamydia trachomatis (CT) NSGI are about 30-50%, whereas 10-20% of cases are caused by Ureaplasma urealyticum and or Mycoplasma genitalium. (Handy P, 2010), (Horner 2014).

Clinical symptoms of NSGI caused by CT may be urethritis, cervicitis, endometritis, salpingitis, perihepatitis. The Center for Disease Control and Prevention (CDC) recommends that laboratory specimen type for CT in women may be from urine, endocervical swabs and vaginal swabs. In first catch urine (FCU) or first portion of urine as genital lavage and sample containing material from the urethra. (Centers for Disease Control and Prevention, 2010) (Haugland, 2010). The gold standard diagnostic tool for CT-induced IGNS detection is PCR. PCR examination method there are two conventional PCR and real time. (Fraga ,2008). In this study the authors use conventional PCR as a tool of examination. Deoxyribose nucleic acid (DNA) from CT can be found in the urine because of frequent ureter infections in NSGI caused by CT, so that PCR can detect CT on a urine specimen. (Chernesky, 2005).

The research aims to support the results of several studies that support the urine specimen can be used for NSGI examination caused by CT, such as Earlia N, et al. (Surabaya, 2010) reported PCR examination results in 22 non-specific genital infection patients, with positive results in 16 samples of urine specimens (72.7%) and 14 samples of endocervical smear (63.6%).[8] Blake DR, et al. (USA, 2008) obtained a comparison of test specimens for CT with DNA probe tests, obtained sensitivity of urine specimens and endocervical swabs having the same value: (91.7%).

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(Roberts, 2011). The aim of our study was to estimate the positive proportion of urine specimens and endoservical swabs on non-specific genital infections caused by Chlamydia trachomatis.

2 MATERIALS AND METHODS

This study is an observational analytic study with cross-sectional design. The study was conducted at the Division of Sexually Transmitted Infections of Outpatient Clinic Dermatology Venereology of Dr. M. Djamil Hospital Padang and Microbiology Laboratory Medical Faculty of Andalas University. Subjects were patients with a diagnosis non-specific genital infection patients of who came to Division of Sexually Transmitted Infections of Outpatient Clinic at the of Dr. M. Djamil Hospital Padang. The study was approved by the Ethics Committee of Medical Faculty of Andalas University Padang.

The number of samples is determined by the consecutive sampling method. The samples in this study were 39 who matched the inclusion and exclusion criteria. The study was conducted from January - February 2017.

3 RESULTS

Table. 1 show the highest age group of the study was the 26-35 years (43.6%). The level of education of patients has the same value for medium to low (48.7%). Most of patients as unemployement (51%), married status (62%), free sex (67%) and contraception IUD (67%).

Table 1.Demographic characteristic of cervicitis non spesific

Characteristic	f (n = 39)	%
Age		
17-25	4	10
26-35	17	44
36-45	13	33
46-55	3	8
56-65	1	3
Education		
Low	19	49
Medium	19	49
High	1	2
Occupation		
Work	19	49
Unemployement	20	51
Marital status		
Married	24	62
Divorce	15	38
Free sex		
Never	11	28
Ever	26	67
Type of Contraceptive		
Oral	12	31
IUD	26	67
Condom	1	2

Table 2. Show positive examination results of urine specimens with PCR in non-specific cervicitis caused by Chlamydia trachomatis were present (23%).

Table 2. Examination results of urine specimens with PCR in non-specific cervicitis caused by Chlamydia trachomatis.

***Chlamydia trachomatis* on urine specimens**	f	%
Positive	9	23
Negative	30	77
Total	39	100

Tabel 3. Show positive examination result of endoservic swabs with PCR in non-specific cervicitis caused by Chlamydia trachomatis were present (10%).

Table 3. Examination result of endoservic swabs with PCR in non-specific cervicitis caused by Chlamydia trachomatis.

Chlamydia trachomatis **On endoservic swabs**	F	%
Positive	4	10
Negative	35	90
Total	39	100

Table 4. Show positive results of examination on non-specific cervicitis caused by Chlamydia trachomatis with PCR were found both in urine specimens and endocervical swabs (2.5%), only on urine specimens (21%) and only on endocervical swabs (8%).

Table 4. Results of examination on non-specific cervicitis caused by Chlamydia trachomatis with PCR on urine specimens and endocervical swabs

Specimens Urine	Specimen Endocervic swabs	
	Positive	Negative
Positive	1	8
Negative	3	27

4 DISCUSSION

Based on age, this study found the age group 26-35 years suffered the most non-specific cervicitis followed by the second most with the age range 36-45 years. Chlamydia trachomatis infection is most common in young women, because in this age it is a productive age for sexual intercourse so the possibility of getting a sexually transmitted infection is higher and is often found in cervical ectopics. (Sirait, 2002)

In this study PCR examination results to detect Chlamydia trachomatis found positive results in 9 samples of urine specimen (23%) and 4 samples endocervic swabs (10%). This study has more positive results on urine specimens than endocervical swabs, as well as Earlies N (Surabaya, 2010) reported positive test results on urine specimens (72.7%) and endocervical swabs (63.6%) with conventional PCR Amplicor® kit.(Earlia,2010)

Mittal V (India, 2010) reported positive results examination on urine specimens with PCR (11.11%) in 10 patients from 90 total patients with genital infection. (Mittal,2010). This study had positive results on urine specimens (23%), which is higher than Mittal V (11.11%). The difference betwen this study is samples taken are those who have been diagnosed with non-specific cervicitis, whereas in the study Mittal V patients who entered into the inclusion criteria when suffering from genital infections only with genital discharge complaints.

Quinn TC, et al. (Georgia, 1996) reported positive results with PCR on urine and endocervical specimens (70%), urine specimens (18%) and endocervical specimens (12%). There are multiple study with positive results only on urine specimens or endocervical swabs specimens alone may reflect the finding that 10% to 20% of infected women may be infected only locally on the urethra or locally on endocervix alone without involvement from the other side. (Quinn, 1996).Different with this study found positive results in both of urine and endocervical specimens (2.5%), urine specimens (20%) and endocervical specimens (7.6%).

Initial infection of Chlamydia trachomatis may occur in the cervix or urethra. Complaints may include abnormal discharge and burning during urination. (Reza, 2015)There is possibility many of these studies initial infection of Chlamydia trachomatis in the urethra, so this factor that caused more Chlamydia trachomatis in the urine in this study because urine contains epithelial cells of urethra. Although most Chlamydia trachomatis infections occur in the cervix. (Wiesenfeld,1996).

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5 CONCLUSIONS

The proportion of positive results in urine specimens of patients with non-specific genital infections caused by Chlamydia trachomatis was higher than endocervical swabs specimens.

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