MICROBIOLOGY NEWSLETTER

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August 2013

Calgary Zone – Epidemiology of Genital *Chlamydia trachomatis* (CT) Infection in Women and Rationale for Restricted Testing in Those ≥ 35 Years of Age

Calgary Laboratory Services (CLS) currently performs simultaneous routine testing for both genital CT and *Neisseria gonorrhoeae* (GC) infection from urethral and endocervical swabs or urine from females using an automated nucleic acid amplification test called the APTIMA COMBO 2® Assay, which is run on the TIGRIS instrument (Hologic, Gen-Probe, San Diego, CA). This assay has a reported sensitivity and specificity of 94.2% and 97.6% respectively for both swabs and urine samples (http://www.gen-probe.com/products-services/aptima-combo).

CLS implemented a new policy in the Calgary Zone in March 2003 that restricted routine testing of genital samples for CT and GC infection in women ≥ 35 years of age. The Microbiology requisition was changed so that physicians had to provide a history for genital samples from women ≥ 35 years to be automatically tested as follows:

- **Symptoms**
- **At Risk**
- **Pregnant**

This newsletter outlined the rationale for implementing the age-restricted testing policy for women ≥ 35 years of age.

1) Who is at risk for acquiring genital CT infection?

Guidelines have been published by Health Canada that outline who is at risk for acquiring genital CT infection[1]. The following patients have a high risk for acquiring genital CT infection and should be routinely tested for the presence of infection: 1) sexually active males and females <25 years of age, and/or 2) recent contact with a known case of any sexually transmitted infection (STI), and/or 3) sexually active with new or >2 partners in the past 6 months, and/or 4) street involved, and/or 5) involved in any substance use.

2) Demographics and prevalence of genital CT infection in women being tested for genital CT infection by CLS:

Figure 1 shows the number of negative versus positive genital CT tests done by CLS for women during the years of 2001-02 and according to age groups before testing was restricted to women ≤ 35 years of age. Figure 2 shows that after the age of 30-years, the overall rate of genital CT infection in women falls to an almost negligible rate of 0.5%. The peak overall prevalence of genital CT infection in women occurs in those between the ages of 21-30 years, and confirmed genital infection sharply decreased in women older than 30 years of age. Although much less prevalent than genital CT infection, the demographics of genital GC infection are similar (data not shown). This data confirmed that CLS was unnecessarily routinely testing many older women without any risk prior to the implementation of the age-restricted testing policy[2, 3]. A recent review of the testing data in our region from last year showed that the prevalence of CT infection amongst women has not changed, except more testing is now being done in girls and teens ≤ 15 years of age.

Figure 1. Numbers of CT Negative versus Positive Genital CT Tests on Women - CLS 2001-02

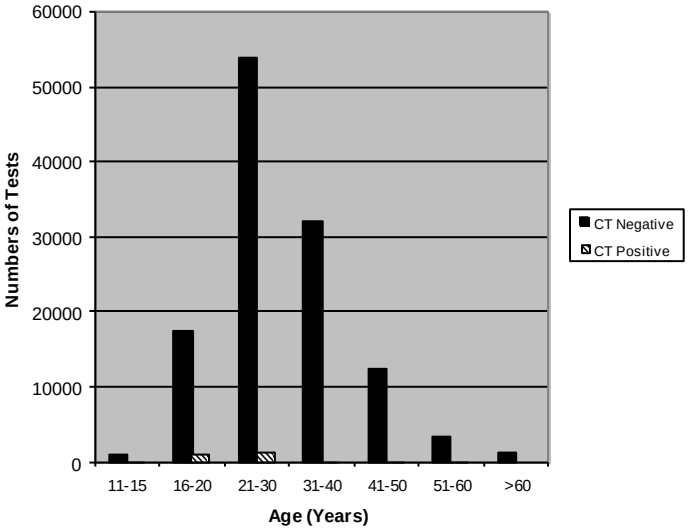
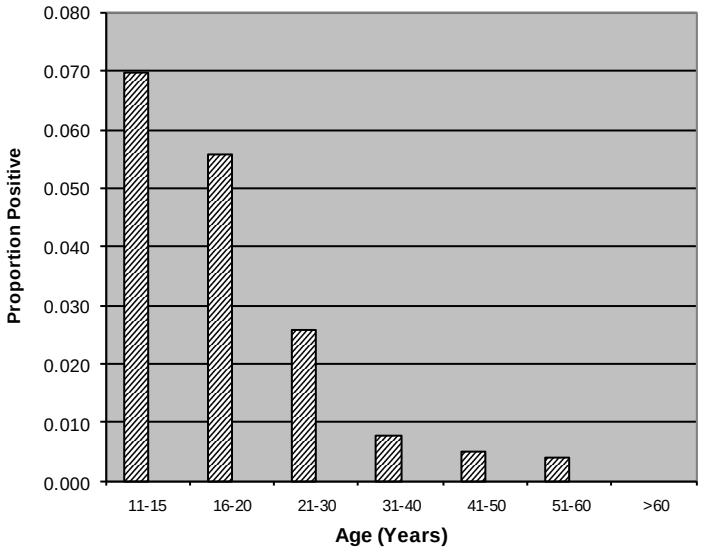


Figure 2. Proportion of Women with Positive Genital CT Tests - CLS 2001-02



3) What is the Risk Factor Profile of women being tested for genital CT infection in Calgary?

Several regional studies were also done prior to implementation of our age-restricted testing policy to determine the reasons why women in Calgary were being tested for genital CT infection[2, 3]. Women aged 15 to 75 years were enrolled at various patient care locations in the Calgary Health Region. Pertinent risk factors for genital CT infection were recorded and a gynecological examination was performed. Two endocervical swabs and a first-void urine sample were collected for CT detection using two different nucleic acid amplification methods[2]. Five hundred and four women with a mean age of 28.1 $\pm$ 8.22 years were enrolled from the Provincial STI clinic, the family planning clinic, the infertility clinic, and at the Emergency Departments and physicians' office practices. Two hundred ninety-one women (57.8%) were at high risk for acquiring genital CT infection. Twenty-eight (5.6%) tested positive for CT infection and almost all of these women (26 of 28.9%) had risk factors for acquiring infection. Of the high-risk women, 9.8% were CT positive versus only 1.3% of the women were at low risk (P=0.0001). Only two of 152 (1.3%) of the women > 30 years had genital CT infection. Although most women were asymptomatic, those with laboratory-confirmed CT infection were more likely to have genitourinary symptoms. Three hundred forty-three of 476 (72%) of the women who did not have genital CT infection had no risk factors, and screening was done as part of a routine gynecological examination for other purposes (prenatal visit, Pap smear) [3].

4) References:

1. *Canadian Guidelines on Sexually Transmitted Infections Updated January 2010*. Chlamydial Infections-Section 5-Management and Treatment of Specific Infections. Canada: Public Health Agency of Canada, 2013. http://www.phac-aspc.gc.ca/std-mts/sti-its/cgsti-ldcits/section-5-2-eng.php
2. Semeniuk H, A Zentner, R Read and DL Church. Evaluation of sequential testing strategies using non-amplified and amplified methods for detection of *Chlamydia trachomatis* in endocervical and urine specimens from women. Diag Microbiol Inf Dis 2002; 42:43-57.
3. Church DL, Amante L., H Semeniuk, Gregson DB. *Selective testing of women based on age for genital Chlamydia trachomatis and Neisseria gonorrhoeae infection in a centralized regional microbiology laboratory*. Diagn Microbiol Infect Dis. 2007, Apr; 57 (4): 379-85. Epub 2007 Jan 19.

IF YOU HAVE ANY QUESTIONS OR CONCERNS PLEASE CONTACT:

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