Canada Diseases Weekly Report

YEARY INCIDENCE OF CHLAMYDIA TRACHOMATIS INFECTION OF THE CERVIX IN A UNIVERSITY STUDENT HEALTH SERVICE POPULATION OVER FOUR YEARS – BRITISH COLUMBIA

Introduction
Gonorrhea infections with Chlamydia trachomatis are an important cause of cervices, urethritis, epididymo-orchitis, pelvic inflammatory disease (PID), infertility, and neonatal conjunctivitis and pneumonia. Many recent reports are available on single-year prevalence studies of infection in various population groups, demonstrating a range of prevalence from 3% to 11.4%, depending on the population studied. As opposed to other infectious agents associated with sexually transmitted diseases, the number of laboratory-confirmed infections and rates of infection for C. trachomatis in the Canadian population, particularly in the age group 18-24 years, are reported to be rising. However, this information is not divided into different population groups. This study reports a significant decrease over a 4-year period in the yearly incidence of C. trachomatis infections of the female cervix in a homogeneous population in this high-risk age group.

Methods
Since March 1983 all women attending the Student Health Service clinic, University of British Columbia, for the first time for a gynecologic examination have been screened for C. trachomatis. None of these women had recently been on antibiotics. From March 1983 to June 1984 specimens were collected into transport medium, cultured in vials using cycloheximide-treated McCoy cells (inclusion bodies detected by iodine stain). A blind passage was also carried out when culturing was done. From July 1984 to June 1987, following a comparative study of 500 specimens which demonstrated a 2-test concordance of 92.8%, the assay was changed to a direct immunofluorescence assay test (Micro Trak®, Syva, Palo Alto, CA). After June 1987, an enzyme immunoassay method (Chlamydiazyme®, Abbott Laboratories, Mississauga, Ont) was used following another 2-test concordance study (97.1%).

Statistical analyses were performed on proportions using the Chi-squared test and on means using the Student’s t-test.

Results
Although the number of women attending the clinic for gynecologic examination over the last 4 years has been constant, the yearly incidence of C. trachomatis infection in the cervix has fallen significantly (Chi-square 12.73 (3df), p<0.02)(Table 1). This decrease was noted to occur equally in both symptomatic and asymptomatic women (data not shown). The proportion of
positive screening tests in the first half of the school year (September to December), in each of the 4 years studied, was higher than those in the second half (January to April). In 1984-85 the proportions were 8.1% vs 6.4%; 1985/86, 7.2% vs 5.0%; 1986/87, 6.3% vs 5.1%; and in 1987/88, 5.6% vs 3.2%. In the last year studied, this difference in rates was statistically significant (Chi-square p<0.05).

The mean age of the women (21.9 years) at the time of a positive screening test was significantly (p<0.0001) younger compared to the mean age of women (23.9 years) at the time of a negative test.

Table 1 / Tableau 1

The Monthly and Yearly Incidence of C. trachomatis in a Female Student Population, British Columbia/Incidence mensuelle et annuelle de C. trachomatis chez des etudiantes, Colombie-Britannique

<table>
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<th>Year / Année</th>
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<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
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<tr>
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<td>4.1</td>
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<td>3.4</td>
<td>4.4</td>
<td>3.4</td>
<td>5.2</td>
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* Chi-squared 12.73 (3df) p<0.02 / Chi carré 12.73 (3df) p<0.02

Discussion

This decrease in yearly incidence has been constant over the 4 years and it is unlikely that it can be attributed to either a change in patient population, patient selection or test methodology. In the 1986-87 school year there was an aggressive AIDS education campaign stressing the need for "safe sex" and condom use. However, there was no evidence in a campus survey that condoms were used by the partners of sexually active women (R. Mathias, University of British Columbia: personal communication, 1989).

The clinic policy includes contacting all women with a positive result, treating them with tetracycline or doxycycline, and offering them a "test of cure" examination one week after finishing their course of antibiotics. All women are asked to contact present and past sexual partners at risk and urge them to seek concomitant therapy from this clinic, their family physician, pediatrician or gynecologist. This aggressive approach, combined with the ongoing screening program, may account for the difference between the incidence in September to December and January to April in each year studied.

The mean age of women testing positive has been consistently younger compared to women testing negative over the 4 years of studying C. trachomatis in the clinic. PID caused by this organism is often asymptomatic and may be responsible for some of the cases of tubal infertility in which there is no history of PID. The screening of young women in the experimental phase of their sexual expression is important if the incidence of tubal infertility is to be reduced.

In summary, incidence of genital infection with C. trachomatis in female university students has been decreasing over the last 4 years. Nonetheless, continued screening is essential for detection and treatment of asymptomatic cases.

References


Discussion

The baisse de l'incidence annuelle a été constante au cours de 4 années, et il est peu probable qu'elle s'explique par un changement de la clientèle, par la sélection des patientes ou par la méthode d'analyse. Pendant l'année universitaire 1986-1987, une campagne dynamique d'éducation sur le sida a mis l'accent sur l'amour sans risques et l'utilisation de condoms.

Cependant, une enquête menée sur le campus n'a pas permis de déterminer si les partenaires de femmes sexuellement actives utilisaient des condoms (R. Mathias, Université de la C.-B.: communication personnelle, 1989).

La politique du Service de santé est de communiquer avec toutes les femmes ayant un résultat positif, de les traiter à la tetracycline ou à la doxycycline; et de leur offrir un examen, une semaine après l'antibiothérapie, pour vérifier l'efficacité du traitement. Toutes les femmes ont été prises de communiquer avec leurs partenaires sexuels à risque (actuels ou anciens) et d'insister pour qu'elles se fassent soigner en même temps qu'elles au Service de santé, ou par leur médecin de famille, leur pédiatre ou leur gynécologue. Cette approche ferme, combinée au programme permanent de dépistage, explique peut-être l'écart entre l'incidence enregistrée pendant chaque année de l'étude de septembre à décembre et de janvier à avril.

Au cours des 4 années de l'étude sur C. trachomatis menée au Service de santé, la moyenne d'âge des femmes s'étant révélées positives a toujours été inférieure à celle des femmes négatives. L'IP provoquée par ce microorganisme est souvent asymptomatique et peut être la cause de certains cas de stérilité tubaire sans antécédents d'IP. L'examen de jeunes femmes qui font l'expérience de leur expression sexuelle est important si l'on veut réduire l'incidence de la stérilité tubaire.

En somme, l'incidence de l'infection génitale à C. trachomatis chez des étudiantes d'université est à la baisse depuis 4 ans. Le dépistage reste néanmoins essentiel à la détection et au traitement des cas asymptomatiques.

Références

Comment

The data from the University of British Columbia Student Health Service, if substantiated by others, are exciting because the study incorporates many of the principles of management that are thought to be necessary to decrease chlamydial infections (and other sexually transmitted diseases). That is, the investigators utilized screening tests, appropriate treatment and aggressive attempts to have partners treated.

There is at least a potential for other explanations that could account for some or all of the observed decrease in number of cervical chlamydial infections. Three different chlamydial diagnostic tests were utilized. When all 3 tests are performed in research laboratories, the order of progression of the diagnostic tests goes from the most sensitive test used in the initial part of the study, to the least sensitive test latterly. This alone could account for the increase observed in the rates between the January to April and September to December periods.

Another possibility for a decrease due to factors other than effective management approaches is the response of the university population to the AIDS era. Data from the Canada Youth and AIDS Study, and unpublished data from UBC referred to by the investigators do not indicate that university students are consistent users of condoms, but a decrease in the number of sexual partners and/or more consistent use of barrier methods of protection could account for a decreased number of infections. For the women evaluated, data are not provided on either of these possibilities.

Despite these potential other explanations, the results in this relatively closed population are encouraging. They should not be interpreted as signifying a decreased importance of chlamydial infection, but rather as a stimulus for continued screening, appropriate treatment of cases, and aggressive evaluation and treatment of sexual partners.

Commentaires

Si elles sont corroborées par d'autres, les données obtenues par le Service de santé pour étudiants de l'Université de la C.-B. sont fort prometteuses puisque l'étude applique nombre des principes de la prise en charge des cas que l'on considère comme étant nécessaires à la baisse des infections à Chlamydia (et d'autres maladies à transmission sexuelle)(1). En effet, les chercheurs ont eu recours à des tests de dépistage, au traitement approprié, et à des efforts énergiques pour que les partenaires se fassent traiter.

On ne peut éliminer toute possibilité qu'une partie ou que la totalité de la baisse observée dans le nombre de infections du col utérin par Chlamydia puisse avoir d'autres explications. Trois tests différents pour le diagnostic de Chlamydia ont été utilisés. Or, lorsqu'ils effectuent ces 3 tests, les laboratoires de recherche pratiquent le plus sensible au début de l'étude et terminent par le moins sensible. Ce seul fait peut entraîner une diminution apparente. Cependant, même si cette façon de procéder était un problème, il est peu probable qu'on puisse lui attribuer l'augmentation des taux observée entre la période de janvier à avril et celle de septembre à décembre.

Si l'on considère des facteurs autres que l'efficacité de la prise en charge, la réponse de la population universitaire à l'ère du sida pourrait aussi avoir provoqué une diminution. Ni l'étude sur les jeunes Canadiens faisant au SIDA, ni les données non publiées de l'U de la C.-B. communiquées par les chercheurs, permettent d'affirmer que les étudiants d'université utilisent systématiquement des condoms; la baisse du nombre de partenaires sexuels ou l'utilisation plus régulière de méthodes de protection pourrait toutefois expliquer la diminution des infections. L'étude ne fournit aucune donnée sur les femmes examinées en ce qui concerne l'un ou l'autre de ces possibilités.

Même si d'autres explications sont possibles, les résultats obtenus chez cette population relativement fermée sont prometteurs. Ils ne devraient pas être interprétés comme l'expression d'une importance diminuée de l'infection à Chlamydia, mais plutôt comme un encouragement au dépistage permanent, au traitement adéquat des cas, ainsi qu'à l'évaluation et au traitement actifs des partenaires sexuels.
Conference on Pelvic Inflammatory Disease

PID: The Costs

- 28 October 1989
- Segal Conference Centre, Simon Fraser University, Vancouver, British Columbia

The program for this 1-day conference will include panel and discussion groups on prevention and the social, emotional, reproductive and health-care fields of infection control, pharmacy, environmental services, applications and controversies), techniques for motivating adult learners, and personality and conflict on the psychology of “muddling through”.

Registration is free. For further information, contact The Canadian PID Society at (604) 684-5704.

Regional Symposium Preparing for a New Decade

- 3 November 1989, Ottawa, Ontario

This 1-day regional symposium, hosted by the Ottawa Organization for Practitioners in Infection Control, will be of interest to anyone in the health-care fields of infection control, pharmacy, environmental services, and education. Topics will include disinfectants (characteristics, applications and controversies), techniques for motivating adult learners, and personality and conflict on the psychology of “muddling through”.

Fee: $40.

For additional information, contact Carolyn Kennelly at (613) 737-7600.

References


Source: WR Bowie, MD, Division of Infectious Diseases, Vancouver General Hospital, University Hospital and the University of British Columbia, Vancouver, BC, and co-editor of the “1989 Canadian guidelines for the diagnosis and management of sexually transmitted diseases, by syndrome, in children, adolescents and adults”.

Announcements

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