

Comment

Contact partners of women with *C trachomatis* infection may be deterred from seeking medical help because of the intimate nature of the infection and because a urethral swab is needed. Urine samples obtained at home provide a non-invasive and less time consuming alternative.

A similar procedure for contact tracing of female partners of men infected with *C trachomatis* should be considered as the organism has been detected in urine samples from women.⁵

We thank the participating general practitioners.

Contributors: BA coordinated the primary study hypothesis and the core ideas, designed the protocol, obtained approval from the ethics committee, coordinated inclusion of patients, scanned the data, and coordinated the interpretation of results and writing of the paper. LØ discussed the primary hypothesis, core ideas, analysis, and protocol design and participated in the interpretation of results and writing of the paper. JKM discussed the hypothesis and ideas, led the analysis of the samples

obtained, participated in the interpretation of results, and edited the paper. FO discussed the hypothesis and core ideas and participated in the protocol design, coordination of contact with the general practitioners, the interpretation of results, and the writing of the paper. FO is the guarantor of the paper.

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Opportunistic screening for chlamydial infection at time of cervical smear testing in general practice: prevalence study

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Genital infection with *Chlamydia trachomatis* is the most common, curable sexually transmitted disease in England and Wales.¹ In the United States and Sweden screening programmes have been shown to be effective in reducing the prevalence both of cervical infection with *C trachomatis* and of sequelae such as pelvic inflammatory disease.^{1,2} In Britain a national selective screening programme has recently been recommended,³ but more data on the prevalence of chlamydial infection in different healthcare settings are needed.^{1,3} There have been no large studies of more than 1000 patients done on the patient populations from inner city general practices in the United Kingdom.¹ The aim of this study was to determine the prevalence and predictors of chlamydial infection in women aged <35 having cervical smear tests in inner London general practices.

Subjects, methods, and results

Thirty seven practice nurses and 108 general practitioners from 30 practices participated in the study. The total patient population served by the practices was 192 000. The mean Jarman underprivileged area score was 23 (range 15-33). (A positive score indicates social deprivation and compares with a mean score for England and Wales of 0.) Twelve practices had only one or two practitioners.

Each practice was asked to recruit consecutive women aged <35 who were attending for a cervical smear test, record their clinical details, test them for chlamydia, and ask them to complete a confidential questionnaire on sexual health. Informed consent and

ethical approval were obtained. Women who had taken antibiotics in the previous month were excluded.

Practice nurses and general practitioners were taught to take endocervical specimens for detection of chlamydial infection. These were analysed at St George's Hospital by enzyme immunoassay (Microtrak Syva II, Behring Diagnostics, Milton Keynes) and confirmed by direct fluorescent antibody testing. Six possible predictors of infection found in other studies were also examined: age <25, ethnic group, number of sexual partners, condom use, the presence of mucopurulent vaginal discharge, and the presence of a friable cervix with bleeding on contact.

Between May 1994 and October 1995, 1382 women aged 16-34 (mean age 27) were recruited. The mean number of subjects recruited from each practice was 46 (range 11-102). Practices were asked to complete recruitment rate forms for a sample of 25 consecutive women aged <35 attending for a cervical smear test. Practices recorded the age and ethnic origin of patients who were not asked to participate or who refused. Two practices had recruited 50 participants before the forms were introduced. Analysis of 18 forms returned by the practices showed that the age and ethnic origin of the 55/415 (13%) women who were not asked to participate and the 31/415 (7%) who refused were similar to those patients who agreed to participate. Altogether, 1049 women (76%) returned postal questionnaires. Of these women, 838/1040 (80%) were white, 84/1040 (8%) of Afro-Caribbean origin, 48/1040 (5%) of black African origin, 29/1040 (3%) of Indian subcontinent origin, and 41/1040 (4%)

See p 350

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Table 1 Risk factors for chlamydial infection in 1049 women who returned postal questionnaires after visit to general practitioner for cervical smear test

Risk factor	No (%) of women with risk factor	Prevalence (proportion)			Odds ratio (95% CI)	Adjusted odds ratio (95% CI)† (n=964)	% of positive cases identified if all women with risk factor screened
		Among women with risk factor	Among women without risk factor				
Age <25 (n=1049)	283 (27)	6.0 (17/283)	2.1 (16/766)	3.0 (1.5 to 6.0)**	2.5 (1.1 to 5.6)*	52	
Black ethnic origin‡ (n=1040)	132 (13)	9.1 (12/132)	2.3 (21/908)	4.2 (2.0 to 8.8)***	2.5 (1.0 to 6.1)*	37	
Black‡ and age <25 (n=1040)	38 (4)	21.0 (8/38)	2.5 (25/1002)	10.4 (4.3 to 25.0)***	4.8 (1.6 to 14.2)**	24	
Black‡ or age <25 (n=1040)	374 (36)	5.6 (21/374)	1.8 (12/666)	3.2 (1.6 to 6.7)***	2.7 (1.2 to 6.0)*	64	
Two or more sexual partners (n=1045)	224 (21)	7.1 (16/224)	1.9 (16/821)	3.9 (1.9 to 7.9)***	3.5 (1.6 to 7.7)**	50	
Condoms not always used (n=988)	834 (84)	3.5 (29/834)	2.0 (3/151)	1.8 (0.5 to 6.0)	1.4 (0.4 to 5.0)	91	
Mucopurulent vaginal discharge (n=1034)	197 (19)	6.6 (13/197)	2.2 (18/837)	3.2 (1.6 to 6.7)**	2.4 (1.1 to 5.6)*	42	
Friable cervix (n=1034)	93 (9)	9.7 (9/93)	2.3 (22/941)	4.5 (2.0 to 10.0)***	4.5 (1.8 to 11.2)**	29	
Black or age <25 or clinical signs§ (n=1025)	532 (52)	5.1 (27/532)	0.8 (4/493)	6.5 (2.3 to 18.8)***	5.6 (1.9 to 16.2)**	87	

*P<0.05; **P<0.01; ***P<0.001; †Adjusted for all other risk factors studied using multiple logistic regression; ‡Includes both Afro-Caribbean and black African; §Mucopurulent vaginal discharge or friable cervix.

from other ethnic groups. Nine women did not provide information on their ethnic origin. This is similar to the ethnic profile of the borough of Wandsworth, where the study was conducted.

Forty of the 1382 women (2.9%; 95% confidence interval 2.0% to 3.8%) tested positive for chlamydial infection. Infection was associated with age <25, being of black African or Afro Caribbean origin, having had two or more sexual partners in the previous year, the presence of mucopurulent vaginal discharge, and a friable cervix (table). Odds ratios remained significant after adjusting for all other risk factors studied using logistic regression. If all women aged <25 or of black race or with clinical signs had been screened, 52% of women would have had to be tested to detect 87% of cases.

Comment

The prevalence of chlamydial infection in our study was less than the 6% to 12% reported previously.¹ Several factors might contribute to this. Enzyme immunoassays are used widely in general practice but have sensitivities of 60% to 80% when compared with optimal methods.¹⁻⁴ Unlike the direct fluorescent antibody test, enzyme immunoassay does not permit assessment of the quality of endocervical sampling so we cannot tell how adequate the samples were. We excluded women who presented primarily with genitourinary symptoms. The prevalence of chlamydia in women attending general practices for smears may be lower than in those who do not attend or who use other facilities.

This study shows that routine testing for chlamydial infection is possible in a variety of non-research oriented, inner city practices. Screening by enzyme immunoassay may be cost effective at prevalences of 5% to 7% depending on what assumptions are made about the performance of the tests, the risk of complications, the effectiveness of treatment and contact tracing, and the costs.⁵ Information on age and ethnic group is easy to obtain; these are simple, pragmatic risk factors that can be evaluated without using complicated scoring systems.² Since women aged <25 and black women seem more vulnerable to chlamydial

infection, they could be offered testing when undergoing a speculum examination. Women with clinical signs should also be tested.¹ Routinely asking about numbers of sexual partners is not realistic in general practice. Before undertaking a screening programme, a cost benefit analysis of screening for chlamydia in this population¹ and protocols for effective management of infected women are needed.³

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