Clinical Investigation

Chlamydia trachomatis and *Neisseria gonorrhoeae* in Asymptomatic Family Planning Patients in Rural New Mexico

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We tested 98 asymptomatic women seen in state-funded contraception clinics in rural New Mexico. A fluorescein-conjugated monoclonal antibody stain revealed Chlamydia trachomatis *infection in 25% of asymptomatic unmarried women and 3% of married women (P = .03).* Neisseria gonorrhoeae *was detected in only one woman. As in urban clinics providing contraception, the prevalence of gonorrhea is rare in rural New Mexico, but chlamydial infections are common in young unmarried women.*

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Among women attending contraception clinics in urban areas, *Chlamydia trachomatis* infections are much more common than gonorrhea,[1,2] which is often considered to be an urban disease.[3] Less is known about the geography of genital chlamydial infections. They have been found in as many as 23% of Native Alaskan women[4] and 27.5% of pregnant Native Americans in New Mexico.[5] We know of no comparable data for rural women of European or Hispanic ancestry. Viable chlamydiae are difficult to transport from rural areas to central laboratories.[6] Direct staining of chlamydiae with monoclonal antibody stains permits the easier detection of chlamydial infections in remote clinics. We used this method to determine the prevalence of infection in women attending contraception clinics in rural New Mexico.

Subjects and Methods

Populations

From March through June 1987, we studied women in contraception clinics in Sandoval and Valencia counties. The clinics are run by the New Mexico Department of Health and the Environment, and more than 90% of the clientele have incomes below the federally defined poverty level. Subjects were recruited only if they were asymptomatic, 15 to 30 years old, had not taken antibiotics during the previous two weeks, and gave written consent.

Clinical Examination

Subjects were questioned about demographic characteristics and contraception. During the pelvic examination, the cervix was cleaned, and material for Papanicolaou smears and the direct detection of *C trachomatis* was removed. The identification of *Neisseria gonorrhoeae* was attempted with a Martin-Lewis medium.[7] Material for identifying *C trachomatis* was obtained with swabs pretested for their lack of toxicity (Micro Diagnostics, Medical Wire and Equipment Company [Bath] Ltd, Potley, Corsham, Wiltshire, United Kingdom). The *Chlamydia* transport medium was refrigerated and transported to the state laboratory in Albuquerque at the end of the work day and frozen at −70°C (−158°F).

Laboratory Methods

Smears for the direct detection of *C trachomatis* were stained and examined according to the manufacturer's directions (MicroTrak, Syva Diagnostics, Palo Alto, California).[8] Specimens were considered adequate for evaluation if the slide contained more than five columnar epithelial cells and the secretions were not too thick. They were considered positive if they contained five or more typical elementary bodies. Specimens for isolation (courtesy of W.E. Stamm, MD) were later shipped to Seattle, Washington, on dry ice.[9] Unfortunately, their temperature on arrival was 9°C to 12°C (48°F to 54°F).

Human Subjects

The study was approved by the Human Subjects Committee of the University of Washington and the Family Planning Review Board of the state of New Mexico.

Statistics

The χ^2 test and Fisher's exact test were used for comparisons of categorical data and Student's *t* test for continuous data. Confidence intervals (CI) were calculated with a microcomputer program, dEPID, version 2.1.[10]

Results

Consent was obtained from 124 subjects. Unevaluable specimens were obtained from 26 women (21%), whose demographic characteristics and contraception did not significantly differ from those of the other 98 women. The analysis is restricted to the remaining 98 women.

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The mean age of the 98 women was 22.0 years. The proportion currently married was 35%. The ethnic distribution was 65% Hispanic, 33% European ancestry and culture (Anglo), and 1% each of African ancestry (black) and Native American.

Chlamydiae were identified in 14 (14.3%) (95% CI, 7.6% to 21.2%) of the 98 evaluable smears and were isolated from 6 (43%) of the 14 specimens from women with positive smears but from none whose smears were negative. *N gonorrhoeae* organisms were isolated from 1 of 96 subjects tested; her smear was negative for *C trachomatis.*

Risk Factors for C trachomatis

The prevalence of chlamydial infection did not significantly differ between Anglo and Hispanic women—22% versus 11% ($P=.2$); between women using oral contraceptives or no contraception (14/89) and those using foam or condoms (0/9) ($P=.35$); or by age. The prevalence was 25% (95% CI, 10.4% to 30.1%) among single, divorced, or separated women and 3% (95% CI, 0% to 8.6%) among married women ($P=.03$).

Discussion

In rural New Mexico, genital chlamydial infection is common in asymptomatic poor, young, unmarried women seen in contraception clinics, while gonorrhea is rare. The prevalence of chlamydial infection that we found is lower than that in pregnant Native Americans in New Mexico[5] and higher than that in comparable clinics in the San Francisco Bay Area, California,[1] and in Seattle.[2]

In 1986, the rates of reported gonorrhea in Valencia and Sandoval counties ranked 14th and 18th, respectively, among New Mexico's 33 counties—59 and 55 per 100,000. In our study, chlamydial infection was 14 times more common than gonorrhea and is probably widespread in most other counties in New Mexico and perhaps much of the Southwest. The logistics of diagnosing these infections are problematic because testing for *C trachomatis* is impractical for rural health departments.

This and other such studies[1,2] have not given consistent results for risk factors for chlamydial infection. The rarity of gonorrhea in our population precludes its use as a proxy for chlamydial infection. The only way to effectively detect and treat chlamydial infection in such populations is to test for it specifically, especially in unmarried women.

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