Screening for Genital Chlamydia trachomatis in Female Patients in a Primary Care Setting

Mary A. Willard, MD, and Richard L. Edman, MD
Voorhees, New Jersey

As infections caused by Chlamydia trachomatis are of acknowledged importance to the physician practicing office gynecology, it is essential to have available a diagnostic test that can be performed with reliability in the office setting. Debate continues, however, about the accuracy and applicability of various diagnostic methods for Chlamydia identification. While culture is usually held as the "gold standard," the results may be subject to problems in collection and transport.[1] The direct immunofluorescent antibody test has been proposed as an easily performed rapid test alternative to culture. Studies that have supported this conclusion were conducted in predominantly urban high-prevalence populations.[2–4] A review of published material showed 95 percent or greater specificity for this method, but sensitivities varied greatly. Therefore, the direct immunofluorescent antibody test may be of use in the family practice setting only if it can be shown that the prevalence of the disease warrants it in this setting.

There are few published studies assessing suburban populations. One study reported by Schachter et al[5] assessed women in family planning clinics; the authors found by culture methods a prevalence for Chlamydia of 6 percent. Only two studies were conducted in a suburban population that compared methods of Chlamydia determination. Forbes et al[6] studied patients at a suburban obstetric clinic (prevalence 6.7 percent) and found an overall specificity of 91 percent with a sensitivity of 70 percent. Uyeda et al[7] analyzed women who were either about to have or had already had an abortion in a planned parenthood clinic. The results revealed an overall sensitivity of 96 percent with a specificity of 99 percent. None of the locations reported in these studies can be said to be representative of a family practice setting.

To address these issues, the utility of the direct test was investigated as a screening procedure in the office of a family physician. The goals of the study were to determine the prevalence of Chlamydia trachomatis in a suburban family practice setting and to compare direct immunofluorescence with standard culture methods.

METHODS

Subjects for this study were drawn from the Tatem-Brown Family Practice Center, the site of the West Jersey Health System Family Practice Residency. Data were collected from consecutive office visits requiring a pelvic examination over a 12-month period. All patients tested were members of a capitated prepaid health plan whose population is primarily of middle income.

All office visits included a complete gynecologic history and physical examination by the primary physician. All physicians who participated in the study received verbal, written, and demonstrated instruction in an appropriate endocervical collection technique from a senior physician experienced with this technique. Each patient had a cervical culture done and a specimen taken for immunofluorescent processing. Materials used in the study were supplied by the two laboratories under contract to the prepaid health plan. The laboratories provided the same transport media for the cultures and used the MicroTrak direct specimen test (Syva Corp, Palo Alto, Calif) for the direct immunofluorescent technique. Both the transport culture media and the slide were processed according to laboratory instructions.

Attempts were made to contact patients with inadequate, unpaired, or borderline test results so a second specimen could be obtained. Both the direct test and culture were repeated and the previous results were discarded. The borderline tests were direct immunofluorescent tests that were unable to be interpreted by the laboratories as positive or negative.

RESULTS

Because results from the two laboratories were not statistically different, the results were combined (Table 1). Ini-

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From the West Jersey Health System, Family Practice Residency Program, Tatem-Brown Family Practice Center, Voorhees, New Jersey. Requests for reprints should be addressed to Dr. Mary A. Willard, West Jersey Health System Family Practice Residency, One Carnie Boulevard, Voorhees, NJ 08043.

TABLE 1. COMBINED RESULTS OF TESTING FOR CHLAMYDIA

		Tissue Culture	
		Positive	Negative
Immunofluorescent antibody technique	Positive	7	1
	Negative	4	193

tially 237 consecutive visits were entered into the study. Each patient was entered only once, and after exclusion for lack of pairings or repeated inadequate MicroTrak results, 205 patient results were available for analysis. The prevalence of genital Chlamydia infection in this population of women was 5.4 percent with a mean age of patients being 32.5 years. The overall sensitivity of MicroTrak was 63.6 percent. The overall specificity was 99.5 percent. The positive predictive value and the negative predictive value were 87.5 percent and 97.9 percent, respectively.

COMMENT

Although there are some methodologic differences that make comparison of this study with others difficult, this suburban family practice setting was determined to have a low prevalence of Chlamydia trachomatis. Since the morbidity of infections caused by this organism is significant, the underdiagnosis reflected in the poor sensitivity of the direct test makes this test unacceptable in this setting. The sample size in this study mandates, however, that results be viewed with caution. The shortcomings of deriving sensitivity and specificity in relatively smaller samples are well known. Further research with a larger sample would be useful in further addressing not only this question but also issues of cost effectiveness. In addition, it must be remembered that the direct test was studied only as a screening tool. It is possible that this test would be reasonable in the subset of patients noted by other researchers to have diseases commonly caused by Chlamydia trachomatis. At this time culture remains the test best suited to a suburban family practice.

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