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The incidence of urogenital *Chlamydia trachomatis* infections among patients in Kumasi, Ghana

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Abstract

The incidence of urogenital chlamydia infections among selected patients in Kumasi, Ghana was evaluated using an immunofluorescent monoclonal antibody technique. Chlamydia trachomatis was identified in 4 of 110 patients presenting for prenatal care, 2 of 55 female patients with infertility and 6 of 15 males with acute urethritis. The findings demonstrate that C. trachomatis is a frequently identified pathogen among male patients presenting with symptoms of acute urethritis; however, the incidence of chlamydia infections among asymptomatic patients is relatively low.

Keywords: *Chlamydia trachomatis;* Urogenital infections.

Introduction

Chlamydia trachomatis has been identified as an important pathogen in sexually transmitted diseases among patients in developing countries [2,5,8,9,10] and has been associated with significant morbidity [3,4,6]. The incidence of *C. trachomatis* infections among patients in the developing countries is not as well documented. The little information that is available suggests the incidence of infections in these areas is similar to that noted in the developed countries [1,7]. The purpose of this study was to investigate the incidence of urogenital *C. trachomatis* infections among selected patients in Kumasi, Ghana. Kumasi is a large city located in central Ghana within the tropical rain forest region. The University of Science and Technology and the Komfo Anokye Teaching Hospital are located in Kumasi and served as the site for this study.

Methods

A total of 180 patients were evaluated for *C. trachomatis* infections. This included: (1) 110 randomly selected, asymptomatic, pregnant females attending antenatal clinics; (2) 55 female patients presenting with complaints of primary or secondary infertility (defined as inability to conceive after 1 year of unprotected intercourse); and (3) 15 males presenting with symptoms consistent with acute urethritis.

Urethral and endocervical specimens were obtained using a dacron tipped swab and plated on a glass slide. After air drying, the specimens were fixed with 0.5 ml of acetone. Fixed slides were then frozen at 0—4 °C and remained frozen from 6 to 8 weeks until they were analyzed at the University of Michigan

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Medical Center (UMMC). The presence of *C. trachomatis* was determined using a fluorescein labeled monoclonal antibody (Micro-Trak™/SYVA Corporation). Infection with *C. trachomatis* was considered present when 5 or more elementary bodies were identified. Using these criteria the Micro Trak™ test at the UMMC, when compared to culture results, has been demonstrated to have a sensitivity of 100% and a specificity of 96%. All slides were analyzed by one of the authors (C.W.D.) who had previous training reading the Microtrak™ test and who was unaware of the source of the specimen.

Results

One hundred ten patients with uncomplicated pregnancy who were attending antenatal clinics at the Komfo Anokye Teaching Hospital were studied. *C. trachomatis* was identified in 4 of 110 (3.6%) endocervical samples. Endocervical samples were also obtained from 55 patients who complained of infertility. Two of 55 (3.6%) were positive for *C. trachomatis.*

Urethral samples were obtained from 15 male patients who complained of urinary symptoms consistent with a diagnosis of urethritis. Fourteen of 15 patients had previously received antibiotic therapy including four patients who were treated with agents active against chlamydia. *C. trachomatis* was identified in 6 (40.0%) patients including 1 of the 4 patients who were treated with an antibiotic effective against *C. trachomatis.* Gram stains were performed in 5 patients and gram negative intracellular diplococci were identified in 2 of these 5. These results are summarized in Table I.

Table I. Incidence of urogenital *Chlamydia* infections.

Patient group	No. studied	No. with *C. trachomatis* identified	% positive
Asymptomatic pregnant patients	110	4	3.6
Females with infertility	55	2	3.6
Males with Urethritis	15	6	40

Discussion

These findings suggest that *C. trachomatis* is an important pathogen in sexually transmitted infection in Kumasi, Ghana, and isolation rates from this area are consistent with those reported from western countries. An asymptomatic carriage rate of 3.6% is similar to that reported from nearby Accra [1].

The present study did not demonstrate an increased incidence of *C. trachomatis* infections among patients with infertility, as has been noted in other studies [2,4,6]. However, the etiology of infertility in these patients was not fully evaluated and factors other than tubal disease may have contributed. Additionally, a single cervical swab does not exclude the possibility of prior chlamydial infections. A relationship between *C. trachomatis* infections and infertility might have been noted had serological data been obtained.

Of particular interest was the incidence of *C. trachomatis* infections noted in urethral specimens from symptomatic males. The incidence is consistent with that reported from other countries from symptomatic males. Previous antibiotic therapy, with agents active against *C. trachomatis* resulted in a lower rate of isolation of *Chlamydia.*

The data obtained from this study indicate that *C. trachomatis* is an important pathogen in sexually transmitted infections among patients in Kumasia, Ghana.

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