

CHLAMYDIAL INFECTION IN FEMALE PROSTITUTES IN SINGAPORE

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ABSTRACT

Three studies conducted in 1982, 1985 and 1988 investigated chlamydial infections in female prostitutes. In 1982, 115 prostitutes with culture-positive gonorrhoea were studied; 8% were coinfecting with *Chlamydia trachomatis*. In 1985, 86 female prostitutes and in 1988, 100 female prostitutes attending for routine tests were examined. *Chlamydia trachomatis* was isolated in 12% and 9% of the cases, respectively. Gonorrhoea was detected in 10% and 11% of the cases. In the 1988 study, one (9%) of the 11 women with gonorrhoea had concomitant chlamydial infection. Syphilis was diagnosed in 3% of the female prostitutes investigated in 1988. Our findings indicate that concomitant chlamydial infection occurs in about 8-9% of female prostitutes with gonorrhoea and that 9-12% of the female prostitutes screened harboured *Chlamydia trachomatis* in their endocervices. A chlamydial control programme in prostitutes is desirable.

KEY WORDS: *Chlamydia Trachomatis*, female prostitutes.

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INTRODUCTION

Chlamydia trachomatis is a common cause of sexually transmitted disease (STD) in many parts of the world. Infections in women are very often asymptomatic leading to potentially serious sequelae such as pelvic inflammatory disease (PID) and its complications of infertility and ectopic pregnancy(1). Aside from this, women also form an important infective reservoir for the transmission of infection to their sexual partners and newborn. In Southeast Asia, prostitutes play a prominent role in the dynamics of transmission of STD. Unpublished data from two previous studies suggest that about 90% of men attending Middle Road Hospital with nongonococcal urethritis acquire their infections from prostitutes(2,3). Since 1982, several studies were carried out in female prostitutes attending Middle Road Hospital. The results of these studies are presented below.

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MATERIALS AND METHODS

The studies were conducted in 1982, 1985, and 1988 at Middle Road Hospital, Singapore. In 1982 prostitutes recalled for the treatment of culture-positive gonorrhoea were investigated for chlamydial infection. The 1985 and 1988 studies investigated the prevalence of endocervical chlamydial infection in female prostitutes attending for routine STD checks.

In the 1982 study, endocervical specimens were collected for the culture of *C. trachomatis* alone. In the 1985 and 1988 studies endocervical specimens were collected for the culture of *N. gonorrhoeae* and *Chlamydia trachomatis*, and rectal specimens for the culture of *N. gonorrhoeae*. In the 1988 study, blood was also taken for the Venereal Disease Reference Laboratory (VDRL) test; VDRL-positive sera were confirmed with the Treponemal Haemagglutination (TPHA) test. Women who were menstruating or who had taken antibiotics during the preceding two weeks were excluded from the study.

Specimens for gonococcal culture were inoculated directly onto modified Thayer-Martin medium. The method of culture of *N. gonorrhoeae* has been previously described(2). Endocervical specimens for the culture of *C. trachomatis* were collected using sterile cotton-tipped wooden swabs and expressed in 1 ml of 0.2 molar sucrose-phosphate buffer and transported to the Department of Pathology in ice. *Chlamydia trachomatis* was cultured in cycloheximide-treated McCoy cells. After 48-72 hours incubation, the cells were Giemsa stained and examined under darkfield microscopy for fluorescent inclusions.

RESULTS

The results of chlamydial isolation are shown in Table I. In 1982, chlamydiae were recovered from 8% of 115 prostitutes with gonorrhoea. In 1985 and 1988, the prevalence of endocervical chlamydial infection in women attending for routine tests, was 12% and 9%, respectively. The prevalence of gonorrhoea in these two studies were 10% and 11% respectively. In the 1988 study, one of the 11 women with gonorrhoea also had chlamydial infection. The prevalence of syphilis in the 1988 study was 3%.

DISCUSSION

The importance of female prostitutes in the dynamics of transmission of STD is evident from previous studies(2,3). In 1982, we found that 8% of women with gonorrhoea were co-infected with *Chlamydia trachomatis*.

Table 1
THE PREVALENCE OF INFECTION IN FEMALE PROSTITUTES

Study	Number studied	Chlamydial Infection	Gonorrhoea	Syphilis
1982	115	8%	100%*	ND
1985	86	12%	10%	ND
1988	100	9%	11%	3%

* The prostitutes studied all had gonorrhoea.
ND = Not determined.

In 1988, one (9%) of the 11 prostitutes with gonorrhoea were also chlamydia-positive. Data on the incidence of chlamydia-gonococcal infection were not available from the 1985 study. Nonetheless, data from the 1982 and 1988 studies indicate that 8-9% of female prostitutes with gonorrhoea are also co-infected with *C. trachomatis*. These findings are noteworthy because the currently recommended regimens for the treatment of gonorrhoea, are ineffective against chlamydiae. These women, therefore, need to receive additional anti-chlamydial therapy. The 1985 and 1988 studies also show that 12% and 9% of the

prostitutes attending for routine STD tests were chlamydia-positive. Chlamydial infections are therefore quite common in female prostitutes. A comparison of the prevalence of chlamydial infections with other important STD shows the following. In 1985, chlamydial infection was detected in 12%; gonorrhoea was detected in 10%. In 1988, chlamydia was detected in 9%; gonorrhoea in 11% and syphilis in 3% of female prostitutes screened. Chlamydial infection is as common as gonorrhoea and more common than syphilis in female prostitutes. Therefore the current practice of screening female prostitutes for only gonorrhoea and syphilis needs to be re-examined and a chlamydial control programme in female prostitutes needs to be formulated. It is comforting to note that the prevalence of chlamydial infection has not increased between 1985 (12%) and 1988 (9%). However, figures from the West suggest that chlamydial infection is on the increase and there is every likelihood that the same will occur in Singapore unless appropriate steps are taken.

There are few published studies on the prevalence of STD in female prostitutes and even less is known about the prevalence of chlamydial infections. Studies in female prostitutes in the West have revealed higher prevalence rates of chlamydial infection of about 20%(4,5).

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