ORIGINAL

Chlamydial Infection in Saudi Infertile Patients

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ABSTRACT

In the Andrology and Infertility Clinic at King Abdulaziz University Hospital, Jeddah, Saudi Arabia, we tested sixty five specimens of thirty four male and thirty one female patients. The male patients were clinically suspected of having chlamydial infection. All the thirty one female patients had undergone a laparoscopy for evaluation of their tubal factor.

A direct test using fluorescein labelled monoclonal antibodies was used for the identification of chlamydial elementry bodies in direct smears of swabs from the endocervix in female patients and from the urethra in male patients. Nine females (29%) and nine males (26.4%) were found to be positive in the endocervical and urethral specimens respectively.

When we compared the results of the laparoscopic findings, the nine patients who had positive tests for chlamydia, and the twenty-two patients who had negative tests, we found that seven out of nine and six out of twenty-two patients had tubal disease, with a statistically significant difference ($p<0.005$).

Chlamydia trachomatis is now recognized as an important human pathogen in a broad spectrum of diseases[1-13]. Only within the last two decades has chlamydia been clearly indentified as an important aetiological agent in sexually transmitted diseases[1]. It may be the leading cause of involuntary infertility in the United States[4]. The prevalence of these chlamydia related diseases is thought to exceed that of gonorrhoea in the Western world[12]. In both cases, the infection may be asymptomatic[2], and may be associated with infertility and cervical dysplasia[14].

Chlamydia trachomatis is now known to cause urethritis[1,2,4,10], epididymitis, proctitis[7], cervicitis, pelvic inflammatory disease[6,8], including Fitz-High Curtis syndrome[13], infant pneumonia[11], and conjunctivitis[3]. It has also been implicated in Reiter's syndrome[5].

Since chlamydial culture procedures are not widely available, diagnosis and treatment of suspected chlamydial infections were previously based in various settings on the clinical syndrome alone. However, the presumptive therapy for symptomatic infections does not control the expanding reservoir

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of asymptomatic carriers. MICROTRACK (Syva Co) is a direct test on clinical specimens for the diagnosis of chlamydia trachomatis infections.

In this paper we report the result of our study of detecting the genital chlamydial infection in Saudi infertile patients using the MICROTRACK direct test, as well as the comparison between the results and the presence of tubal disease in female patients.

METHODS

Sixty-five patients were selected from the Andrology and Infertility Clinics at King Abdulaziz University Hospital, Jeddah, Saudi Arabia. Specimens were collected from thirty-four male and thirty-one female patients. The male patients had pyospermia and showed evidence suggestive of urethritis or epididymitis. All the female patients presented with infertility and underwent a diagnostic laparoscopy and dye test to evaluate their tubal factor.

We used fluorescein labelled monoclonal antibodies against the major outer membrane protein present in all known human strains of Chlamydia trachomatis to detect individual elementary and reticulate bodies in direct smears. Specimens were collected using the MICROTRACK chlamydia trachomatis specimen collection kit which includes two Dacron swabs (one large and one small), a microscope slide with a single 8 mm well, a vial of acetone fixative and a cardboard transport container.

SPECIMEN COLLECTION

Specimen collection is a critical step in the MICROTRACK direct test. Diagnosis is based on the presence of intact cells to ensure that an adequate sample has been obtained. In male patients, the swab was inserted 2-4 mm into the male urethra by slight rotation. Once inserted, the swab was gently rotated and withdrawn. In female patients, the excess mucus, or exudate was removed from the exocervix with a cotton or Dacron swab. The swab was inserted and rotated inside the endocervical canal, just beyond the squamo-columnar junction. In all cases, sufficient pressure was applied to dislodge cells, since these micro-organisms are intracellular. Then, the specimen was applied directly on to the collection kit slide by firmly rolling the swab within the well perimeter. The smear was air-dried and then fixed with acetone for one minute. The monoclonal antibodies were labelled with fluorescein isothiocynate which, when viewed under the fluorescent microscope, exhibited the positive specimen as apple green elementary or reticulate bodies, contrasted by the red counter-stained cells.

Results of the laparoscopies were categorized as normal tubes in case both tubes were patent and no paratubal adhesions were present, and diseased tubes when one or both tubes were blocked or paratubal adhesions were present.

Statistical analyses were conducted, using the x^2 test.

RESULTS

Out of the sixty-five specimens tested, eighteen specimens (27.7%) were positive for chlamydia. The distribution between male and female patients is shown in Table 1.

Table 1

Distribution of Chlamydial Infection in Male and Female Patients

Site	Total Number of Patients	Positive Number	Positive Percentage
Endocervical	31	9	29.0
Male Urethra	34	9	26.4
Total	**65**	**18**	**27.7**

Table 2

Laparoscopic Findings in Female Patients

	Normal Tubes	Diseased Tubes	Total
Positive Chlamydia	2 (22.2%)	7 (77.8%)	9
Negative Chlamydia	16 (72.7%)	6 (27.3%)	22

$x^2 = 6.691$, df = 1, $p < 0.05$

The laparoscopic findings of the female patients are shown in Table 2. When comparing the results of the laparoscopic findings of the nine patients who had positive tests for chlamydia with the twenty-two patients who had negative tests, we found seven out of the nine (77.8%) and six out of the twenty-two (27.3%) patients had tubal disease, with a statistically significant difference ($p < 0.005$).

DISCUSSION

The need for skilled personnel is specifically indicated in the MICROTRACK test, as it depends mainly on the adequacy of specimens supplied for direct testing to detect chlamydial infections. The MICROTRACK direct test has a distinct advantage over chlamydiazyme and culture in so much as it allows the quality of the specimens to be evaluated [9,12]. The direct test offers results within 30 minutes of the specimen being received in the laboratory and makes routine screening for chlamydial infections more practical.

Although the number of patients in our study is rather small, the over-all positive cases for chlamydia is relatively high, which would emphasize the need for a screening programme for chlamydia in the genital tract.

Chlamydia trachomatis accounts for at least 20% to 30% of salpingitis cases in Scandinavia and the United States[15,16]. Most gynaecologists have had the experience of discovering tubal disease of varying degrees of severity in women with no history of salpingitis and at least some of these infections have been associated with chlamydia trachomatis[17].

CONCLUSION

In our study, we found that patients with positive test for chlamydia had a higher incidence of tubal disease than those who had a negative test. This would emphasize the importance of detecting chlamydial infection especially in asymptomatic patients, as it may be the cause of infertility in such patients.

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