

Polymerase chain reaction is no better than Gram stain for diagnosis of gonococcal urethritis

Sir,

Chlamydia trachomatis and *Neisseria gonorrhoea* are the leading reportable causes for sexually transmitted diseases (STDs) in the United States.^[1,2] In UK, gonorrhoeal disease is considered the second most common sexually transmitted infection of bacterial origin.^[3] In France, the average number of *Neisseria gonorrhoea* isolated per laboratory per year decreased from 10.6 in 1986 to 0.6 in 1997, but then increased yearly to reach 1.9 in 2000.^[4] Also, gonococcal and nongonococcal urethritis are the most commonly reported STDs in China since the re-emergence of STDs in the late 1970's and early 1980's.^[5]

Among individuals with gonorrhoeal infection, 3.3–37% of men had a chlamydial coinfection, and 12–28% of men with chlamydial infection had a gonorrhoeal coinfection.^[6, 7] Although gonorrhoeal and chlamydial infections can be easily diagnosed, treated, and cured, the undetected and untreated infections lead to severe and costly health problems such as pelvic inflammatory disease, ectopic pregnancy, and infertility in females; and testicular and prostate infections and infertility in males.^[8]

At the national level of Kuwait, the information on reported cases of gonorrhoeal and chlamydial infections are limited and often missing. Hence, our goal is to determine the co-occurrence of both these diseases among men with urethral discharge as well as to establish the efficacy of PCR in the diagnosis of gonococcal urethritis.

This study was conducted in the STD clinic of Adan hospital, which is the referral to the whole south region of the state of Kuwait. Men attending STD clinics and currently having any of the STD symptoms (e.g., genital discharge, itching, burning or pain during urination) were examined and only those patients with urethral discharge and past history of heterosexual intercourse confirmed by clinical examination (visible or milking when necessary) were included in this study. Two urethral swab samples were taken. The swab was inserted 1–2

cm into the urethra and rotated for 30 seconds before withdrawing. One sample was smeared on a slide and examined after Gram staining and the other was stored at –20°C to test for the presence of *Neisseria gonorrhoea* and *Chlamydia trachomatis* by PCR assay.

The study conducted between October 2005 and 2006 had a total of 475 newly registered cases of men complaining of urethral discharge with past history of heterosexual intercourse. The mean age of the patients was 32.5 years with standard deviation of 7.62 years (range: 17–61 years). Of the 475 patients, 125 (26.3%) were diagnosed with gonococcal urethritis, 47 (9.8%) were diagnosed with chlamydial urethritis, and 11 (2.31%) were diagnosed with coinfection of both *Neisseria gonorrhoea* and *Chlamydia trachomatis*. The chlamydial coinfection among patients with gonorrhoeal urethritis was 8.1% (11/136), while gonorrhoeal coinfection among patients with chlamydial urethritis was 18.9% (11/58) [Table 1].

The correlation of the results of both Gram stain and PCR for diagnosis of gonorrhoea, they agree in 134 cases (98–52%) of totally 136 diagnosed cases of gonorrhoea, and disagree only in two of the cases (1.48%). The overall correlation between the two methods was 99.4%.

Consistent with previous studies, we found high proportions of individuals carrying both chlamydial and gonococcal infections among those infected with either of the two diseases.^[6,7,9]

Consistent with our results, Juchau *et al.*^[10] concluded

Table 1: Number of patients tested and infections detected along with coinfection rates

Study cohort	Total no. of patients with gonorrhoea (%)	Total no. of patients with chlamydial infection (%)	No. of patients with both infections (%)
475	125 (26.3)	47 (9.8)	11 (2.31)
Total	183/475 (38.52)		

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that the correlation between PCR and Gram stain examination for diagnosis of gonorrhoea was 99.6%. Thus, we conclude that there is no practical reason to use PCR examination for diagnosis of gonorrhoea in symptomatic males owing to its high cost.

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