Use of Ligase Chain Reaction and Polymerase Chain Reaction on Urine Specimens to Detect *Chlamydia trachomatis* Infections in a Sexually Transmitted Diseases Clinic in Singapore

H H Tan,*MBBS, MRCP (UK), R K W Chan,**FAMS, MBBS, FRCP (Lond), A S M Teo,***BSc, L P Boey,***

Abstract

This study was done to assess the specificity and sensitivity of the DNA amplification assays of ligase chain reaction (LCR) and polymerase chain reaction (PCR) on urine specimens to detect* Chlamydia trachomatis *infections in both male and female patients seen at a sexually transmitted diseases (STD) clinic in Singapore, compared with other diagnostic methods currently in use.

A total of 100 patients were selected; 50 male patients diagnosed with non-gonococcal urethritis based on symptoms and a positive Gram-stained urethral smear and 50 female asymptomatic sex workers were assessed. Automated assays using LCR and PCR were used, and compared to enzyme immunoassays, chlamydial cell cultures and PCR of urethral and endocervical swab specimens.

In male patients, LCR and PCR of urine specimens had sensitivities of 100%, compared to 87.0% for PCR of urethral swab specimen, 82.6% for enzyme immunoassay (EIA) and 91.3% for cell cultures. In female patients, LCR and PCR of urine samples achieved sensitivities of 77.8% and 88.9% respectively, compared with 55.6% for PCR of endocervical swab specimens, 22.2% for EIA and 66.7% for cell cultures.

LCR and PCR of urine samples provided higher sensitivity compared to cell cultures, EIA and PCR of urethral and endocervical swab specimens. The use of LCR and PCR on urine as a non-invasive means of detecting chlamydial infections is viable, and may have a role to play in population-based screening programmes.

***Ann Acad Med Singapore* 1999; 28:245-51**

Key words: Diagnosis, DNA amplification, Screening

* *Registrar*
** *Senior Consultant Dermatologist*
*** *Laboratory Technician*
National Skin Centre
Address for Reprints: Dr Tan Hiok Hee, National Skin Centre, 1 Mandalay Road, Singapore 308205.