STANDARD CLINICAL PRACTICES PERTAINING TO SEXUAL HEALTH & SEXUALLY TRANSMITTED INFECTION MANAGEMENT

Serological testing for *Chlamydia trachomatis, Neisseria gonorrhoea, Mycoplasma genitalium* and *Candida albicans*.

Serological testing for STIs.

Serological tests should **NOT** be used for *Chlamydia trachomatis, Neisseria gonorrhoea*, *Mycoplasma genitalium* and *Candida* species.

- *Candida spp* is an ubiquitous organism. Serological testing frequently yields positive results, because most individuals are colonized by this organism at some point, but is not indicative of genital disease. Genital swab tests are available which enable specific diagnosis and direct correlation between test results and genital symptoms. Asymptomatic infections do not require treatment (1, 2).

- *Chlamydia trachomatis* diagnosis should be made by *C. trachomatis* nucleic acid amplification tests (NAATs e.g. PCR, SDA, TMA) from sites suspected of being infected (2, 3, 4, 5). These are the gold standards for investigation of *C. trachomatis* with their high sensitivity and specificity. Serology should not be performed as a means to diagnose genital chlamydial infection for the following reasons:

  1) Baseline prevalence of positive *C. trachomatis* antibody is high but often without other microbiological evidence of current infection.
  2) Positive serology does not differentiate between past or current infection and may be negative in acute infection.
  3) There is significant cross-reactivity with other chlamydial species that are not related to genital infection (4 - 8).

  Chlamydia serology is normally only used in the study setting investigating infertility and pelvic inflammatory disease. In the sexual health and primary health care setting serology has been made obsolete for many years.

- Diagnosis of *Neisseria gonorrhoeae* should be by identification of the organism at infected sites by direct microscopy, culture or NAATs. Serology is not useful for screening of *N. gonorrhoeae* due to the lack of sensitivity and specificity (2, 3, 5, 9).

- *Mycoplasma genitalium* is now recognized as an STI associated with urethritis, cervicitis and upper genital tract infections (10, 11, 12, 13, 14). It is a fastidious organism, growing poorly in culture media, therefore, NAATs would be the ideal screening tool (15, 16). However, at present there are neither commercially available diagnostics nor clear guidelines on screening in men or women.

Type Specific Serological Tests (TSSTs)for herpes

These should only be based on recombinant type-specific glycoproteins gG1 (HSV 1) and gG2 (HSV 2). They may be useful in certain clinical situations e.g. confirming diagnosis of genital herpes in someone with a typical history, counselling of sexual partners of infected persons, detection of unrecognized infection and for seroepidemiological studies. Examples of these tests are HerpeSelect™ 1 and 2 ELISA (Focus Technologies, USA) and Immunoblot test kits. Older kits should not be used as there are issues of cross-reactivity.

Serological screening tests that are useful in an STI setting

Serology for syphilis
HIV testing
Hepatitis B and C screening if appropriate
TSSTs for herpes if appopriate

References:

1. White DJ, Vanthuyne A. Vulvovaginal candidiasis. *Sex Transm Infect 2006;*82:iv28-iv30

2. DSC Clinic National Skin Centre. Sexually transmitted infections management guidelines 2007. DSC Clinic, National Skin Centre; 2007.

3. Centres for Disease Control. Sexually Transmitted Diseases Treatment Guidelines 2006. MMWR 2006; 55:38-42.

4. C Carder, D Mercey, P Benn. Chlamydia trachomatis. *Sex Transm Infect* 2006;82:iv10-iv12

5. Sexual Health Society of Victoria. National management guidelines for sexually transmissible infections. Sexual Health Society of Victoria; 2008.

6. Stamm WE. Chlamydia trachomatis infections of the adult. In: Holmes KK, Sparling PF, Mardh P, Lemon SM, Stamm WE, Piot P, et al, editors. Sexually transmitted diseases. 3rd ed. New York (NY): McGraw-Hill; 1999. p. 407-22.

7. Johnson AM, Horner P. A new role for Chlamydia trachomatis serology? *Sex Transm Infect* 2008; 84:79-80.

8. Moss TR, Darougar S, Woodland R, Nathan M, Dines RJ, Cathrine V. Antibodies to Chlamdyia species in patients attending a genitourinary clinic and the impart of antibodies to C. pneumoniae and C. psittaci on the sensitivity and specificity of C. trachomatis serology tests. *Sex Transm Dis* 1993; 20:61-65.

9. Bignell C, Ison, CA, Jungmann E. Gonorrhoea. *Sex Transm Infect* 2006;82:iv6-iv9.

10. Gaydos C, Maldeis NE, Hardick A, Hardick J, Quinn TC. Mycoplasma genitalium compared to chlamydia, gonorrhoea and trichomonas as an etiologic agent of urethritis in men attending STD clinics. *Sex Transm Infect* 2009: 85:438-40.

11. Bradshaw CS, Tabrizi SN, Read TR et al. Etiologies of nongonococcal urethritis: bacteria, viruses, and the association with orogenital exposure. *J Infect Dis* 2006; 193:336-45.

12. Falk L, Fredlund H, Jensen JS. Signs and symptoms of urethritis and cervicitis among women with or without Mycoplasma genitalium or Chlamydia trachomatis infection. *Sex Transm Infect 2005*; 81:73-8.

13. Manhart LE, Critchlow CW, Holmes KK, et al. Mucopurulent cervicitis and Mycoplasma genitalium. *J infect Dis* 2003; 187:650-57.

14. Cohen CR, Manhart LE, Bukusi EA, et al. Association between Mycoplasma genitalium and acute endometritis. *Lancet* 2002; 359:765-66.

15. Taylor-Robinson D, Ainsworth JG, McCormack WM. Genital mycoplasmas. In: Holmes KK, Sparling PF, Mardh P, Lemon SM, Stamm WE, Piot P, et al, editors. Sexually transmitted diseases. 3rd ed. New York (NY): McGraw-Hill; 1999. p. 533-48.

16. Manhart LE. Has the time come to systemically test for Mycoplasma genitalium? *Sex Transm Dis* 2009; 36:607-8.