

Congenital syphilis

THE DISORDER

- Caused by congenital infection with *Treponema pallidum*.
- Acquired (usually after the 18th week of pregnancy) from a mother with primary, secondary, or early latent syphilis.
- Can lead to stillbirth, premature birth, neonatal death, disorders of infancy (e.g. hepatomegaly, jaundice, osteochondritis) and later manifestations (most commonly keratitis).¹

FREQUENCY

- In the UK, around one per 10 000 pregnant women was identified as infected with *Treponema pallidum* in the mid 1990s.²
- Since 1997 the incidence of infectious (i.e. primary or secondary) syphilis has been increasing in the UK and a number of other Western European countries.^{3,4}
- In the absence of screening, it is estimated that congenital syphilis occurs in 20% of the offspring of infected women—that is, in 20 per million total births in the UK.¹

SCREENING TEST

- Serological testing of maternal blood taken at antenatal booking visit. In the UK, a treponemal enzyme immune assay (EIA) alone (IgG or IgG/IgM) or a combination of a non-treponemal test and a treponemal test (Venereal Disease Reference Laboratory (VDRL) or Rapid Plasma Reagin (RPR) and *Treponema pallidum* Haemagglutination Assay (TPHA)) is the current choice. A serological testing algorithm has been published.⁵

SUBSEQUENT TEST

- If initial screening positive, test a second maternal blood sample, using a serological test which is independent methodologically and has equivalent sensitivity to the screening test and greater specificity.

SCREENING PERFORMANCE IN DISCRIMINATING BETWEEN INFECTED AND UNINFECTED WOMEN

- Detection rate 99% except in very early primary syphilis. False positive rate estimated to be 0.1% for non-treponemal and treponemal tests combined.^{2,6}

REMEDY

- Treat infected women with penicillin, which prevents most cases of congenital infection when given early in pregnancy.⁷

OVERALL ASSESSMENT

- A 3 year UK survey (1994–97) identified four presumptive and four possible cases of syphilis per million births, suggesting that 60–80% of cases that would occur in the absence of screening (20/million) are being prevented.^{1,2}
- Antenatal screening also benefits infected women themselves by their treatment, and enables undiagnosed syphilis in their sexual partners to be identified and treated.
- The marginal cost of antenatal screening for syphilis in the UK has been estimated to be about £0.90 per pregnancy.^{2,8}
- It is therefore recommended (i.e. by the UK's National Screening Committee)⁹ that antenatal serological screening should remain part of antenatal care for all women in every pregnancy.⁶

1 Peckham CS, Newell M-L. Infections. In: Wald N, Leck I, eds. *Antenatal and Neonatal Screening*, 2nd ed. Oxford: Oxford, 2000:159–94.

2 STD Section, HIV and STD Division, PHLS Communicable Disease Surveillance Centre, with the PHLS Syphilis Working Group. *Report to the National Screening Committee. Antenatal syphilis screening in the UK—a systematic review and national options appraisal with recommendations*. London: Public Health Laboratory Service, 1998. <http://www.phls.co.uk/publications/syphil-1.pdf>

3 Doherty L, Fenton K, Jones J, et al. Evidence for increased transmission of syphilis among homosexual men and heterosexual men and women in Europe. *Eurosurveillance Weekly* 2000;4:50.

4 Fenton KA, Nicoll A, Kinghorn G. Resurgence of syphilis in England: Time for more radical and nationally co-ordinated approaches. *Sex Transm Infect* 2001;77:309–10.

5 Egglestone SI, Turner AJL (for the PHLS Syphilis Serology Working Group). Serological diagnosis of syphilis. *Commun Dis Public Health* 2000;3:156–62.

6 UK National Screening Committee, Department of Health (England) and Public Health Laboratory Service. *NHS Screening Standards for Infectious Diseases in pregnancy*. London: National Screening Committee, 2002. http://www.nsc.nhs.uk/antenatal_screen/antenatal_screen_ind.htm

7 Clinical Effectiveness Group 2001 National Guidelines on the Management of Early Syphilis. Medical Society for the Study of Venereal Diseases 2001 (consultation version) www.mssvd.org.uk/PDF/CEG2001/earlysyphilis%200701%20rev%200901b.pdf

8 Connor N, Roberts J, Nicoll A. Strategic options for antenatal screening for syphilis in the United Kingdom: a cost effectiveness analysis. *J Med Screen* 2000;7:7–13.

9 Communicable Disease Surveillance Centre. Screening pregnant women for syphilis. *Commun Dis Rep CDR Weekly* 2000;10:41:367–70.