

Antenatal Screening for Human Immunodeficiency Virus (HIV)

Guidelines	Level of Evidence	References
Early in pregnancy all women should receive appropriate written information about antenatal HIV testing and be given an opportunity to discuss it with their midwife or doctor.	IV	22
All pregnant women should be offered screening for HIV.	I IV	2 7,10,11
Pre-test and post-test counselling should be provided using locally developed guidelines and in accordance with legislation.	IV	1,11,14,18
Midwives and doctors who offer HIV testing to women should be trained in methods of pre and post-test counselling.	II IV	19 21
Informed consent should be obtained according to hospital protocols.	IV	11,14,18
Good Practice Notes		
<p>A positive result should be verified through a second blood test. Women should be notified as soon as the result is verified and offered post-test counselling. The diagnosis should be delivered personally in a sensitive, supportive manner, allowing sufficient time for questions. Results should never be communicated by telephone, answering machine or through a receptionist. During post-test counselling, women's understanding of a positive diagnosis should be explored and further discussion of features of the illness, diagnostic procedures and medical care may be necessary. Referrals to clinical, social and welfare services should be offered and women should know how to access support groups.</p>		

Aim

The aim of these guidelines is to assist midwives and doctors in the detection of mothers who are Human Immunodeficiency Virus (HIV) positive to decrease the incidence of vertical transmission.

Evidence

HIV is a viral infection that can be transmitted to the unborn baby. The prevalence of HIV amongst pregnant women in Australia is unknown (but is estimated at 0.23 per 1,000). The incidence of HIV testing is increasing (from 20 per cent in 1994 to 33 per cent in 1999) mainly due to an increase in the universal offer of testing amongst obstetricians and GPs¹. Recognised risk factors include women who have a history of IV drug taking or sexual partners who have injected drugs or have HIV, and/or residence in a country where HIV is endemic².

RANZCOG recommends all women be offered HIV testing after appropriate counselling. In contrast, the Australian National Council on AIDS, HCV and Related Diseases (ANCAHRD) advocate the selective offer of testing. In Australia it appears approximately half of practitioners offer HIV testing to all pregnant women in their care. The vast majority of these women are tested. The other half of practitioners offer testing on the basis of exposure assessment or on request, and as a result, only a small minority of women undergo testing. The prospect of universal screening in Australia has raised concerns about cost-effectiveness, testing without informed consent, provision of pre- and post-test counselling and discrimination of women found to be positive in a population¹.

There is now sound evidence that early detection and management of HIV in mothers decreases the rate of vertical transmission of HIV to the newborn and horizontal transmission to sexual partners. Zidovudine, Nevirapine and delivery by elective caesarean section appear effective in decreasing the risk of mother-to-child transmission of HIV. Breastfeeding appears to increase the risk of mother-to-child transmission²⁻¹⁰. The incidence of false positive results has been reduced by new testing procedures to the point where the sensitivity and specificity of the combined EIA and Western blot test are at least 99 per cent and 99.99 per cent respectively. The false negative rate is 0.6 per 100,000 people tested. Incorrect results occur mainly because of specimen handling and laboratory errors¹¹. Studies from the UK and US have shown the universal offer of screening to be cost-effective^{12,13}.

Recent evidence-based guidelines from the UK, US and Canada support the universal offering of HIV screening to pregnant women as selective screening fails to identify a significant proportion of HIV-positive women^{11;14-17}. Guidelines also suggest women who test

HIV negative but have high-risk behaviour should be encouraged to avoid further exposure and retest in the third trimester¹¹. A US review of legal considerations in HIV screening concluded that physicians are likely to be considered negligent if an HIV infected baby is born to a woman who was not offered testing, or if testing is done without documenting consent¹⁸.

Australian law requires that women receive pre-test counselling for HIV testing by a registered medical practitioner or trained midwife (*Health Act 1958*, Act No 6270/1958:86-87) and post-test counselling must be offered to women who test positive. However, compliance with this legislation varies widely. Canadian Medical Association guidelines also recommend pre-test counselling should be offered to all pregnant women. If women agree to the test, staff should record informed consent. Information regarding the test and consequences of testing positive should be consistent and women who test positive should have easy access to counselling and physicians expert in management of HIV^{11,12}. The evidence available indicates counselling and testing for HIV infection should be performed as early as possible in pregnancy^{11,12}.

A growing body of literature examines methods of offering HIV screening tests. Level II evidence from the UK demonstrated that the routine offer of HIV testing was not time consuming, required no extra staff and was positively endorsed by most women when offered by midwives trained in the use of a printed discussion protocol. The same study group compared an 'opt out of routine screening' strategy with an 'opt in to screening' strategy and found that the women were significantly less anxious and more knowledgeable about the effects of antiviral treatment when the opt out strategy was used¹⁹. Other studies of lesser evidence have demonstrated similar findings, suggesting that both training in techniques of 'how to ask' and a positive attitude to HIV testing by staff offering the test increases uptake while making no significant difference in the length of booking appointments^{20,21}.

Methods of Search and Appraisal

These strategies were used to search and appraise evidence relating to antenatal detection and treatment of HIV.

I. Search on Defined Questions (December 2000)

A research team from the Department of Perinatal Medicine of Royal Women's Hospital used the OVID interface to search Medline (January 1980 to December 2000), CINAHL (April 1982 to December 2000) and Best Evidence (January 1991 to December 2000). Search terms used were HIV, Human Immunodeficiency Virus, Acquired Human Immunodeficiency Virus and Pregnancy. The Cochrane Database (2000 Issue 3) was also searched. The following questions were addressed:

1. What is the evidence that detection and management of HIV in mothers decreases the rate of vertical transmission of HIV to the newborn?
2. Is universal testing for HIV recommended above selective testing for HIV?
3. When, how and by whom should HIV testing be offered to women?

The search retrieved 204 citations. Bibliographies were then reviewed to identify any additional studies. The reviewers identified 25 key citations for appraisal in consultation with the steering group. These included one Level I, two Level II, two Level III-2, one Level III-3 and 19 Level IV studies/documents. The coordinator searched grey literature and journals for additional evidence published between January and August 2001.

No literature was identified that compared the rate of uptake on the offer of testing by midwives to the offer of testing by doctors.

II. Consultation with Experts to Identify Evidence and Practice Wisdom

References

1. Spencer JD, Dore G, Tibbitts D, Tippett C, Mead C, Kaldor J. *Review of antenatal HIV and hepatitis C virus (HCV) screening policy and practice in Australia*. Proceedings of the 12th Australasian Society for HIV Medicine Conference, Melbourne 12-14 October 2000, Abstract 108. Level IV
2. Brocklehurst P. Interventions aimed at decreasing the risk of mother-to-child transmission of HIV infection. [Review] [14 refs] Cochrane Database of Systematic Reviews [computer file] (2):CD000102, 2000. Level I
3. Connor EM, Sperling RS, Gelber R, et al. Reduction of maternal-infant transmission of human immunodeficiency virus type 1 with zidovudine treatment. Pediatric AIDS Clinical Trials Group Protocol 076 Study Group. [see comments] *New England Journal of Medicine* 1994;331:18:1173-80. Level III-1
4. Kuhn L, Stein ZA. Mother-to-infant HIV transmission: timing, risk factors and prevention. [Review] [197 refs] *Paediatric and Perinatal Epidemiology* 1995;9:1-29. Level IV
5. Peckham C, Gibb D. Mother-to-child transmission of the human immunodeficiency virus. [Review] [57 refs] *New England Journal of Medicine* 1995;333:5:298-302. Level IV
6. Anonymous. Recommendations of the US Public Health Service Task Force on the use of zidovudine to reduce perinatal transmission of human immunodeficiency virus. *MMWR* 1994;43:RR-11:1-20. Level IV
7. The European Collaborative Study. Therapeutic and other interventions to reduce the risk of mother-to-child transmission of HIV-1 in Europe. *BJOG* 1998;105:7:704-709. Level IV
8. The International Perinatal HIV Group. The mode of delivery and the risk of vertical transmission of human immunodeficiency virus type 1-a meta-analysis of 15 prospective cohort studies. [see comments] *New England J of Medicine* 1999;340:13:977-87. Level III
9. Minkoff H, Willoughby A. The future of prenatal HIV testing. [Review] [36 refs] *Acta Paediatrica Supplement* 1997;421:72-7. Level IV
10. McCormick MC, Davidson EC Jr, Soto MA. Preventing perinatal transmission of human immunodeficiency virus in the United States. Committee on Perinatal Transmission of HIV. *Obstetrics and Gynaecology* 1999;94:5 Pt 1:795-8. Level IV
11. Samson L, King S. Evidence-based guidelines for universal counselling and offering of HIV testing in pregnancy in Canada. *CMAJ* 1998;158:1449-57. Level IV
12. Postma MJ, Beck EJ, Mandalia S, Sherr I, Walters MD, Houweling H, Jager JC. Universal HIV screening of pregnant women in England: cost-effectiveness analysis. *BMJ* 1999;318:1656-60. Level IV
13. Immergluck LC, Cull WL, Schwartz A, Elstein AS. Cost-effectiveness of universal compared with voluntary screening for human immunodeficiency virus among pregnant women in Chicago. *Pediatrics* 2000;105:4:E54. Level IV

14. Canadian Medical Association Counselling Guidelines for HIV testing 1995 CMA online <http://www.cma.ca/cpgs/hiv> Level IV
15. Unlinked Anonymous Surveys Steering Group (UASSG). *Prevalence of HIV and hepatitis infections in the United Kingdom 1999*. London; Department of Health, Public Health Laboratory Service, Institute of Child Health, Scottish Centre for Infection and Environmental Health, 2000. Level III-2
16. Simpson WM, Johnstone FD, Goldberg DJ, Gormely SM, Hart GJ. Antenatal HIV testing: assessment of a routine voluntary approach. *BMJ* 1999;318:1660-61. Level III-3
17. Chew CB, Downie JC, Cunningham AL. Unlinked anonymous screening of antenatal patients for antibody to human immunodeficiency virus type 1 (HIV-1). *MJA* 1994;160:11:693-6. Level III-2
18. Grimes RM, Richards EP, Helfgott AW, Erikson NL. Legal considerations in screening pregnant women for human immunodeficiency virus. [Review] [24 refs] *AJOG* 1999;180:2 Pt 1:259-64. Level IV
19. Simpson WM, Johnstone FD, Boyd, FM et al. Uptake and acceptability of antenatal HIV testing: randomised controlled trial of different methods of offering the test. *BMJ* 1998;316:262-7. Level II
20. Dennison B, Kennedy J, Tilling K, Wolfe CD, Chrystie IL, Banatvala JE. Feasibility of named antenatal HIV screening in an inner city population. *AIDS Care* 1998;10:3:259-65. Level IV
21. Rips J. Establishing a successful HIV counselling and testing service. *Obstetrics and Gynecology Clinics of North America* 1997;24(4):873-897. Level IV
22. Lumley J. *What do women want? Satisfaction with care in pregnancy, birth and the postnatal hospital stay. A summary of current evidence to April 2000*. Unpublished report commissioned by The Royal Women's Hospital, Melbourne from the Centre for Studies on Mother's and Children's Health, La Trobe University, Melbourne 2000. Level IV