

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. Women should know how to contact community support groups.

Aim

The aim of these guidelines is to assist midwives and doctors to appropriately detect hepatitis C virus (HCV) infection in pregnant women. This guideline is based on a review of the evidence published since January 2000 and is an update of the original 3 Centres guideline published in 2001.

Introduction

Hepatitis C is a blood borne viral liver infection. The 3 Centres Collaboration contracted the Royal Women's Hospital (RWH) Clinical Practice Improvement Unit (CPIU) to conduct a comprehensive search and critical appraisal of publications addressing the topic of "Hepatitis C", published between January 2000 and March 2005, to inform the proposed review of the 2001 3 Centres Consensus Guidelines on Antenatal Care.

Research questions addressed

1. Is universal testing for Hepatitis C recommended above selective testing for Hepatitis C?
2. If selective testing is recommended, what risk factors should be considered during history taking?
3. Does the detection of Hepatitis C during pregnancy assist with long term management?

Evidence

The 3 Centres Collaboration did not examine the evidence on whether pregnant women should be offered HCV testing at all. The Guideline Advisory Group noted the relatively low prevalence of hepatitis C in the Australian population, the lack of evidence that antenatal treatment is of benefit to mother and baby in terms of reduction in disease severity, and the fact that there are no safe treatments to use in pregnancy. Therefore, HCV screening does not meet all of the criteria for a useful screening test.³ The case for screening rests on the argument that identifying HCV in pregnant women benefits women, their families and

their carers. The reasons to offer testing are to:

- provide ongoing advice
- appropriate referral
- follow up babies of infected mothers³

The 3 Centres Collaboration concluded:

- In general terms, women with hepatitis C are at increased risk of cirrhosis, hepatocellular carcinoma and autoimmune disorders. Alcohol consumption exacerbates hepatic dysfunction in infected women.³
- Infants should be followed to 18 months of age to determine HCV infection status.^{24,25,26}
- 2/3 of those infants with virus detected after delivery are expected to clear the virus by 2 years of age.¹⁸
- 70% of infants born to hepatitis C infected women, in one small series, demonstrated hepatic dysfunction but the long term outcomes of this have not been reported.²⁴
- Pregnancy may worsen liver function in women and this should be discussed with the woman. There is no satisfactory evidence currently available on whether treatment is advisable prior to, during or after pregnancy.²²
- There is no evidence to suggest that HCV detection during pregnancy assists with long term management of either mother or baby. However, there is a significant paucity of evidence in this regard.

Search on Defined Questions

1. Is universal testing for Hepatitis C recommended above selective testing for Hepatitis C?

The prevalence of hepatitis C in the Australian antenatal population is low (13/1000 women)^{11,5} as are rates of vertical transmission (~6%)¹³. At least 40% of cases have no identifiable risk factors.⁵ Currently, there is insufficient evidence regarding possible effectiveness and cost effectiveness of universal screening. There are no available safe treatments in pregnancy. Techniques to reduce vertical

transmission, such as caesarean section, have not yet been adequately evaluated. There is insufficient evidence that antenatal treatment / intervention is of benefit to mother or baby in terms of reduction in disease severity.

Recommendation (Grade B)

In concordance with current international evidence based guidelines, universal testing for hepatitis C is not recommended above selective testing in pregnant women.

2. If selective testing is recommended, what risk factors should be considered during history taking?

If selective testing is recommended, the risk factors for HCV that should be considered during history taking should include:

High risk

- Injecting drug use (~40% of infected mothers)
- A period of incarceration (~67% of women in Victorian prisons being hepatitis C antibody positive)²⁷
- A history of transfusion of blood products prior to HCV screening becoming available in 1990, particularly in groups who received multiple transfusions. The prevalence of antibodies to HCV in haemophiliacs is 60-80%.
- A history of migration from a country with a high rate on endemic HCV (southern European, African and Asia/Pacific countries).

Moderate risk

- Newborns of HCV positive mothers
- Persons undergoing chronic haemodialysis
- Recipients of blood from untested donors
- Recipients of organ transplants
- Parenteral exposure through the use of contaminated or inadequately sterilized instruments/needles in medical/dental procedures

Low risk

- Persons engaging in high risk sexual activity
- Sexual partners of HCV positive individuals
- Rituals (such as circumcision, scarification, excision), traditional medicine (such as blood letting), other skin breaking activities (such as ear and body piercing)

- Tattoos and body piercing
- Household contact³.

The Guideline Advisory Group identified the risk factors from the above list which are relevant to the Victorian antenatal environment. Given the prevalence of body piercing amongst women, this low risk factor was excluded to avoid almost universal testing.

It is important to note that 40-50% of women infected with HCV have no identifiable risk factors.⁵

At present, RANZCOG recommends the selective offer of testing to pregnant women with a higher exposure to HCV and that pre-test counselling is given.¹ A survey of Australian practitioners suggested the universal offer of HCV testing to pregnant women has increased, particularly amongst private obstetricians and public hospitals. Those who selectively offer Hepatitis C testing, test only a small proportion of women in their care whereas those who universally offer, test the majority of women. It appears that a significant proportion of practitioners do not obtain specific consent or offer women pre-test counselling, particularly when the offer is routinely made .

3. Does the detection of Hepatitis C during pregnancy assist with long term management?

The long-term outcomes of maternally transmitted HCV infection remain unknown, but in babies who are infected at birth the lifetime risk of severe liver disease is likely to be high. Intra-familial transmission of HCV is uncommon. The rate of transmission to the infant does not appear to be influenced by method of feeding, the HIV status of the mother, or type of delivery.

Evidence-based guidelines from Canada recommend that pre-test counselling should establish the woman's perceived risk of infection, ascertain her level of knowledge concerning transmission and prevention, and assess symptoms. Her midwife or doctor should explain the tests and discuss how she might react should the test be positive.

Women found to be HCV positive should be advised to avoid alcohol, check with their doctor before starting medications, avoid blood or other tissue donation and avoid sharing toothbrushes, razors or other articles which may have blood on them. Women should be aware that the risk of sexual transmission of HCV is low.

Recommendation (Grade C)

Based on current evidence the detection of hepatitis C during pregnancy does not assist with long term management.

Methods of Search and Appraisal

Search strategy

The OVID interface was used to search the following electronic databases:

- MEDLINE: 2000 – May 2005
- CINAHL: 2000 – May 2005
- EBM Reviews: 2000 – March 2005
- Cochrane Database: 2005 Issue 2

Review of article citations and Cochrane Library references for additional citations. Guidelines developed by specific Colleges of Obstetricians and Gynaecologists were searched including: Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG); Royal College of Obstetricians and Gynaecologists (RCOG) Society of Obstetricians and Gynaecologists Canada (SOGC), and American College of Obstetricians and Gynecologists.

Guidelines developed by other groups were searched for via the internet, on the United States National Guidelines Clearinghouse.

Search terms

The search was conducted using and combining various terms for the following:

- Hepatitis C
- Screen
- Pregnancy

Key citation selection

The 135 citations identified in the initial search were triaged into those possibly containing, or those unlikely to contain relevant evidence or authoritative opinion. 44 citations were retrieved and further screened to identify those studies with respect to quality of methodology and relevance to Australian obstetric practice. As a result of this exercise 26 articles were classified as key citations, and were subjected to systematic critical appraisal by the project team and those not meeting the criteria were discarded.

The evidence within these 26 key citations fell into the following levels

Level I evidence: 0 publications

Level II evidence: 0 publications,

Level III evidence: 14 publications, and

Level IV evidence: 12 publications.

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