Management of Hepatitis B in Pregnancy at Geelong Hospital:
a retrospective review

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Background

• Population 220,000 → 30,000 of non-English speaking background
• One of top ten regional and rural settlement areas for refugees (2010 → '11)
  - More than 1500 refugees over the past 5 years
• Many from hepatitis B endemic countries where most hepatitis B infections occur by mother-to-child transmission
• Growing number of pregnant women infected with hepatitis B attending the Geelong Hospital for antenatal care and delivery

• Rates of perinatal transmission of hepatitis B in an Australian setting
  - A prospective, observational study
  - 138 babies born to HBsAg-positive mothers tested for HBV infection at around 9 months perinatal transmission identified in 4/138 (3%)
  - All four mothers had very high viral load (> 10⁸ copies/mL) and were HBeAg +ve

• Role of antiviral therapy during pregnancy
  - Antivirals recommended from approx. 30 weeks if HBV DNA > 10⁷ IU/mL

Background – RANZCOG guidelines

Routine screening for Hepatitis B virus in pregnancy

HBsAg and HbsAb

HBsAg positive

Antenatal
• Hep B viral load, HBsAg, HbsAb & LFTs
• Referral to Chronic Hepatitis Clinical Service
• Consideration of antenatal antiviral therapy

Postnatal
• Hepatitis B vaccine at birth (within 24 hrs)
• Hepatitis B immunoglobulin (HBIG) at birth (preferably within 12 hours and certainly within 48 hours)

• Are hepatitis B infected pregnant women attending the Geelong Hospital receiving optimal care?

1. Royal Australian and New Zealand College of Obstetricians and Gynaecologists clinical guidelines on management of Hepatitis B in pregnancy, 2013
2. ASID Management of perinatal infections 2014
4. Wiseman, MJA, 2009

• Inadequate assessment and management of pregnant women infected with hepatitis B in a number of Victorian hospitals
  - Total 398 deliveries to HBsAg-positive women across three different hospitals
  - < 20% had viral load
  - < 33% assessed for HBsAg
  - < 18% referred for specialist care

Aims

1. Review the current routine investigation and management of hepatitis B infected pregnant women at Geelong Hospital over a five year period

1. Determine the ethnicity of hepatitis B infected women who delivered at Geelong Hospital over this period

1. Determine whether there is a need to revise current routine care and management of hepatitis B positive pregnant women at the Geelong Hospital to:
   a. meet RANZCOG guidelines
   b. ensure inclusivity of all ethnic groups

Method

Ethics approval by The Barwon Health Human Research Ethics Committee

Geelong Hospital Birthing Outcomes System (BOS)
Obtained a list of all pregnant women identified as being hepatitis B infected who delivered at Geelong Hospital over a five year period 30/6/2008 – 30/6/2013

MR 62 pregnancy care record
Assessed which of the pregnancies from the the BOS list were documented as being hepatitis B infected at antenatal care

Hepatitis B serology
Confirmed which of the pregnancies from the BOS list were to HBsAg positive women

Method

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Method

Pregnancies to confirmed HBsAg-positive women

Geelong Hospital medical records

Demographic and clinical details

- Country of birth
- Primary language spoken
- Whether English spoken
- Hepatitis B tests performed and LFTs
- Attendance at antenatal care and liver clinic
- Infant hepatitis B vaccine and immunoglobulin administration
- Data were entered onto an Excel spread sheet and analysed descriptively

Results

Birthing Outcomes System (BOS)
82 deliveries to women categorised as hepatitis B infected

MR 62 pregnancy record
30/82 documented as being hepatitis B infected

1 HBsAg –ve but HBsAb +ve

33 confirmed HBsAg positive
1 HBsAg –ve but HBscorAb +ve

47 did not have HBsAg detected on serology

1 HBsAg –ve but HBsAb +ve

33 pregnancies to confirmed hep B infected women

1 with indeterminate hepatitis B status

Data collected for total 34 pregnancies
Results – ethnicity and language

- 28/34 non-Australian born
- 14/34 required use of an interpreter

Country of birth
- China (8)
- Australia (6)
- Turkey (2)
- Benin (2)
- Philippines (2)
- Thailand (2)
- Papua new guinea (1)
- Fiji (1)
- Vietnam (1)
- Liberia (1)
- Congo (1)
- Albermarle (1)
- India (1)
- Indonesia (1)
- Sudan (1)
- Cook Islands (1)

n = 34

Results – maternal investigations per pregnancy

Number of pregnancies

HBsAg 18
HBsAb 10
HBcAb 13
HBeAg 2
HBeAb 2
Hep B viral load 29
LFTs 34

Assessed this pregnancy
Not assessed this pregnancy
If not assessed this pregnancy, assessed at another time

n = 34

Discussion

In summary
- Of the 34 pregnancies analysed:
  - 28 non-Australian born
  - 28 had HBeAg assessed
  - 13 had viral load assessed
  - 8 were referred to liver clinic
  - 33 attended antenatal care
  - 33 and 31 of 33 live births received Hepatitis B vaccine and immunoglobulin respectively

- Birthing Outcomes System database entry did not always correlate with serology

Limitations
- Possibility of additional HBsAg-positive women not included in the study
- Reliance on retrospective data collection

Discussion

Geelong Hospital liver clinic is liaising with pregnancy care to clarify the referral and management pathway for hepatitis B infected pregnant women

Proposals
1. Hepatitis B package to be provided through pregnancy care for all HBsAg positive women containing:
   - Signed blood pathology slip, Hepatitis B in pregnancy information sheet (discussed in presence of interpreter where required), liver clinic referral form
2. Pregnancy care will book women straight into liver clinic
3. A hepatology tab added to the mother’s maternity care folder and the folder made accessible to liver clinic staff
   - Folder will accompany patient to all hospital appointments, whether pregnancy care, liver clinic, delivery or postnatal
4. Women with high hepatitis B viral load cared for as high risk to ensure adequate medical supervision

Discussion

Future studies
- Separate study analysing the rates of hepatitis B transmission in the babies born to women investigated in this audit
- 12-18 months post implementation of new referral pathway we propose to repeat the clinical audit
Conclusion

• There is room for improvement in the care of hepatitis B infected pregnant women at the Geelong Hospital
  - Accurate and complete entry of data into the Birthing Outcomes System
  - Routine referral to liver clinic for specialist care and implementation of the RANZCOG guidelines, including routine comprehensive hepatitis B testing

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References