

## PARVOVIRUS B19 SCREENING AND MANAGEMENT IN PREGNANCY

*This LOP is developed to guide clinical practice at The Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP*

### 1. Aim

Appropriate management of pregnant woman exposed to or infected with parvovirus B19

### 2. Patient

Pregnant woman

### 3. Staff

- Medical and midwifery staff
- Allied health staff

### 4. Equipment

- Nil

### 5. Clinical Practice

#### Screening for and Prevention of Parvovirus infection

- Educate pregnant women who are in close contact with children and other people with acute Parvovirus B19 infections regarding avoiding contact with respiratory secretions :
  - do not put the child's dummy / spoon in mouth
  - do not allow the child to cry into your face (cuddle infant facing away from you)
  - diligently wash your hands after wiping the infant's nose or touching any of their respiratory secretions
- Give woman the patient information leaflet:  
[http://www.health.nsw.gov.au/Infectious/factsheets/Factsheets/parvovirus\\_b19.PDF](http://www.health.nsw.gov.au/Infectious/factsheets/Factsheets/parvovirus_b19.PDF)
- Do **not** offer routine screening for parvovirus B19 in pregnancy
- Recommend Parvovirus B19 IgG/IgM antibody testing to pregnant woman:
  - who has had significant exposure to or has symptoms (rash or arthropathy) of Parvovirus B19 infection (significant exposure means close personal contact with an infected person, not just in the same room as them)
  - or whose fetus exhibits hydrops fetalis without a known cause

#### Diagnosis

- Reassure woman who is Parvovirus B19 IgM negative and IgG positive that she is immune to the virus and her baby is unlikely to be affected
- Advise woman who is Parvovirus B19 IgM positive and IgG negative that this result may indicate acute infection or may be a false positive. Recommend repeat serology in 1-2 weeks
- Repeat serology for woman who is Parvovirus B19 IgM and IgG negative in one to two weeks if exposure occurred within the last 1 to 3 weeks. If exposure is ongoing, advise woman that serology should be repeated every 2 weeks
- Advise and manage woman who is both Parvovirus B19 IgM and IgG positive, as below

#### Management

- Discuss with the woman who may have acute Parvovirus B19 infection that most Parvovirus B19 infections in pregnancy are benign. There is no proven risk of parvovirus-induced congenital anomalies, but there is a small risk of fetal loss/ hydrops/ anaemia.
- Refer woman who may have acute Parvovirus B19 infection to a Maternal Fetal Medicine specialist for counselling, further surveillance and appropriate intervention.

## PARVOVIRUS B19 SCREENING AND MANAGEMENT IN PREGNANCY cont'd

- Arrange ultrasounds for woman with acute Parvovirus B19 infection looking for evidence of fetal anaemia and hydrops fetalis. Ultrasound surveillance should usually be 1-2 weekly, for up to 8-12 weeks after the time of the infection.
- Consider in utero fetal transfusion if the fetus's middle cerebral artery (MCA) peak systolic velocity (PSV) is >1.5MOM, or if there is evidence of hydrops remote from term. Delivery may be an option closer to term
- Arrange neonatal review after birth or antenatally as appropriate
- Send fresh placenta to pathology if hydrops fetalis or fetal anaemia is detected

### 6. Documentation

- Medical records

### 7. Educational notes

- While there are some typical features of Parvovirus B19 infection, 25-50% of people will either be asymptomatic or suffer a flu-like syndrome (fevers, malaise, myalgias) <sup>1</sup>. The symptoms of Parvovirus B19 infection usually appear 10-14 days following infection <sup>7</sup>
- The specific features of Parvovirus B19 infection are a rash and arthralgias. Joint symptoms often involve the hands, wrists, knees and feet <sup>10</sup>. Arthralgias tend to resolve over a period of 2-3 weeks. In children the appearance of a facial rash (erythema infectiosum) is the most common clinical manifestation of Parvovirus B19 infection however this rash is not commonly seen in the adult population <sup>1</sup>.
- Parvovirus B19 is primarily transmitted via respiratory secretions and viraemia begins approximately 6 days after exposure and lasts for 1 week in immunocompetent individuals. The clinical course is generally self-limited. An infected person is contagious before the onset of symptoms and ceases to be contagious once typical features such as rash or arthralgia are present <sup>2</sup>
- Over 60% of women of childbearing age are immune to parvovirus
- In a prospective study of 1018 pregnant women with acute Parvovirus B19 infection, 6.3% of pregnancies resulted in fetal death. Fetal death only occurred when the infection happened prior to 20 weeks of gestation and appeared to be most common when diagnosis was made in the first trimester <sup>3</sup>
- In addition to causing fetal loss, parvovirus is cytotoxic to fetal red blood cell precursors and may cause anaemia, thrombocytopenia and hydrops <sup>3,7</sup>. Given this risk, parvovirus infections can be especially dangerous to patients who have thalassaemia, sickle cell or are immunodeficient <sup>11</sup>
- The observed rate for fetal hydrops in women with known parvovirus infection prior to 20 weeks is 4.2% <sup>4</sup>. The overall risk of parvovirus B19 induced hydrops fetalis is 3.9% after maternal infection during pregnancy, with a maximum of 7.1% when infection occurred between 13 and 20 weeks of gestational age <sup>3,7</sup>
- The median interval between diagnosis of maternal infection and hydrops was 3 weeks. 50% of cases occurred 2 to 5 weeks after maternal infection and 93% occurred within 8 weeks of maternal diagnosis <sup>3</sup>
- Women at increased risk of parvovirus infection include mothers of pre-school and school aged children, childcare workers and school teachers <sup>5</sup>
- Children treated with intrauterine transfusion for parvovirus B19 infection may be at increased risk of neurodevelopmental impairment. This may be a reflection of the severe anaemia itself rather than the intrauterine transfusion <sup>6</sup>
- It is not practicable to prevent exposure at home. Exclusion from work of pregnant school teachers or child care workers is not recommended during a parvovirus epidemic (nor is exclusion of infected children) <sup>8</sup>

## PARVOVIRUS B19 SCREENING AND MANAGEMENT IN PREGNANCY cont'd

### 8. RELATED POLICIES / PROCEDURES / CLINICAL GUIDELINES / LOCAL OPERATING PROCEDURES

- Maternal Fetal Medicine referral

### 9. RISK RATING

- Medium

### 10. NATIONAL STANDARD

- Standard 5 – Comprehensive Care

### 11. References

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- 9 Lamont R, Sobel J, Vaisbuch E, Kusanovic J, Mazaki-Tovi S, Kim S, Uldbjerg N, Romero R. Parvovirus B19 infection in human pregnancy. *BJOG* 2011;118:175–186

### REVISION & APPROVAL HISTORY

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