

Maternal sepsis (Puerperal fever) due to Group A Streptococcus – Information for clinicians

Sepsis associated with pregnancy, delivery, and post partum is often insidious in onset but can progress very rapidly. Early recognition of the signs and symptoms of maternal sepsis, urgent transfer to hospital and prompt, aggressive treatment of sepsis will save lives. Educate your postnatal patients about good personal and perineal hygiene to minimise the risk of maternal sepsis.

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What is group A streptococcal maternal sepsis?

The leading cause of severe, life-threatening maternal sepsis is group A Streptococcus (GAS).

A wide range of other organisms including group B,C and G Streptococcus, Staphylococcus aureus, Escherichia coli, Enterobacter spp, and Chlamydia trachomatis may also cause maternal sepsis. Over recent decades a resurgence of invasive GAS has been observed in industrialised countries around the world. In NSW, clusters of maternal sepsis have been associated with GAS.

Maternal sepsis can occur antenatally; however most morbidity and mortality is experienced in the postpartum period (when it is known as puerperal sepsis). 5-30% of the community are asymptomatic carriers of group A streptococci, usually on the skin or in the throat. [1] Cases of maternal sepsis are often preceded by a sore throat or an upper respiratory infection. [2]

Group A Streptococcus (GAS) is typically acquired in the community, although it may be hospital acquired. In hospitals, invasive GAS outbreaks have been linked to asymptomatic health care workers. [3]

While most postpartum deaths associated with GAS occur after operative delivery, healthy women with uncomplicated pregnancy and delivery are still at risk of sepsis.

What are the clinical features of GAS maternal sepsis?

The main symptoms and signs are:

- Fever of more than 38°C
- Tender, sub-involuting uterus (has not returned to its normal size following childbirth)
- Chills and general malaise
- Lower abdominal pain
- Diarrhoea (can indicate pelvic sepsis)
- Purulent and foul-smelling lochia (vaginal discharge after delivery)
- Vaginal bleeding.

Features of severe sepsis include:

- Hypothermia, tachypnoea, and neutropenia
- Signs of shock such as hypotension and sustained tachycardia (>100 bpm).

Who is at risk of GAS maternal sepsis?

Risk factors related to childbirth include:

- Caesarean section
- Protracted labour and/or prolonged rupture of membranes
- Frequent vaginal examinations in labour
- Traumatic delivery
- Retained placental products
- A sore throat or upper respiratory tract infection in the woman or close contacts, including health care workers
- Poor personal or perineal hygiene in the early post-natal period
- Australian Aboriginal women have higher rates of GAS maternal sepsis.

Other risk factors include:

- Chronic disease
- Immunosuppression
- Injecting drug use.

How is GAS maternal sepsis diagnosed?

Early involvement of microbiologists and infectious disease specialists in the management of suspected GAS maternal sepsis is recommended.

Diagnostic tests may include:

- Perineal, high vaginal, endocervical swabs for culture and sensitivity
- Blood cultures(at least 2 sets)
- Mid stream urine.

Typing (M type) should be requested on GAS isolates associated with a maternal sepsis cluster.

How is GAS maternal sepsis treated?

Sepsis in pregnancy is often insidious in onset but can progress very rapidly. Regular monitoring of pulse, blood pressure, respiratory rate may assist with early identification

If sepsis is suspected in a patient in the community, urgent referral to hospital is indicated.

In hospital, high-dose intravenous broad spectrum antibiotics should be started immediately after obtaining appropriate cultures; septicaemia can develop rapidly and has a high mortality rate. Treatment should not be delayed unduly by collection of clinical samples and can be adjusted after results of investigations become available.

For treatment options refer to Therapeutic Guidelines: antibiotic or seek advice from a microbiologist or infectious disease specialist. (Note: if GAS is isolated IV penicillin is the treatment of choice).

Aggressive fluid resuscitation and close monitoring of fluid balance may be required; early involvement of critical care staff may be necessary.

How is GAS maternal sepsis prevented?

Inform pregnant and post-natal patients about the risks and signs and symptoms of genital tract infection, and the need to seek advice early if concerned or unwell.

Educate women about the importance of good personal hygiene in the peri-natal period, including the importance of washing hands (for at least 15 seconds with soap and running water) before and after using the toilet or changing sanitary pads.

Good hygiene is particularly important if the woman, her family or close contacts have a sore throat or upper respiratory infection.

Antibiotic prophylaxis is recommended for the following clinical scenarios: [2]

- Peri-abortion(including termination of pregnancy)
- Preterm and/or prolonged rupture of membranes
- Caesarean section operations (pre-incision)
- Anal sphincter tear repair (intra operative and post operative).

A throat swab should be taken when a pregnant woman presents with a sore throat and there should be a lower threshold for antibiotic treatment. [4]

Invasive GAS outbreaks have been linked to asymptomatic health care workers. All health care professionals who care for pregnant and recently delivered women must adhere to infection control guidelines [5], and comply with the 5 moments of hand hygiene initiative. [6]

What is the public health response?

Puerperal sepsis and invasive group A streptococcus are not notifiable in NSW. However, the public health unit should be contacted on **1300 066 055** if a potential outbreak or cluster of infections is identified. A cluster may be considered as two or more cases occurring in a defined group linked by time and place.

References

1. Health Protection Agency. Interim UK guidelines for management of close community contacts of invasive group A streptococcal disease, Group A Streptococcus Working Group. Commun Dis Public Health. 2004; 7: 354-361.
2. Centre for Maternal and Child Enquiries. CMACE Emergent Theme Briefing #1: Genital Tract Sepsis. September 2010.
3. Health Protection Agency. Guidelines for the investigation, control and prevention of spread of group A streptococcal (GAS) infection in acute healthcare settings in the United Kingdom.
4. Centre for Maternal and Child Enquiries. The Eighth Report of the Confidential Enquiries into Maternal Deaths in the United Kingdom. BJOG. 2011; 118(supp 1): 1-203
5. NHMRC (2010) Australian Guidelines for the Prevention and Control of Infection in Healthcare. Commonwealth of Australia.
6. Clinical Excellence Commission, NSW Health. [Hand hygiene program](#).

Further information

Also note the NSW Health guideline Maternity - [Maternal Group B Streptococcus \(GBS\) and Minimisation of Neonatal Early-Onset GBS Sepsis \(GL2016_021\)](#).

Seek specialist infectious diseases and obstetric advice.