South Australian Perinatal Practice Guidelines

Peripartum prophylactic antibiotics

Introduction

- Infection during pregnancy and the postpartum period may be caused by a combination of organisms, including aerobic and anaerobic cocci and bacilli
- Procedures, such as caesarean section and manual removal of the placenta, increase the risk of infectious morbidity
- Prophylactic antibiotics and standard infection prevention practices can reduce the risk of postpartum infectious morbidity (WHO 2000)
- Women, who are suspected of or diagnosed as having an infection, should receive antibiotic treatment specific to their infection

Manual removal of placenta

- Manual removal of the placenta is associated with an increased rate of postpartum endometritis. Antibiotic prophylaxis is not of proven benefit but is currently recommended. Single dose prophylaxis is recommended
- If possible, prophylactic antibiotics should be given 30 minutes before starting the procedure

Recommended antibiotic treatment:

- Single IV dose of Ticarcillin-clavulanate 3.1g (Timentin®)
- If Ticarcillin-clavulanate is not available, give single IV doses of:
  - Ampicillin (or amoxicillin) 2 g
  - plus
  - Gentamicin 5 mg / kg
  - plus
  - Metronidazole 500 mg

Allergy to penicillin

- Single IV doses of both Lincomycin 600 mg and Gentamicin 5 mg / kg

Caesarean section

- Single dose prophylactic antibiotic cover should be administered to all women having a caesarean section (Thomas and Paranjothy 2001)
- The optimal timing for the administration of prophylactic antibiotics is before skin incision (Kaimal et al. 2008; Costantine et al. 2008; Walsh 2010)

Recommended antibiotic treatment

- Cephazolin 1 gram IV before skin incision
- If allergic to cephalosporins: - single doses of both Lincomycin 600 mg and Gentamicin 5 mg / kg IV

3rd or 4th degree perineal tears

- There are no randomised controlled studies comparing antibiotics with placebo for prevention of infection in third or fourth degree perineal tears (Buppasiri et al. 2005)
- Infection carries a high risk of breakdown of the repair resulting in anal incontinence and fistula formation. Therefore, broad-spectrum antibiotics are recommended during and after the repair (RCOG 2007)

ISBN number: UNKNOWN
Endorsed by: SA Maternal & Neonatal Clinical Network
Contact: South Australian Perinatal Practice Guidelines workgroup at: cywhs.perinatalprotocol@health.sa.gov.au

Government of South Australia
SA Health

Peripartum prophylactic antibiotics

Recommended antibiotic treatment

- At the time of repair, a single IV dose of Ticarcillin-clavulanate 3.1g (Timentin®)
- If Ticarcillin-clavulanate is not available, give single IV doses of both Cephazolin 1 gram and Metronidazole 500 mg

Allergy to penicillin

Single IV doses of both Lincomycin 600 mg and Gentamicin 5 mg / kg

Postpartum cover

- Commence oral Augmentin Duo® (amoxicillin 500 mg and clavulanic acid 125 mg) 12 hourly with meals for 5 days
- If allergic to penicillin, use both
  - oral Ciprofloxacin 250 mg 12 hourly for 5 days
  - plus
  - oral Clindamycin 450mg 8 hourly for 5 days

Breastfeeding: All these drugs are acceptable

Antibiotic prophylaxis for women with cardiac disease

- Antibiotic prophylaxis in labour is not recommended for:
  - Isolated secundum atrial septal defects
  - Mitral valve prolapse
  - Valvular heart disease
  - Hypertrophic cardiomyopathy
  - Cardiac pacemakers or implanted defibrillators
  - Previous coronary bypass grafts or coronary stents
  - Previous rheumatic fever without valvular dysfunction
  - Complete surgical or device closure of atrial septal defect, ventricular septal defect or patent ductus arteriosus more than 6 months after closure
  - Physiological, functional or innocent murmurs
- Antibiotic prophylaxis in labour is not recommended for uncomplicated vaginal births
- Intrapartum antibiotic prophylaxis is recommended for vaginal birth complicated by amnionitis (suspected or proven) or prelabour rupture of membranes, when one of the following cardiac conditions is present:
  - Prosthetic heart valve
  - Complex congenital heart disease
  - Past history of endocarditis
  - Surgically constructed systemic-pulmonary shunt, or conduit

Recommended antibiotic treatment

- Gentamicin 2 mg / kg IV as a single intrapartum dose given as soon as possible in labour
- plus
- Ampicillin [or amoxycillin] 2 g IV as a stat dose as close as practical to the time of birth

Government of South Australia
SA Health

ISBN number: UNKNOWN
Endorsed by: SA Maternal & Neonatal Clinical Network
Contact: South Australian Perinatal Practice Guidelines workgroup at: cywhs.perinatalprotocol@health.sa.gov.au

Peripartum prophylactic antibiotics

Allergy to penicillin

- Gentamicin 2 mg / kg IV as a single intrapartum dose given as soon as possible in labour
- plus
- Vancomycin 1 g IV, administered slowly (over at least one hour) and repeated after 8 hours if birth has not occurred

Monitoring gentamicin / tobramycin levels

- In the absence of a history of renal disease, short term treatment (2-3 days) with Gentamicin or Tobramycin does not require levels
- If levels are required, available evidence suggests the area under the curve (AUC) of plasma aminoglycoside concentration versus time may be a better predictor of toxicity and efficacy than the traditional peak and trough monitoring
- Two blood samples taken at one hour and six hours after the first dose are required to calculate the AUC from these 2 plasma concentrations and dosage modifications recommended as necessary
    - It is important to record the exact time of taking the blood samples on the request forms / collection tubes
- Repeat levels are not usually required unless treatment is prolonged, in which case they should be done after 5-7 days. Potential efficacy or toxicity concerns may require earlier repeat levels

Government of South Australia
SA Health

ISBN number: UNKNOWN
Endorsed by: SA Maternal & Neonatal Clinical Network
Contact: South Australian Perinatal Practice Guidelines workgroup at: cywhs.perinatalprotocol@health.sa.gov.au

Peripartum prophylactic antibiotics

References

1. World Health Organisation (WHO). Managing complications in pregnancy and childbirth. A guide for midwives and doctors. Antibiotic therapy [document online] 2000 [cited 2009 April 15]; [2 screens]. Available from: URL: http://www.who.int/reproductive-health/impac/Clinical_Principles/Antibiotic_C35_C36.html
2. Hofmeyr GJ, Smaill FM. Antibiotic prophylaxis for cesarean section. *Cochrane Database of Systematic Reviews* 2002, Issue 3. Art. No.: CD000933. (Level I). Available from URL: http://www.mrw.interscience.wiley.com.ezproxy.flinders.edu.au/cochrane/clsysrev/articles/CD000933/frame.html
3. Hopkins L, Smaill F. Antibiotic prophylaxis regimens and drugs for caesarean section (Cochrane Review). *Cochrane Database of Systematic Reviews* 1999, Issue 2. Art. No.: CD001136. Chichester, UK: John Wiley (Level I). Available from URL: http://www.mrw.interscience.wiley.com.ezproxy.flinders.edu.au/cochrane/clsysrev/articles/CD001136/frame.html
4. Kaimal AJ, Zlatnik MG, Cheng YW, Thiet MP, Connatty E, Creedy P, Caughey AB. Effect of a change in policy regarding the timing of prophylactic antibiotics on the rate of postcesarean delivery surgical-site infections. Am J Obstet Gynecol 2008; 199: 310e1-310e5.
5. Costantine MM, Rahman M, Ghulmiyah L, Byers BD, Longo M, Wen T, Hankins GDV, Saade GR. Timing of perioperative antibiotics for caesarean delivery: a metaanlaysis. Am J Obstet Gynecol 2008; 199: 301e1-301e6.
6. Walsh CA. Evidence-based caesarean technique. Current Opinion in Obstet and Gynecol 2010; 22:110-115.
7. Thaker R, Sultan AH. Management of obstetric anal sphincter injury. The Obstetrician and Gynaecologist 2003; 5: 72 – 8.
8. Royal College of Obstetricians and Gynaecologists (RCOG). Management of third and fourth-degree perineal tears following vaginal delivery, RCOG Green-top Guideline No. 29. London: RCOG Press; 2007.
9. Thomas J, Paranjothy S. Royal College of Obstetricians and Gynaecologists Clinical Effectiveness Support Unit. National sentinel caesarean section audit report. RCOG Press; 2001.
10. Buppasiri P, Lumbiganon P, Thinkhamrop J, Thinkhamrop B. Antibiotic prophylaxis for fourth-degree perineal tear during vaginal birth. *Cochrane Database of Systematic Reviews* 2005, Issue 4. Art. No.: CD005125. (Level I). Available from URL: http://www.mrw.interscience.wiley.com.ezproxy.flinders.edu.au/cochrane/clsysrev/articles/CD005125/frame.html
11. Chongsomchai C, Lumbiganon P, Laopaiboon M. Prophylactic antibiotics for manual removal of retained placenta in vaginal birth. *Cochrane Database of Systematic Reviews* 2006, Issue 2. Art. No.: CD004904. (Level I). Available from

ISBN number: UNKNOWN
Endorsed by: SA Maternal & Neonatal Clinical Network
Contact: South Australian Perinatal Practice Guidelines workgroup at: cywhs.perinatalprotocol@health.sa.gov.au

Government of South Australia
SA Health

Peripartum prophylactic antibiotics

URL:
http://www.mrw.interscience.wiley.com.ezproxy.flinders.edu.au/cochrane/clsysrev/articles/CD004904/frame.html

Abbreviations

WHO	World Health Organisation
IV	Intravenous
g	Gram(s)
mg	Milligram(s)
kg	Kilogram(s)
et al	And others
RCOG	Royal College of Obstetrics and Gynaecology
AUC	Area under the curve

Version control and change history

PDS reference: OCE use only

Version	Date from	Date to	Amendment
1.0	26 Oct 06	21 Apr 09	Original version
2.0	21 Apr 09	23 Aug 10	Reviewed
3.0	23 Aug 10	14 Sept 10	Reviewed
4.0	14 Sept 10	current	

ISBN number: UNKNOWN
Endorsed by: SA Maternal & Neonatal Clinical Network
Contact: South Australian Perinatal Practice Guidelines workgroup at: cywhs.perinatalprotocol@health.sa.gov.au

Government of South Australia
SA Health