INFECTION PREVENTION & ANTIBIOTIC STEWARDSHIP IN OBSTETRIC HDU N ICU

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Conclusion

- *”The high antibiotic resistance observed in ICU patients justifies using regimens combining several broad-spectrum antibiotics, even when the presumed infection probability is low, because initial inappropriate therapy has been linked to poor prognoses.*

- *More than its economic impact, this ‘spiraling empirical’ practice increasingly leads to undue antibiotic administration to many ICU patients -paradoxically causing the emergence of more antibiotic-resistant microorganisms causing infections that, in turn, are associated with heightened mortality and morbidity”*

Conclusion

- *The good intentions of obstetricians to reduce maternal and fetal/neonatal infectious complications are unfortunately impacting on the microbial milieu for the next generation..*

- *The growing concern related to the short - and long - term consequences of antibiotic administration requires better diagnostic strategies,, as well as new strategies for the risk stratification of pregnant women..*

- *For every pregnant woman,, we should weigh the risks and benefits of antibiotics for both her and her fetus/newborn/infant and encourage patients to be part of a shared decision making process..*

TABLE 3 Infectious causes of sepsis in pregnancy and postpartum

Infection	Pathogens
Bacterial – common	Group A-beta-haemolytic Streptococcus (GAS) pyogenes *Escherichia coli* Group B Streptococcus *Klebsiella pneumoniae* *Staphylococcus aureus* *Streptococcus pneumonia* *Proteus mirabilus* Anaerobic organisms
Bacterial – less common	*Haemophilus influenza* *Listeria monocytogenes* *Clostridium* species *Mycobacterium tuberculosis*
Viral	Influenza Varicella zoster virus Herpes simplex virus Cytomegalovirus

area. Sepsis during pregnancy will require maternal investigations

TABLE 6 Recommendations for antimicrobial treatment of sepsis with unknown source

	Australian and New Zealand antibiotic regimen	Alternative for penicillin hypersensitivity†
Community-acquired sepsis (source not apparent)‡	**Aus:** amoxicillin/ampicillin 2 g IV Six-hourly PLUS gentamicin 4–7 mg/kg (first dose) IV§ PLUS metronidazole 500 mg IV 12-hourly **NZ:** cefuroxime 1.5 g IV eight-hourly PLUS gentamicin 4–7 mg/kg (first dose) IV§ PLUS metronidazole 500 mg IV 12-hourly At risk of MRSA sepsis (based on previous swabs/cultures and local epidemiology): ADD vancomycin 25–30 mg/kg (loading dose) IV§ At risk of Group A Streptococcal (GAS) sepsis: ADD clindamycin 600 mg IV eight-hourly, PLUS consider normal immunoglobulin 1–2 g/kg IV, for up to two doses during the first 72 h	Clindamycin 600 mg IV eight-hourly PLUS gentamicin 4–7 mg/kg (first dose) IV (severe hypersensitivity) Cefazolin 2 g IV six-hourly PLUS gentamicin 4–7 mg/kg (first dose) IV§ PLUS metronidazole 500 mg IV 12-hourly (mild-moderate hypersensitivity)
Hospital-acquired sepsis (source not apparent)	**Aus:** piperacillin 4 g + tazobactam 0.5 g IV eight-hourly AND consider gentamicin 4–7 mg/kg (first dose) IV§ (if local epidemiology suggests Gram-negative aminoglycoside susceptibility) **NZ:** cefuroxime 1.5 g IV 8-hourly PLUS gentamicin 4–7 mg/kg (first dose) IV§ PLUS metronidazole 500 mg IV 12-hourly At risk of MRSA sepsis (based on previous swabs/cultures and local epidemiology or if line sepsis) ADD vancomycin 25–30 mg/kg (loading dose) IV§ At risk of multidrug-resistant Gram-negative organisms: use as a SINGLE AGENT meropenem 1 g IV eight-houly At risk of Group A Streptococcal (GAS) sepsis: ADD clindamycin 600 mg IV eight-hourly PLUS consider normal immunoglobulin 1–2 g/kg IV, for up to two doses during the first 72 h	Severe: ciprofloxacin 400 mg IV eight-hourly PLUS vancomycin 25–30 mg/kg IV§
Consider influenza	Oseltamivir 75 mg BD or Zanamivir two inhalations (each 5 mg) twice daily for five days	

†NZ has increasing Group B strep resistance to clindamycin and macrolides – if penicillin hypersensitivity seek expert advice for best agent.
‡NZ regime does not cover listeria – if suspected use a penicillin as per Australian regime.
§Use local protocols for gentamicin and vancomycin dosing and monitoring. Once daily dosing of gentamicin in pregnancy and postpartum can be used and in pregnancy results in levels below the toxicity threshold for more hours per day than in eight-hourly dosing.
BD, twice daily; IV, intravenous; MRSA, methicillin-resistant *Staphylococcus aureas*.

Take home message

- Identifying bacterial infection promptly
- Choice of Antibiotic –Empiric therapy
- Dosage, route, administration
- Tailoring drug to bug
- De-escalation of Abx when feasible
- Shortening duration of therapy
- Liase with your microbiologist/physician/intensivist