Neonatal Infection

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Infection

- An ever increasing problem in the sick and vulnerable neonate
- Predisposition lies in the reduced immune defences of the neonate – both specific and non-specific immunity
- Specific immunity involves the action of immunoglobulins (IgG, IgA and IgM) and T lymphocytes
Classification of infection

- Classified according to when acquired
- 3 types of neonatal infection ..... 
  - 1) Intrauterine (Congenital) TORCH
  - 2) Intrapartum (up to 1\textsuperscript{st} week)
  - 3) Post-natal (nosocomial) – from 7 days of life

- Hanley, 2006
Congenital (TORCH) 

- Toxoplasmosis
- Other – Syphilis, Varicella, HIV, parainfluenza
- Rubella
- Cytomegalavirus
- Herpes (type 2)
- “TORCH”
Intrapartum infection

- Group B streptococcus is the most common (Bedford-Russell & Plumb, 2006)
- 60% is early onset
- 20% fatal (when there is septicaemia)
- Mimics RDS, collapse / shock, grunting, apnoea
- Treated with penicillin
- Other types – Listeria and Herpes
Acquired Post natal (late onset)

- Nosocomial infection
- Staphylococcus – most common plus gram negative bacteria (E Coli)
- Viral
- Fungal
- Meningitis
Maternal signs

- Maternal History & presence of infection
- Chorioamnionitis
- Fever
- Raised CRP
- Prolonged rupture of membranes (PROM)
- Fetal distress
- Foul / cloudy liquor
Fetal signs

- PRIOR TO DELIVERY.....
- Sustained fetal tachycardia > 160 bpm
- Preterm delivery – common cause is infection
- LBW
- Low apgar (<5 at 1 minute)
Neonatal signs

- RESPIRATORY
- Tachypnoea
- Apnoea
- Hypoxia
- Nasal flaring
- Grunting
- Irregular respirations
Neonatal signs

- CARDIOVASCULAR
  - Hypotension
  - Metabolic acidosis
  - Tachycardia

- TEMPERATURE INSTABILITY
  - Newborn temperature <36 OR pyrexial
Neonatal signs

- **GASTROINTESTINAL**
  - Vomiting, Diarrhoea, Abdominal distension, poor feeding

- **NEUROLOGICAL**
  - Activity decreased or lethargy, Irritability
  - Tremor or seizure, Hyporeflexia or hypotonia
  - High pitched cry, Fontanelle full
Neonatal signs

- SKIN
- Pallor or skin mottling
- Petechiae or purpura
- Cold or clammy skin
- Cyanosis
- Jaundice
Laboratory signs

White cell count < 5000 OR > 25000
Neutrophil count < 1000
Blood culture
Arterial blood gas
Lumbar puncture
Urinalysis (> 3 days old)
Electrolytes
CRP
Management

- Observe for signs and risks
- ‘Universal precautions’- prevention
- Minimise risk of infection
- Septic screen if infection suspected – full or partial
- Treat with antibiotics if required based on cultures / CRP.

Kenyon et al, 2005; NICE, 2012
Further Reading

- RCOG (www.rcog.org.uk) Guidelines
- Immunisation Schedule [https://www.gov.uk/government/collections/immunisation]