The Unwell Neonate
RDN - Sept 2008
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NETS

Ways of looking at the problem
- Diagnosis
- Severity
- Timing of presentation

Diagnosis
- Congenital abnormality
- Medical problems
- Surgical conditions
- Other …

Diagnosis
- Congenital abnormality
  - Pre-natal diagnosis → in-utero transfer
  - Most major malformations detectable
  - Exceptions:
    - Congenital heart disease where no reason for antenatal screening
    - Oesophageal atresia / TOF
    - ‘Non-structural’ conditions (haematological, metabolic conditions etc.)

Congenital heart disease
- Blue? (despite oxygen)
- Shocked? (without reason)
- Examination:
  - Respiratory distress (enough to explain \(O_2\) requirement?)
  - Praecordium / Pulses / Liver
  - Saturations
- Investigations
  - CXR / Blood gas / ECG
- Maximise oxygenation
- Treat shock
Oesophageal atresia
- Oral secretions / Intolerant of feeds
- Failure to pass a gastric tube
- FGB stops at ~ 11cm from lips
- CXR with ‘air’ contrast
- Pouch tube; 10-15° head-up
- NBM/IV

Diagnosis
- Congenital
- Medical
  - Prematurity
  - Respiratory distress syndrome (HMD)

Diagnosis
- Congenital
- Medical
  - Prematurity
  - Respiratory distress syndrome (HMD)

Diagnosis
- Congenital
- Medical
  - Prevalence 6%
  - Twins, past history, IVF
  - Antenatal transfer
    - Steroids, AB, Tocolysis
    - Perinatal Advice Line
    - 1300 36 2500 #2

Diagnosis
- Congenital
- Medical
  - Prematurity
  - Respiratory
    - HMD
    - Meconium aspiration syndrome (MAS)

Diagnosis
- Congenital
- Medical
  - Prematurity
  - Respiratory
    - RDS
    - MAS
    - Pneumonia
    - Pneumothorax
Diagnosis

- Congenital
- Medical
  - Prematurity
  - Respiratory
    - HMD
    - MAS
    - Pneumothorax
    - Pneumonia
  - Persistent pulmonary hypertension (PPHN)
- Prematurity
- Respiratory
  - HMD
  - MAS
  - Pneumothorax
  - Pneumonia
  - PPHN
  - Hydrops fetalis
  - Sepsis

Sepsis

- Often subtle
- Early or late in presentation
- Consider
  - UTI
  - Septicaemia
  - Meningitis
  - Pneumonia
- Culture, WCC (often low; left shift)
- Treat
  - Ampicillin 100mg/kg/d & Gentamicin 5mg/kg/d

Diagnosis

- Congenital
- Medical
- Surgical
  - Airway
    - Robin Sequence
    - Choanal atresia

Diagnosis

- Congenital
- Medical
- Surgical
  - Airway
  - Respiratory
Diagnosis

- Congenital
- Medical
- Surgical
- Airway
- Respiratory
- Cardiac

Diagnosis

- Congenital
- Medical
- Surgical
- Airway
- Respiratory
- Cardiac
- Gut

Diagnosis

- Congenital
- Medical
- Surgical
- Airway
- Respiratory
- Cardiac
- Gut
- Other
  - Metabolic
    - Hypoglycaemia
    - Infant of the diabetic
    - Inborn errors of metabolism
  - Haematological
  - Dysmorphic

Severity

- Critically ill
- Moderate unwell
- Unwell at all?

Clinical evaluation

- Detailed history
- Observation
- Physiological measurements
- ‘Apgar’ score
- Review plan

Timing of presentation

- Ante-natal
- Post-natal
  - Immediate
  - Delayed
- Post-discharge
Three commandments

- Warm, Pink & Sweet
  - Normothermic
  - O₂ Sat ~ 95%
  - BSL > 2.5

ABC

- A - Airway
- B - Breathing
- C - Circulation
- D - Drugs
- E - Environment

Equipment

- Infant warmer
- Bag
  - Self-inflating
  - T-piece
- Mask 0, 1
- Laryngoscope & straight blades: sizes 0, 1
- ETT 2.5, 3, 3.5, 4.0
- Suction FG 12 (short)
- Gastric tube (Long FG 8)

Desirable

- T-piece ventilator (Neopuff™)
- Incubator
- Infusion pumps
- Digital camera / email facilities

Calling for help

- NETS Line 1300 36 2500
  - Press 1 for neonatal (paediatric) retrieval
  - Press 2 for obstetric transfer
- Fax 1300 36 2498
- help@nets.org.au
- Drug calculator
- No need to ‘find a bed’

Information

- Patient’s location and caller’s name
- Patient’s name, age / DOB, weight
- Provisional diagnosis
- History and current clinical condition
  - Vital signs HR, RR, T, O₂ sat. CR or BP
- Treatment instigated and planned
- Other vocal (± regional) resources?
- Destination preference
Arranging the environment

- Large working area
- Radiant warmer
- Power points
- \( \text{O}_2 \), air & suction
- Trolley, rubbish & sharps bins
- Phone near patient (cordless, if possible)
- X-ray facilities

Packed to go…

Summary

- Anticipation & prevention
- Diagnostic challenges
- Severity
- Timing of presentation
- Help!

Questions?

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