Large for Gestational Age (LGA) Infants

Definitions

- Large for Gestational Age (LGA): a baby with a birth weight > 90th percentile for gestational age. In term babies, this amounts to a birthweight > 4000g.
- Macrosomia: a baby which has a large body and increased body mass.

LGA and macrosomia are synonymous terms, and include Infants of Diabetic Mothers (IDM’s)

Causes

- Maternal diabetes
- Genetics: “big parents - big baby”
- Excessive maternal weight: “fat mother - fat baby”
- Rare genetic disorders e.g. Beckwith-Wiedemann Syndrome

Complications and Risks

- Antenatal and Intrapartum risks:
  - Increased stillbirth rate (8x in IDM’s)
  - Obstructed labour and shoulder dystocia
  - Foetal distress
- Neonatal:
  - Birth trauma (fractures of clavicle/humerus; brachial plexus injury; hypoxic-ischaemic damage)
- Hypoglycaemia (in all, but especially in IDM’s)
- In addition, in IDM’s:
  - Immature lungs with RDS
  - Polycythaemia
  - Neonatal Jaundice
  - Cardiac defects
    - Asymmetrical ventricular septal hypertrophy with left and/or right HOCM
    - VSD
  - Rare: sacral agenesis; microcolon
  - Long-term: increased risk of type I and type II diabetes in baby

IDM’s are BIG but IMMATURE

Management

1) Delivery is high risk: expect and manage complications

2) Examine for:
- Birth trauma
- Dystrophia
- Macrosomia
- Plethora
- Cardiac murmurs
- RDS
3) Look for and manage hypoglycaemia, with reference to the “Neonatal Hypoglycaemia” guideline.

- Record all readings and actions on “Hypoglycaemia Management Chart” (Form Paed/19).

- Feed within 30 minutes of birth (unless severe RDS or intrapartum hypoxia):
  - breast; or
  - formula 10 ml/kg (only if medically indicated). Try NOT to give formula to a breast feeding baby, unless no alternative exists.

- Low blood sugar readings on a glucometer MUST be confirmed by a laboratory test.

- Do a blood glucose 1 hr post-delivery:
  - if ≥ 2.5 mmol/l
    - continue frequent breast feeding 2-3hrly (or formula, according to “Feeding and Fluid Management” guideline)
    - continue 3hrly blood glucose tests for 24 hours
  - if 1.8 - 2.5 mmol/l
    - feed as above and check blood glucose again after 30 minutes. Repeat until ≥ 2.5 mmol/l
  - if < 1.8 mmol/l
    - insert drip
    - take blood for lab serum glucose and FBC from cannula before connecting drip
    - give bolus 3ml/kg Neolyte (10% dextrose) and then run drip as follows:
      - If breast feeding: continue drip at 30ml/kg day and continue breast 2-3hrly. Wean drip slowly if blood sugar is maintained > 2.5mmol/l. If hypoglycaemic, increase drip rate to 60-80mls/kg/day and continue breast feeding.
      - If formula feeding: calculate formula feeds at 60ml/kg/day and divide 2-3hrly feeds, while running drip at 2ml/hr. Wean off drip if blood sugar is maintained > 2.5mmol/l.
    - if persistently < 1.8 mmol
      - give GLUCAGON 0.2mg/kg and change drip to 15% dextrose *
      - if still < 1.8mmol/l, take blood for insulin, cortisol, growth hormone and TFT, then start HYDROCORTISONE 5mg/kg stat, then 10mg/kg/dose 6H IV

* To make a 15% IVI solution: add 20ml 50% dextrose to a 200ml bag of Neolyte