Outline

- Metabolic screening programme
- Audiology screening
- Antenatal risk factors for preterm delivery
- Antenatal renal pelvis dilatation
- Jaundice
- Kernicterus
- Vit D
Background

- 2007 65,602 livebirths (NZ)
- 1.2% (~700) <32wks gestation
  - 90% survival
  - 13% disability
    - Cerebral palsy
    - Visual/hearing deficit
    - Developmental delay
Newborn Metabolic Screening

Guthrie Card
Newborn Metabolic Screening Programme

- LMC responsible for information, consent and obtaining sample
- Collect at 48 – 72hrs
- 28 conditions screened
  - 14 amino acid disorders (PKU, MSUD)
  - 9 Fatty acid oxidation disorders
  - Cystic fibrosis
  - Hypothyroidism
  - Congenital Adrenal hyperplasia
  - Galactosaemia
  - Biotinidase deficiency
NMSP contd

- 45 infants diagnosed each year
- Commonest: Hypothyroidism  15/yr
- Cystic fibrosis   8/yr
If your patient has an abnormal result
- Repeat test rate is 1 in 50 (~1300/yr)
- Majority will have normal test on repeat
- Mild abnormality. You will be advised by letter
- Significant abnormality. LMC/Paed will be phoned
- Ensure repeat test is completed asap
- Any concerns ring NTC 0800 522 7587 or Paed
Audiology Screening
Audiology Screening

- NZ 1986-99 107 children (<18yrs) notified as deaf (National Audiology centre)
  - Mean age 28mths
  - 30% age <12mths
  - Waikato 1.9/1000 livebirths

- Why screen?
  - Language development
  - Treatments available
Audiology

- Waikato pilot study
  - Newborn testing at age 48hrs (>37wk gest)
  - aABR
  - Begun Feb 2004
Audiology
Audiology

- Results
  - 28,000 infants screened (97% of eligible)
  - 483 (1.7%) referred for followup (Diagnostic audiology)
  - 111 (0.4%) hearing loss confirmed
  - 23 hearing aids / 8 cochlear implants
  - 4/1000 livebirths (cf 1.9 prescreening)
- Hawkes Bay began in 2006, others following this year
Antenatal Risk Factors For Prematurity
Antenatal risk factors for prematurity

- ~10% of births <37wks gestation
- Multiple birth/ART
- Previous preterm birth
- Lack of antenatal care
- Lower SES
- Maori/Pacific Islanders
- Mat age <17yrs or >40yrs
Antenatal risk factors for prematurity

- PPROM 50-60% deliver within 1wk
  - Erythromycin reduces risk of delivery within 48hrs. Also reduces mortality and sign morbidity
- PPROM occurs in 20-50% of preterm deliveries (cf 3% term)
- Illicit drug use
- Vaginal bleeding in 2^{nd}/3^{rd} trimester
Antenatal risk factors for prematurity

- Smoking reduces Bwt by ~ 200g at term
  - increased preterm delivery
- Alcohol 1-3 drinks/day reduces bwt by 100g at term
  - Speech/language delays
  - No PTL
Antenatal Risk factors for Prematurity

● What can I do?
  ● Encourage antenatal care
  ● Refer for Specialist assessment if;
    ● PPROM
    ● Previous prem
    ● Multiple birth
Antenatal Fetal Renal Pelvis Dilatation
Antenatal Renal Pelvis Dilatation
Antenatal fetal renal pelvis dilatation

- Why worry?
  - Marker for renal tract pathology
- 18-24 wk gestation scan
- 1% pregnancies (>5mm dilatation)
  - 2/3 5-10mm. No significant renal tract pathology
  - 1/3 >10mm. 2/3 of this group were found to have significant renal tract pathology postnatally
Antenatal Fetal Renal Pelvis Dilatation

- GP guidelines (postnatal)
  - <7mm. No action
    - 7-10mm. US at 5wks
    - >10mm. US at 7 days and 3mths
  - Further investigation depends upon US findings
  - Discuss with Paediatrician or Paed Surgeon
  - Based on WWH guidelines
Jaundice. When to worry?
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- Too early  <24hrs
- Too High  Age dependent nomograms
  - Advise threshold  24-48hrs  >180umol/L
  - >48hrs  10% Bwt(gm)
  - (eg Bwt 3000g = SBR 300)
- Sick infant
- Prolonged  >2wks in term infant
  - Conj/unconjugated SBR
  - Thyroid function tests
SBR Nomogram
Kernicterus

- High unconjugated bilirubin
  - Basal ganglia and auditory pathway damage
  - Seizures, deafness, mental retardation
- Risk factors
  - 34-37wk gestation
  - Breast fed
  - Asian (G6PD deficiency)
- Increasing incidence
- 2 cases in Waikato in 10yrs
Vitamin D
Vitamin D

- Preterm infants have reduced Ca, P, Vit D stores
- Diuretic, steroid treatment demineralises bone
- Increased fracture risk
- Prem's: Vit D until ALP < 400 and oral intake > 500ml formula or solid
- Immune role?
Vitamin D

- Preterm infants require Vitamin D supplementation
- Vitadol C 0.3ml daily
  - (monitor ALP)
- One alpha drops (2mcg/ml) 1 drop BD
  - (Monitor serum Calcium/ALP)
The End