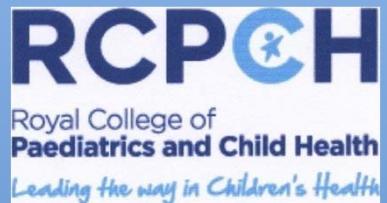


Neonatal Standards of Care

Thermoregulation

Treatment of sepsis



Objectives

- Review neonatal standards of care
- Emphasise the importance of warmth
 - Kangaroo Mother care KMC
- Discuss severe neonatal infections
 - Diagnosis
 - Treatment
- Review use of common antibiotics in neonates

Neonatal Standards of Care

- Clean warm environment
- Delayed cord clamping
- Ability to maintain temperature at all times
- Staff and carers have good hand hygiene
- Provision of appropriate nutrition – promotion of exclusive breast feeding
- Vitamin K
- Inclusion of mother (carer) as partner in care

Hygiene and Warmth – *at delivery*

Hygiene

1. Hand hygiene of attendants
(Soap and Water/ Alcohol Hand Rub)
2. Clean Surface for Delivery
(Decontaminated, Cleaned and Disinfected with 0.5% Chlorine)
3. Sterile instrument to cut Cord
4. Clamp or Cord Tie to tie cord
5. Clean Cloth to wrap baby and mother

Warmth

1. Warm delivery room
2. Immediate drying
3. Warm resuscitation
4. Weigh baby and label
5. Warm transportation
(skin-to-skin)
6. Skin-to-skin contact

Hygiene and Warmth – *after delivery*

Hygiene

1. Hand washing before handling the baby
2. Exclusive breastfeeding
3. Keep the cord clean and dry
4. Use a clean cloth as a diaper/nappy
5. Hand wash after changing diaper/nappy

Warmth

1. Breastfeeding
2. Bathing postponed by at least 24 hours
3. Appropriate clothing and bedding
4. Mother and baby roomed in together
5. Training and awareness on unnecessary exposure

Thermoregulation

Term babies

- Most term babies will be warm enough with clothes, a hat and a light blanket
- If the temperature goes above 37.5 °C remove some wraps and ensure good hydration.
 - Consider sepsis.
 - In general anti-pyretics are not used

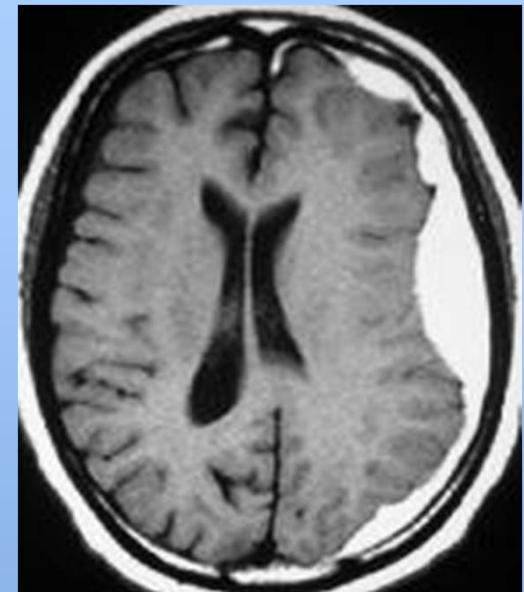
Preterm babies

- Encourage skin to skin contact and kangaroo care
- Avoid drafts
- Provide adequate clothing and covers



Vitamin K

- Severe Vitamin K deficiency can result in haemorrhage & death
- 1mg Vitamin K IM given at birth prevents in neonates of all ages (0.5mg if weight < 1.5kg)

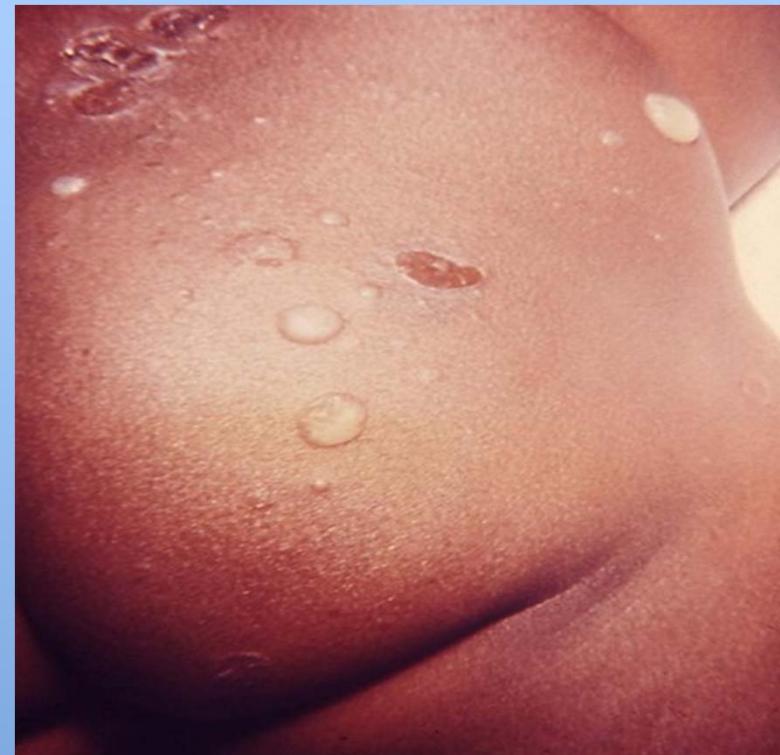


Cord Care

- If infant born stable and active, clamp and cut the cord 1 minute after delivery
- Keep the cord clean
- No need for chlorhexidine on the cord unless working in an area where other more dangerous things may be put on the cord. In this case mothers may accept chlorhexidine as a safer alternative

Neonatal Infection – *Is it severe?*

Would you admit this baby?



Neonatal Sepsis

Systemic Signs

- Feeding difficulty
- Lethargic, floppy
- Convulsions
- Temperature $\geq 37.5^{\circ}\text{C}$ or $< 35.5^{\circ}\text{C}$
- Respiratory distress
 - fast breathing $\geq 60 \text{ bpm}$
 - Grunting
 - Severe chest indrawing
 - Nasal flaring
- Circulation
 - Grey or pale
 - Long capillary refill
- Jaundice

Localized Signs

Neonatal Sepsis

These signs and symptoms indicate the need for antibiotics

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Localized Signs

- Many or severe skin pustules
- Periumbilical Flaring (Redness)
- Umbilicus draining pus
- Bulging fontanelle
- Painful joints, joint swelling, reduced movement and irritability
- Severe abdominal distention or vomiting

Neonatal Sepsis

- Maternal risk factors for sepsis:
 - Intrapartum maternal fever
 - Membranes ruptured more than 18 hours before delivery
 - Foul smelling amniotic fluid

What information would you need to know to pick the best antibiotic?

- Organisms?
- Antibiotic sensitivity?
- Is there meningitis?



Rational Use of Antibiotics

In a large study of infections acquired in the community:

552 cases of proven infection in first 2 weeks of life

Among these infections there was:

- **94% sensitivity to Ampicillin / Gentamicin**
- **82% sensitivity to Penicillin / Gentamicin**
- 77% sensitivity to Cefotaxime

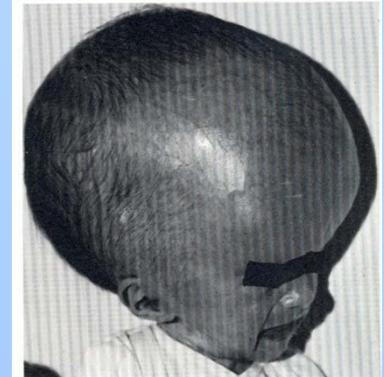
Unless you have local sensitivity data empirical treatment for neonatal sepsis should involve treatment with **Ampicillin and Gentamicin** for 7 days

MPS recommendations for neonatal sepsis

	Each dose	Frequency <7days	Frequency > 7 days	route	duration
Ampicillin	100mg	12 hrly	8 hry	lv, im	5 days
		AND			
Gentamicin	5mg/kg	24 hrly	24 hrly	lv, im	5 days
or Amikacin	15 mg/kg	24 hrly	24 hrly	lv, im	5 days

For skin sepsis with suspected Staph cloxacillin may be used instead of ampicillin

Is there meningitis?



- You will never know unless you do an LP!
 - < 30% proven cases in young infants have a bulging fontanelle / stiff neck / convulsions
- Meningitis is common in ‘neonatal sepsis’ – up to 1 in 5 babies with sepsis had meningitis in one Kenyan study (*Laving, 2003*).
- **Treatment**
 - IV Ampicillin + IV Gentamicin + IV Cefotaxime
 - Reassess therapy based on culture and antibiotic sensitivity if feasible
 - Minimum of 2 weeks if Gram +ve and 3 weeks iv or im if Gram –ve; if you don't know the organism then 3 weeks

Antibiotic doses

Important to check guidelines as doses for some antibiotics change according to:

- Weight
- Gestation
- Baby's age in days
- Severity of infection

Gentamicin

- 5mg/Kg every 24 hours
but in low birth weight babies
- 3mg/Kg every 24 hours is safer

Gentamicin toxicity

- Deafness / balance disturbance rare if dose correct
- Renal impairment, uncommon
- Both above more likely if frusemide also given, especially in high dose.
- More likely if long term use and / or renal impairment already

Supportive care of a septic neonate

- Warmth
- Respiratory support
 - O₂ if cyanosed or respiratory distress
 - CPAP if available and needed
 - Ventilation
- Intravenous fluids
 - Ng feeding with expressed breast milk
 - Consider dextrose by iv infusion
 - Consider dopamine infusion if persistently poor perfusion
- Treat jaundice with phototherapy if indicated

QUESTIONS?

Summary

- All newborns should have access to a clean, warm environment during and after delivery
- Hand washing is essential
- All newborns should get Vit K
- Need rational antibiotic use in treatment of neonatal infections. Simple antibiotics still effective.
- Always look for neonatal meningitis

ACKNOWLEDGEMENTS



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