Doncaster and Bassetlaw Paediatric Department
The PEN Issue No. 2 June 2020

Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust

Welcome to the second issue of 'The PEN' – the Paediatric Education Newsletter. This is a monthly educational bulletin of cases, clinical questions and learning points from recent teaching.

MCQs

1. Topic: Paediatric Alert

The next baby in your NIPE clinic has an antenatal diagnosis of a single umbilical artery (SUA).

You carefully review the mother's notes/ICE/K2 as always but which of the following pieces of data is key in a case of SUA?

A. Maternal Blood group **B.** Anomaly scan **C.** Maternal medications **D.** Birth centile **E.** Family History

Learning Points from this month's departmental teaching

Recurrent fever and Immunodeficiency – Simon Hardman

1. Serious, Persistent, Unusual or Recurrent infections should prompt further history and consideration of a primary immune deficiency.
2. Severe combined immunodeficiency (SCID) may present with serious infections but also failure to thrive, severe nappy rash, diarrhoea, oral thrush and persistently low lymphocytes <2x 109/L

Surgical lumps and bumps: Part 1 Inguino-scrotal and umbilical pathology – Simon Scammell

1. Refer unilateral undescended testes at 4 months of age to surgical OPT
2. Always use paraffin to protect the skin from a silver nitrate burn when treating an umbilical granuloma
3. Consider repeat examination in retractile testes to pick up an ascending testis.

Brain tumours for Paediatrician's and GP's – Kiki Karapi

1. Symptoms can frequently mimic those that occur with many common childhood conditions
2. 'Headsmart campaign' useful tool to identify those at risk. https://www.headsmart.org.uk/

MCQ Josie Murphy/Lucy Elliott
Answer = B

The majority of SUA occur in isolation. SUA is associated with chromosomal and congenital anomalies, particularly genitourinary but is not diagnostically specific or sensitive for any one condition. Whether routine screening for renal anomalies is necessary in neonates with isolated SUA is controversial however the prevalence of renal anomalies in isolated SUA is low. **Therefore, check if the anomaly scan demonstrated any other anomalies. If not a thorough examination is all that is required.**

Article Links

Do babies with isolated single umbilical artery need routine postnatal renal ultrasonography? Deshpande, S A; Jog, S; Watson, H; Gornall, A. *Archives of disease in childhood. Fetal and neonatal edition*; Jul 2009; vol. 94 (no. 4); p.F265

Is screening for renal anomalies warranted in neonates with isolated single umbilical artery? de Boom, M L; Kist-van Holthe, J E; Sramek, A; et al. *Neonatology;* 2010; vol. 97 (no. 3); p. 225-227

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Management of Severe Hyperbilirubinaemia: A Practical Perspective

Eihab Abou-Ebid

Neonatal jaundice is a leading cause for presenting to paediatric services in the first week of life worldwide. Phototherapy is a simple and effective way to reduce the bilirubin level. However, severe hyperbilirubinaemia in high risk cases is a medical emergency and needs consultant input.

What are the red flags for clinically significant Jaundice?

- Previous sibling requiring phototherapy
- Gestational age <38 weeks
- Exclusive breast feeding
- Visible jaundice before 24h
- Evidence of haemolysis

Which group of patients is at greatest risk of developing Kernicterus?

- Bilirubin above exchange transfusion level
- Rapidly rising bilirubin (8.5micromol/L/hour)
- ABO incompatibility
- Bilirubin encephalopathy at presentation.

Management:

-All patients with bilirubin above exchange levels need to be assessed for bilirubin encephalopathy.
-If clinical features suggest severe jaundice commence phototherapy whilst awaiting first SBR.
-Adequate Hydration.
💡 Think fluid one day ahead.
-Phototherapy: Evidence supports multiple phototherapy, but no data on exact number.
💡Plan for no interruption by feeds/ cares.
-Add fibro-optic phototherapy (biliblanket) to maximise area of exposure.
💡Do not use fibro-optic phototherapy as alternative to conventional phototherapy.
-Is this ABO or Rhesus incompatibility?
💡 Take samples for group and DAT at the start of phototherapy. You might need the result early on.
-Is this sepsis? Consider antibiotics.
-Monitor bilirubin: repeat 4h after starting phototherapy. The aim is for decreasing level, however there is no clear data about the optimum rate of decrease.
💡 If repeat level is not below exchange, involve the paediatric consultant in decision making.
-Immunoglobulin: for ABO/ rhesus incompatibility. 500mg/kg over 4 hours.
💡 Need to discuss with pharmacy as sometimes difficult to get hold of.
-Exchange transfusion - is the procedure likely to result in quicker reduction of bilirubin than alternatives?

Stages of Acute Bilirubin Encephalopathy

- Phase one: Lethargy, hypotonia & poor suck. Timely management can prevent long term sequela.
- Phase Two: Hypertonia, opisthotonos, high pitch cry, fever.
- Phase Three: Poor feeding, shrill cry, marked opisthotonos, muscle rigidity, seizures, coma.

Exchange transfusion Checklist:

- Discuss with parents- procedure, risks, benefit + obtain verbal consent.
- Discuss with nursing staff.
- Guidelines: review guidelines in Yorkshire and Humber ODN network: Guidelines→ Haematological→ Exchange Transfusion
- Place: Neonatal ITU/ paediatric HDU
- Availability of exchange transfusion blood: contact blood bank to establish requirements and timeframe.
- Decide which vascular access will be most appropriate.
- Locate equipment needed for exchange transfusion.
- Discuss monitoring with nursing staff. HR, BP, RR, Sats, cardiac monitor.
- Plan for laboratory monitoring.
- Plan for temperature control.
- Establish vascular access
- Allocate roles: Minimum of one nurse and one bleep-free doctor.

Is intravenous immunoglobulin superior to exchange transfusion in the management of hyperbilirubinaemia in term neonates?

Best BETs (Best Evidence Topics) - Review of available evidence, 2009
https://bestbets.org/bets/bet.php?id=1871