Paediatric Pearls

by Dr Julia Thomson, Paediatrician

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Monthly paediatric update newsletter for all health professionals working with children – put together by Dr Julia Thomson, Paediatric Consultant at Homerton University Hospital, London, UK. Housed at www.paediatricpearls.co.uk where comments and requests are welcome!

Investigating normochromic anaemia in children – think history, reticulocytes and film!

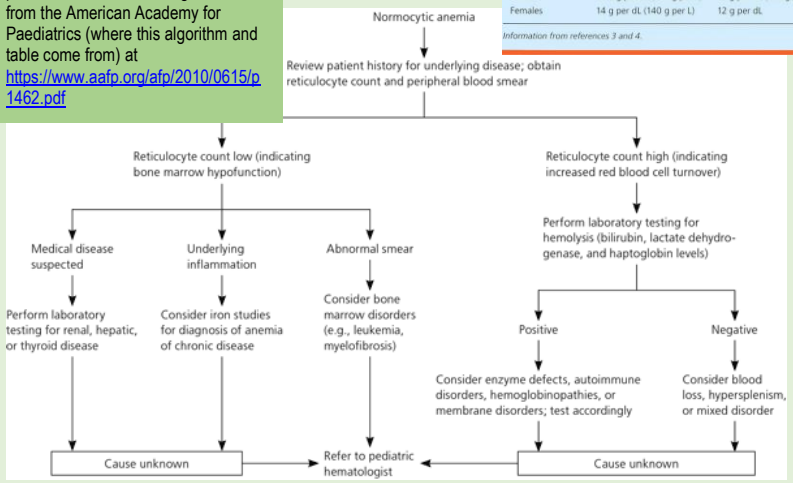
In paediatric practice in the UK, anaemia in young children is usually due either to iron deficiency, acute blood loss or underlying disorders we know about, eg. sickle cell disease, or suspect, eg. leukaemia. A well child with an Hb lower than 2SD below the mean for their age and a normal MCV can therefore present a diagnostic challenge.

Read an excellent summary of paediatric anaemias in larger font from the American Academy for Paediatrics (where this algorithm and table come from) at https://www.aafp.org/afp/2010/0615/p1462.pdf

Table 1. Age-Based Hemoglobin Levels in Children and Adolescents

Age	Mean hemoglobin level	–2 standard deviations
Birth (term infant)	16.5 g per dL (165 g per L)	13.5 g per dL (135 g per L)
1 month	13.9 g per dL (139 g per L)	10.7 g per dL (107 g per L)
2 months	11.2 g per dL (112 g per L)	9.4 g per dL (94 g per L)
3 to 6 months	11.5 g per dL (115 g per L)	9.5 g per dL (95 g per L)
6 months to 2 years	12 g per dL (120 g per L)	10.5 g per dL (105 g per L)
2 to 6 years	12.5 g per dL (125 g per L)	11.5 g per dL
6 to 12 years	13.5 g per dL	11.5 g per dL
12 to 18 years		
Males	14.5 g per dL (145 g per L)	13 g per dL (130 g per L)
Females	14 g per dL (140 g per L)	12 g per dL

Information from references 3 and 4.



ADOLESCENCE – with thanks to Dr Emma Parish, paediatric registrar currently at Homerton University Hospital, for this new series on a somewhat neglected, misunderstood and unprovided-for tribe.

Get CPD points here! https://www.e-lfh.org.uk/programmes/adolescent-health/

1. What is adolescence?

Youth and adolescence have various definitions – the WHO defines 10 – 19 years adolescence and 10 – 24 years as young people. The United Nations also recognises youth as 15 – 24 years (and in some youth charters the definition widens further to help countries identify the distinct needs of the young people living there). In the UK, paediatric services see children and young people usually up to 16-18 years old depending on the service commissioning and needs of the young person.

Adolescence is a time of rapid change with key developmental experiences:

- Physical
- Sexual maturation
- Social and economic independence
- Development of identity
- Relationships
- Abstract reasoning

An excellent document from the WHO outlines the key milestones and risk behaviours in this age group, and gives an overview of the global health needs of young people http://www.who.int/maternal_child_adolescent/documents/second-decade/en/. Worldwide, 1.2 million adolescents died in 2015. Road traffic accidents are the leading cause everywhere but, in the UK, second comes self-harm and suicide.

If you have 15 minutes, watch this fascinating TED talk by Professor Sarah-Jayne Blakemore, Deputy Director of the UCL Institute of Cognitive Neuroscience, which explains the neuronal pruning that occurs in the developing brain in adolescence compared to the adult brain: https://www.ted.com/talks/sarah_jayne_blakemore_the_mysterious_workings_of_the_adolescent_brain (I thoroughly recommend this talk for those of you who are parents of adolescents as well….. [Ed])

Next month: **The HEADSSS assessment as a framework for your consultation**

LESSONS FROM THE FRONT LINE

A developmentally normal 2 year old was referred to clinic because of violent myoclonic jerks that are only seen when he has a fever. He does not lose consciousness during these events but does seem frightened by them. Initially seen in a paediatric ED, his parents were told that this was febrile myoclonus, a benign entity that he will grow out of. The second time he experienced it, his concerned grandmother took him to the local ED where the doctor said that this was very unusual and he should have a scan of his head and an EEG. The parents were confused in clinic as to which of these doctors to believe.

FEBRILE MYOCLONUS is a benign condition associated with fever. It has no neurological sequelae (Miller, 2008). The age range of patients with febrile myoclonus is broadly similar to those developing febrile convulsions. The duration of febrile myoclonus is usually up to 30 minutes but was > 2hrs in four patients in one study. 73% of patients showed fear, surprise and shouting (Sachiko, 2004). The myoclonus is impressive and often leads doctors to request tests but the authors above urge us not to over-investigate for fear of unnecessary medications being prescribed. There is a useful video of the dramatic movements here, presented as part of a case report and clinical review. The phenomenon is quite common but underreported and can be confused with febrile seizures.

Dr Jackie Driscoll's next vaccine instalment: **Rotavirus**

(see October 2013 newsletter as well)

- Rotavirus vaccine is an oral vaccine given at 2 and 3 months
- Rotavirus is the most common cause of gastroenteritis worldwide and almost all children will have been infected by the age 5
- Diarrhoea secondary to rotavirus can persist for up to 9 days
- 1 in 10 infected children will require hospitalisation for treatment of dehydration
- All of this can be prevented - **the vaccine was first introduced in 2013 and the following year, rotavirus infections fell by 70%**: https://academic.oup.com/jid/article/213/2/243/2459331

What are the concerns?

➢ The rotavirus vaccine is a live vaccine and therefore is not suitable for babies who may be immunosuppressed including babies born to mothers who have been immunosuppressed during pregnancy or breastfeeding. See: https://www.gov.uk/drug-safety-update/updates-to-public-health-england-s-green-book-chapter-on-live-attenuated-vaccines for more.

➢ There is a small increased risk of intussusception in the first 7 days after a baby receives the rotavirus vaccine. The natural risk is 120 per 100,000 and with rotavirus vaccine introduction, this rises to 122 per 100,000. Keep a high index of suspicion and see: http://vk.ovg.ox.ac.uk/rotavirus-vaccine for more on signs and symptoms.

Our team saw a child with intracranial complications of sinusitis last autumn and, as is common in situations like this, personal practices changed for a while and antibiotic use went up. Around the same time, NICE published its clinical guideline on sinusitis in adults and children (https://www.nice.org.uk/guidance/ng79) which reminds us that only 0.5% to 2.2% of acute viral sinusitis becomes complicated by a bacterial infection. Children are at more risk than adults though; in a Dutch study (Hansen et al. 2012), severe complications occurred in 1:12,000 children and 1:32,000 adults with acute sinusitis who were otherwise healthy. NICE's recommendations include:

≤ 10 days symptoms: symptom management, no antibiotics
≥ 10 days symptoms: consider nasal steroids, consider antibiotics
Refer if: signs of sepsis, orbital complications, severe headache, neurology, swelling over the frontal bone (our patient's presentation)