

Paediatric Pearls

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Previous editions are all available at www.paediatricpearls.co.uk

Rotavirus vaccination (Rotarix®) was introduced as part of the childhood immunisation schedule in July 2013. Rotavirus is the commonest cause of gastroenteritis among children and, because it starts with a high fever and symptoms last 3-8 days, results in a significant number of young children being admitted to hospital each year. Most children have at least one bout of rotavirus before their 5th birthday. It is often recurrent. Rotarix® is an oral vaccine given at 8 weeks and 12 weeks. The rules for what to do if these immunisations are delayed are not easily memorable! The answer and other FAQs, background and parent information leaflets are all at <https://www.gov.uk/government/collections/rotavirus-vaccination-programme-for-infants>. [Click here](#) for a poster of all routine childhood immunisations from June 2013.

How do I know if the 3 yr old child I saw this morning with a fever for 5 days has **Kawasaki disease (KD)?**

- KD is an acute febrile childhood vasculitis affecting medium sized arteries, particularly the coronaries.
- Affects children aged between 6 months and 4 years, but can occur in children up to the age of 16.
- **Diagnosis** is based on persistent fever, of 5 days or more, plus 4 of the following:
 - 1) **Conjunctivitis**- bilateral, bulbar, non suppurative
 - 2) **Lymphadenopathy**- cervical >1.5 cm
 - 3) **Rash**- widespread, polymorphous, NOT vesicular
 - 4) **Lips and oral mucosa**- red cracked lips, "strawberry" tongue, erythematous oral cavity
 - 5) **Changes of extremities** Erythema, oedema of palms and soles initially, then peeling of skin at a later stage
- Fever is often >39°, remittent and unresponsive to antibiotics and antipyretics.
- Incomplete KD can occur where not all diagnostic criteria are met. It is more common in children less than a year old.
- Children with KD are often extremely irritable.
- An inflamed BCG scar is a recognised sign of KD.

Why is it important to diagnose?

KD is the commonest cause of acquired cardiac disease in the UK and USA; 25% of untreated cases develop cardiac complications. Timely treatment reduces coronary artery damage by up to 75%. Children less than 1 year of age with incomplete KD have a higher risk of developing cardiac sequelae.

I've not seen one before, how common is it?

Quite common with an annual incidence in the UK and United States of approx 9-12 per 100 000 children under 5 years (compared to an age-matched incidence of meningococcal disease of approx 1 per 100 000).

What do I need to do?

Children with suspected KD should be referred to the paediatric team urgently, as early treatment with iv immunoglobulin significantly reduces the risk of long term cardiac artery damage.

[Click here](#) for more information on **diagnosis and follow up** – with thanks to Dr Yasmeen Moin, paediatric registrar.

The management of recurrent wheeze in children under the age of 2 years is a common yet controversial topic; this article examines the evidence for bronchodilators' efficacy in children under the age of 2 years. **Bronchodilators in wheezy under 2-year-olds: when and which (if any)?** W D Carroll and J Srinivas. *ADC* June 2013. Full text available at <http://ep.bmj.com/content/98/3/113.full.pdf+html>

With thanks to Dr Aber Eaqub for summarising this paper. Her full summary is published [here](#).

- ☞ 33% of 1-5 year olds experience recurrent respiratory symptoms incl. wheeze
- ☞ 25% of those who have recurrent wheeze will grow up to have asthma in adulthood
- ☞ 'wheeze' means different things to different people. Causes include viral infections, GORD, congenital abnormalities of the respiratory tracts, cystic fibrosis, CHD, neuromuscular disorders
- ☞ In preschoolers, recurrent wheeze can be episodic viral or multiple-trigger wheeze
- ☞ There is no good, clear evidence to support the use of β_2 -receptor agonists (salbutamol), ipratropium bromide or adrenaline (epinephrine) for recurrent wheeze in children < 2 years
- ☞ Parental education regarding avoidance of household smoking and known allergens is effective in the long-term
- ☞ Careful reassurance may be all that is required. If a trial of salbutamol is initiated, the child should be re-evaluated 10-15 min after administration, and routine use of bronchodilators continued only if objective benefit can be shown.

Antisocial behaviour and conduct disorders in children and young people: recognition, intervention and management. NICE, March 2013 www.guidance.nice.org.uk/cg158

- ♦ characterised by repetitive and persistent patterns of antisocial, aggressive or defiant behaviour that amounts to significant and persistent violations of age appropriate social expectations. 7% of boys and 3% of girls aged 5 to 10 years have conduct disorders.
- ♦ Oppositional defiant disorder is more common in children ≤ 10 years; the other subtypes of conduct disorder are more common in those aged ≥ 11 years
- ♦ 46% of boys and 36% of girls have at least 1 coexisting mental health problem
- ♦ 30% of a typical GP's child consultations are for behavioural problems

Key priorities for implementation:

- ♦ For initial assessment, consider using the [Strengths and Difficulties Questionnaire](#).
- ♦ Assess for depression, ADHD, autism, substance misuse, other stressors
- ♦ Ask about patterns of negativistic, hostile, or defiant behaviour in children <11 years, about aggression to people and animals, destruction of property, deceitfulness or theft and serious violations of rules in children >11 years
- ♦ Assess current functioning at home, at school and with peers and parenting quality
- ♦ Offer a group parent training programme to the parents of children and young people have been identified as being at high risk of developing oppositional defiant disorder or conduct disorder or have oppositional defiant disorder or conduct disorder or are in contact with the criminal justice system because of antisocial behaviour.
- ♦ Refer to CAMHS. Methylphenidate or atomoxetine can be used for the management of ADHD in children and young people with oppositional defiant disorder or conduct disorder, in line with Attention deficit hyperactivity disorder (NICE cg 72).

"From the literature" by Dr Tom Waterfield

When is bradycardia normal?

Long-Term Outcomes of Pediatric Sinus Bradycardia Shuenn-Nan Chiu, Lian-Yu Lin, Jou-Kou Wang et al. *The Journal of Pediatrics* Volume 163, Issue 3, September 2013, Pages 885-889.

Shuenn-Nan et al report on a 10 year follow up of 432,166 school children in Taiwan to determine the prevalence and natural history of childhood sinus bradycardia. They identified sinus bradycardia via 4 lead ECG screening of school children from 1999-2001 and then completed a 10 year follow up in 2010-2011.

They found that sinus bradycardia was rare in the under 12s with a prevalence of only 0.0025 (4 patients). It was, however, common in the over 12s with 4.5% having a resting heart rate below 50bpm. In all cases no pathological cause was found despite extensive investigation including, echocardiography, 24-hour Holter, treadmill ECG and channelopathy testing.

In addition none of the children with sinus bradycardia were symptomatic other than for syncopal episodes (17%) and their heart rate was always greater than 30. They also demonstrated greater heart rate variability with the authors suggesting that increased vagal tone may be responsible.

Sinus bradycardia in children over 12 is common. If the 12 lead ECG is normal and there are no concerns raised during history and examination then further investigation is of questionable benefit. In children <12 a HR <60 is rare and I would have a lower threshold for referral/further investigation in this age group.

Force Feeding is a form of physical abuse. There is a good parent information leaflet from NHS Lothian on fussy eating at <http://www.refhelp.scot.nhs.uk/dmdocuments/Paediatric%20Dietetics/Fussy%20Eaters%201.pdf>. Bottom line: The parent decides **what, when and where** foods are offered. The child decides **whether or not they are hungry and how much** they want to eat.