

## CARDIO4 mnemonic for diagnosing Kawasaki disease

Sir,

Kawasaki disease – a systemic vasculitis – is the most common cause of acquired cardiac disease in the paediatric population (Luca and Yeung, 2012; Huang et al, 2013). There is an increasing incidence of Kawasaki disease within the developed world with cases set to increase by 50% and 100% in Taiwan and USA respectively, by 2030 (Huang et al, 2013). If not identified and treated early, this disease can be complicated by coronary artery aneurysms, and those who have suffered aneurysms require long-term follow up (Dajani et al, 1993).

In 1993, the American Heart Association published guidelines on the diagnosis and treatment of Kawasaki disease (Dajani et al, 1993), which described classical core signs required for diagnosis along with extra clinical and laboratory findings. The guidelines have been updated with a more substantial list of supplementary findings developed by the American Academy of Pediatrics and the American Heart Association (Newburger et al, 2004).

The classical signs of Kawasaki disease consist of:

1. Fever for at least 5 days and at least four of five of the following criteria
2. Cervical lymphadenopathy (>1.5 cm diameter), typically unilateral
3. Polymorphous exanthem

4. Changes in extremities: acutely palmo-plantar erythema, oedema of hands and feet; subacutely periungual fingers and toes peeling in weeks 2 and 3
5. Bilateral bulbar conjunctival injection without exudates
6. Changes in lips and oral cavity: erythema, cracking lips, strawberry tongue, oropharyngeal mucosal injection.

Approximately 1 in 4 children with Kawasaki disease may present with fever and fewer than four of the core diagnostic signs, classified as ‘incomplete’ Kawasaki disease. This often results in delayed diagnosis but carries a similar risk of complications (Newburger et al, 2004; Harnden et al, 2009; Manlhiot et al, 2012).

The authors believe that the CARDIO4 mnemonic proposed (Table 1) will serve as a useful tool for the recall and recognition of the features of Kawasaki disease, as proposed by the American Academy of Pediatrics and American Heart Association (Newburger et al, 2004), especially for medical students and junior doctors, since not all children present with a full complement of diagnostic signs. In addition, the name CARDIO4 should act as a reminder of the complication of coronary aneurysms, aid prompt diagnosis and treatment, thus preventing sequelae of Kawasaki disease.

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## Erratum

In the article *Emphysematous pyelonephritis in a diabetic patient with autosomal dominant polycystic kidney disease* (vol 75(4), 2014, p. 235), the corresponding author's name should have been given as Dr YO Kim. We apologize for any confusion caused.

**Table 1. The CARDIO4 mnemonic**

Mnemonic letter	Criterion	Features
C	Core temperature raised	≥38°C for ≥5 days
A	Adenopathy	Cervical lymphadenopathy >1.5 cm palpable
R	Rash	Polymorphous
D	Distal changes	Includes erythema, oedema, desquamation of hands and feet
I	Injection, conjunctival	Bilateral, without exudates
O	Oral mucosa and lip changes	Includes peri-oral erythema, cracking lips, strawberry tongue, oropharyngeal injection
4	Core temperature raised (fever) and four of remaining five criteria required to make a diagnosis	

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