Table 1 Single values and mean nNO levels of patients with PCD

Patient	T0 *ppb*	T1 *ppb*	T2 *ppb*
Case 1	9.2; 6.5; 6.0 mean 7.2	10; 8.0; 6.0 mean 8.0	6.0; 10; 10 mean 8.6
Case 2	38; 42; 43 mean 41	43; 35; 37 mean 38.3	25; 40; 25 mean 30

Case 1: T0 at 5 days of life, T1 at 30 days without clinical symptoms and finally T2 at 60 days of life.
Case 2: T0 first test, T1 after 60 days and T2 after 90 days.
nNO, nasal nitric oxide; PCD, primary ciliary dyskinesia.

Therefore, the levels of nNO in the elder brother and parents were evaluated. The nNO levels were normal in both parents. By contrast, in the 7-year-old child the mean nNO level was 41 ppb at the first assessment, and it was confirmed as low (30 ppb) after 90 days, when he was in a stable healthy period. The PCD diagnosis in case 2 was also confirmed by nasal brushing, but in this case the imaging investigation failed to show *situs viscerum inversus*. For both brothers intensive physiotherapy was instituted.

PCD is an underdiagnosed genetic disease that represents a rare cause of neonatal respiratory distress. In half of the patients it is associated with *situs viscerum inversus* (Kartagener's syndrome), and some of these patients have mild minimal transmission electron microscopy defects (ie, atypical PCD),[1] with a wide spectrum of disease variability.

Recent studies have demonstrated low nNO levels in patients with PCD compared with healthy age-matched subjects and, therefore, this measurement has been proposed as a diagnostic marker for screening.[2] Our observation that markedly low levels of nNO represent a characteristic feature of PCD even in newborns with *situs viscerum inversus* and respiratory distress at birth[5 6] further supports the use of this marker for the early detection of the disease in children.

To the best of our knowledge, the case we are reporting is the first demonstration of the potential application of nNO as a non-invasive, low-cost tool for the family screening of PCD after the identification of a positive case in a newborn.

A Bodini,[1] S Rugolotto,[2] U Pradal,[3] G Zanotto,[4] D Peroni[1]

[1] Clinica Pediatrica, Università di Verona, Verona, Italy; [2] U.O. Patologia e Terapia Intensiva Neonatale, Ospedale Policlinico G.B. Rossi, Verona, Italy; [3] Centro Regionale Fibrosi Cistica, Ospedale Civile Maggiore, Verona, Italy; [4] U.O. di Pediatria; Ospedale Sacro Cuore di Negrar, Verona, Italy

Correspondence to: Diego Peroni, Dipartimento di Pediatria, Policlinico G.B. Rossi, 37134 Verona, Italy; diego.peroni@tiscalinet.it

Acknowledgements: The authors thank the Valeas S.p.a. for providing the NIOX chemiluminescence analyser (Aerocrine, Stockolm, Sweden).

Competing interests: None declared.

Accepted 28 January 2008

Arch Dis Child 2008;**93**:452–453. doi:10.1136/adc.2008.138636

REFERENCES

1. **Bush A,** Chodhari R, Collins N, *et al*. Primary ciliary dyskinesia: current state of the art. *Arch Dis Child* 2007;**92**:1136–40.
2. **Wodehouse T,** Kharitonov SA, Mackay IS, *et al*. Nasal nitric oxide measurements for the screening of primary ciliary dyskinesia. *Eur Respir J* 2003;**21**:43–7.
3. **Struben VMD,** Wieringa MH, Mantingh CJ, *et al*. Nasal NO: normal values in children age 6 through to 17 years. *Eur Respir J* 2005;**26**:453–7.
4. **Piacentini GL,** Bodini A, Peroni D, *et al*. Nasal nitric oxide for early diagnosis of primary ciliary dyskinesia: practical issues in children. *Resp Med* 2008;**102**:541–7.
5. **Stehling F,** Roll C, Ratjen F, *et al*. Nasal nitric oxide to diagnose primary ciliary dyskinesia in newborns. *Arch Dis Child Fetal Neonatal Ed* 2006;**91**:F233–4.
6. **Baraldi E,** Pasquale MF, Cangiotti AM, *et al*. Nasal nitric oxide is low early in life: case study of two infants with primary ciliary dyskinesia. *Eur Respir J* 2004;**24**:881–3.

Prevalence of anaemia in an inner city primary school population

Iron deficiency, defined as a serum ferritin level of <15 μg/l,[1] has been shown to adversely affect many aspects of health and development in childhood and persistence into school age may result in sub-optimal health and academic under-achievement. National research has demonstrated that a high prevalence of anaemia in pre-school children (12%), causally linked to iron deficiency related to dietary factors, is common in areas of socioeconomic deprivation[1] and particularly in children of minority ethnic parentage, especially of Pakistani origin.[2] There is little information in the literature about the prevalence of anaemia in school aged populations, so trained operators using a HaemoCue (HaemoCue, Ängelholm, Sweden) machine[3] tested a whole school sample in an inner city area with a high percentage of children of Pakistani parentage.

A total of 319 children aged 4–11 years were tested, representing an uptake rate of 90%; 88% of these children were of Pakistani origin. Anaemia was found in 25% (95% CI 20% to 30%) of the children: 22% (95% CI 18% to 27%) were mildly anaemic and 3% (95% CI 1% to 5%) were severely anaemic. We used the standard WHO reference[4] for defining severe anaemia as a haemoglobin level below 9.0 g/dl for those under 5 years of age and below 9.5 g/dl for those 5 years of age and over. Mild anaemia was defined as a haemoglobin level between 9.0 and 10.9 g/dl for those under 5 and between 9.5 and 11.4 g/dl for those aged 5 and over. No significant trend across school years was found.

Parents or carers of the mildly anaemic children were offered dietary advice and follow-up by the community nursing team. The eight children who were severely anaemic were assessed by a community paediatrician and appropriate treatment and follow-up were arranged. Full blood count, serum electrophoresis and serum ferritin levels were carried out and confirmed iron deficiency in all eight cases. One child was found to have the thalassaemia trait in addition to iron deficiency.

We have demonstrated that anaemia is a significant health problem in this school aged population, most likely caused by iron deficiency. We are now carrying out similar studies in other local areas of different ethnicity and social constitution to ascertain whether this is a more general problem. It may be that the problem is related as much to the modern western diet of a school age child as to the continuing effects of traditional weaning and early childhood diets that have been implicated in this population. It will also be important to ascertain the extent of any problem in the adolescent age group.

E A Adamson, G R Bailey, N Richards, H Wilson

Children's Services, Derby City PCT, Derby, UK

Correspondence to: E A Adamson, Children's Services, Derby City PCT, Wilderslowe, 121 Osmaston Road, Derby DE1 2GA, UK; Liz.Adamson@derbycitypct.nhs.uk

Competing interests: None.

Arch Dis Child 2008;**93**:453. doi:10.1136/adc.2007.116301

REFERENCES

1. **Gregory JR,** Collins DL, Davies PSW, *et al*. *National diet and nutrition survey*. London: HMSO, 1995.
2. **Ehrhardt P.** Iron deficiency in young Bradford children from different ethnic groups. *BMJ* 1986;**292**:90–3.
3. **Mills AF,** Meadows N. Screening for anaemia: evaluation of haemoglobinometer. *Arch Dis Child* 1989;**64**:1468–70.
4. **World Health Organization**. *Iron deficiency anaemia. assessment, prevention and control. A guide for programme managers*. Geneva: WHO, 2001.

CORRECTION

doi:10.1136/adc.2006.113001corr1

Maguire S, Hunter B, Hunter L, *et al*. Diagnosing abuse: a systematic review of torn frenum and other intra-oral injuries (*Arch Dis Child* 2007;**92**:1113–17).

A number of errors were published in this paper as follows:

In the methods section of the Abstract the second sentence should read: ''Nine studies documented abusive torn labial frena in 27 children and 24 were fatally abused...''

The second sentence of the Results section should read: ''These represented data on 603 children.'' Also in the Results section, under the subheading ''Abusive torn labial frenum'', first sentence of the second paragraph should read: ''These studies represented data on 27 children, of whom 24 (88%) were fatally abused.''

Under the heading ''Abusive intra-oral injuries'' on p1114 the third sentence of the first paragraph should read: "They represented data on 580 children (table 5).''

Prevalence of anaemia in an inner city primary school population

E A Adamson, G R Bailey, N Richards and H Wilson

Arch Dis Child 2008 93: 453
doi: 10.1136/adc.2007.116301

Notes