A new urine collection method; pad and moisture sensitive alarm

Urine collection pads (UCPs) are a non-invasive and easy method of sampling urine from young children still in nappies to diagnose or rule out urinary tract infection (UTI). However, our previous study showed a high rate (27%) of sample contamination (>10^5 mixed growth organisms/ml) by faecal/perineal flora, making interpretation difficult. We hypothesised that reducing the contact time between urine soaked UCP and perineal flora inherent in both sample. We conducted a randomised trial to compare the contamination rate (>10^5 mixed growth organisms/ml) of urine obtained from UCPs (checked for urine every 15 minutes) or UCPs incorporating an enureis sensor (Ferraris 5x2000). Urine was aspirated from the UCP using a 20 ml syringe and sent for routine culture. The local research ethic committee approved the study. Consent was obtained from parents. A total of 91 children were recruited. Pads visibly soiled with faeces were discarded. A total of 71 samples were successfully obtained for culture (UCP 37, UCP/alarm 34). UTI occurred in 7% (5/71). The incidence of heavy mixed growth (>10^5 organisms/ml) was similar in both groups: UCP 21% (7/34) and UCP/alarm 22% (7/32); odds ratio 1.08 (95% CI 0.3 to 3.5). There were no adverse effects from the alarm and only one false alarm.

Our new UCP/alarm method did not reduce the likelihood of bacterial contamination of the sample. There remains a high rate of contamination by skin and faecal flora inherent in both UCP methods, which is higher than the catch method (12%) in our previous study. It seems likely that simple contact of the pad with the perineal skin increases the risk of contamination, irrespective of whether the UCP is wet or not. Further work to address this is in progress.

The main benefit of our new UCP/alarm method was its ease and speed of use. The conventional UCP method is already popular with parents. Our UCP/alarm method was preferred over the conventional UCP method, because the alarm immediately signals the presence of urine in the UCP and reduces the need to disturb the child for frequent checking of the pad.

S Rao, C Houghton, P I Macfarlane
Department of Child Health, Rotherham General Hospital, Moorgate Road, Rotherham S11 8QF, UK

Reference

Lean body mass in children with cystic fibrosis

Poor nutritional status adversely affects long term survival of patients with cystic fibrosis (CF). Body composition measured by dual energy x ray absorptiometry (DXA) has been shown to correlate well with other established techniques such as bioelectric impedance analysis and total body potassium estimation. This study was designed to compare the whole body and regional bone mineral density of children with CF that had almost 10 years earlier than the youngest patient, during which period significant advancements have occurred in the care of CF patients. Our data are potentially important, as poor nutritional status is known to adversely affect survival of CF patients, and changes in body composition are known to predict deterioration in traditional anthropometric indices of nutrition. A prospective longitudinal study is required to confirm our finding that LBM declines with age and/or worsening disease severity, and to evaluate its impact on morbidity and long term survival in CF patients.

M Sood Regional Cystic Fibrosis Clinic, Booth Hall Children’s Hospital, Charlestown Road, Manchester M9 7AA, UK

J E Adams Clinical Radiology, Imaging Sciences and Biomedical Engineering, University of Manchester, Oxford Road, Manchester M13 9PT, UK

M Z Mughal Department of Paediatric Medicine, Saint Mary’s Hospital for Women & Children, Halthergade Road, Manchester M13 0JH, UK

Correspondence to: Dr M Z Mughal, Consultant Paediatrician & Honorary Senior Lecturer in Child Health, Department of Paediatrics, Saint Mary’s Hospital, Halthergade Road, Manchester M13 0JH, UK; zulf.mughal@man.ac.uk

References

Haemolytic anaemia associated with high dose intravenous immunoglobulin therapy in a child with Guillain-Barré syndrome

We report a case of severe haemolysis in a patient who received high dose immunoglobulin therapy. A 4 year old, 16 kg boy,
with AB Rhesus positive blood, was admitted to an intensive care unit with Guillain-Barré syndrome. Rapid progression to respiratory failure and abnormal deglutition were observed. Mechanical ventilation had to be initiated a few hours after admission. Human immunoglobulin (regeline, 1 g/kg/day) was administered for five days. Two days after completion of the therapy, erythrocyte count and haemoglobin fell from 4.91 x 10^12 g/l to 1.76 x 10^12 g/l and from 125 g/l to 47 g/l, respectively. Bone marrow aspiration was normal. Haematocrit was <0.1 g/L. Schizocytes were present in the peripheral blood smear. Further examination revealed the presence of auto-A and anti-B antibodies and positive direct Coombs test. Alto-antibodies anti-A and anti-B were detected in samples from all the lots of immunoglobulin given to this patient. Their titres ranged from 4 to 8 IU/l (usual titres <64 IU/l).

A transfusion of 250 ml of packed red cells increased haemoglobin to 80 g/l. Muscular function improved progressively and tracheal extubation was performed 10 days after the beginning of therapy. A few days later, the patient was discharged from the intensive care unit.

As previously reported by other authors, our patient received a high dose of intravenous immunoglobulins, and direct antiglobulin testing implicated antibodies to the patient’s own globulins, and direct antiglobulin testing revealed the presence of antibody to red blood cells. The patient’s own immune system was also implicated in the patient’s own problems. The patient’s own immune system was the first to be diagnosed after the admission. Thereafter, the patient’s own immune system was found to be responsible for all the problems. This is particularly well accentuated by the use of the definite article, as in the mother, the father, the sister, etc. However, it is her relationship with health professionals, education, and most particularly her peers which are the most frightening and insightful aspects of this book.

Initially the book’s emphasis is on the patient’s own identity. She says that she feels that her own date of birth is the date of her accident, as she has no memories or recollection of her life prior to it. There is also a wish to be as good as the old Lynsey, her family’s old daughter. She next describes her medical care: after an initial stay in the neurosciences department, she is sent to a behavioural unit; here she is with what she describes as “all the problems under the sun” of different fonts, and even in some patches poorly constructed sentences are all there to give a feeling of the author’s confusion at what was going on around her. However, here she is befriended by her fellow inpatients who re-teach her the basics of reading and writing. Finally she gets seen by a specialist who diagnoses her as having retrograde anterograde post traumatic (RAPT) amnesia, and who advises admission to her adolescent unit. Here again there were patients with a huge variety of diagnoses, from anorexics, to drug addicts, to the author. She describes the bullying, but more clearly described is the bullying, and the start of a descent into an eating disorder behaviour.

Finally she went back to school. Here there appears to have been virtually no support. There was no idea of the problems that she had with amnesia and the impact that that would have on her learning. But more significant was the bullying and hostility, which finally led to her being assaulted.

She was sent to a new school two towns away where no-one knew “the old Lynsey”. Here she developed new friends, and had a much reduced timetable. The remainder of the book is about a slow but steady improvement in her life. It is about the way she has slowly rebuilt her life, by going to college, getting involved in creative writing, and by slowly discovering her own identity. These have been punctuated by problems: her descent into anorexia, and then exercise addiction, to a highly immature sexual identity.

This is a highly personal book, written entirely from the perspective of a girl who suffered a traumatic brain injury aged 14 years, in 1992. She was left with no physical scars, but with a complete loss of memory. What Lynsey well describes is the feeling of loss of identity, the feeling that she is trapped inside her body, and that her family is not her own; this is particularly well accentuated by the use of the definite article, as in the mother, the father, the sister, etc.

However, it is her relationship with health professionals, education, and most particularly her peers which are the most frightening and insightful aspects of this book.