PostScript

LETTERS

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).[1–3] However, our previous study[4] 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 perineum might reduce this. We therefore devised a new method using the UCP, incorporating the sensor of a personal enuresis alarm buried in its matrix,[5] so that the presence of urine in the UCP is signalled, allowing removal of the UCP as soon as urine is passed.

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 enuresis sensor (Ferraris fx2000). Febrile children under age 2 (urine sample required to rule out UTI) were randomised to the two collection methods. Urine was aspirated from the UCP using a 20 ml syringe and sent for routine culture. The local research ethics 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 clean catch method (12%) in our previous study.[4] It seems likely that simple contact of the pad with the perineal skin influences 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.[3] 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.

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Lean body mass in children with cystic fibrosis

Poor nutritional status adversely affects long term survival of patients with cystic fibrosis (CF).[1] 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.[2] This study was designed to compare the whole body and regional bone mineral density of children with CF with that of controls, the results of which have been reported previously.[3] Here, we present the results of post hoc comparison of DXA measured whole body lean body mass (LBM) in 28 patients with CF (aged 5–16 years) and 49 healthy gender, age, height, weight, and pubertal stage matched controls. Hologic QDR 4500 Acclaim DXA scanner (Hologic Inc., Waltham, MA, USA) in conjunction with the V8.24a:3 software was used for whole body LBM measurements. The short term in vivo precision for total body LBM in adults is 1.75%. Disease severity in cystic fibrosis patients was estimated by the Shwachman Kulczycki (SK) score. The study design, recruitment of subjects, and anthropometric measurements has been described previously.[3]

We have previously shown that age, height, weight, body mass index, LBM, and fat body mass of subjects in the CF and control groups were not different.[3] However, as shown in fig 1, the difference in LBM between CF patients and controls (LBM of CF patients minus LBM of age and gender matched controls) declined with age (slope −0.33; 95% CI −0.62 to −0.04; p = 0.028). In other words, the older CF patients had lower LBM in comparison to healthy age and size matched controls. An inverse relation was observed between SK scores and age in CF subjects ($r = -0.39$, $p < 0.05$), indicating that older CF patients had more severe disease compared to the younger patients. Taken together, these data suggest that in CF patients the disease severity worsens with age, and this in turn is associated with the decline in LBM. Alternatively, the observed reduction in LBM and lower SK scores in older patients might be due to a cohort effect, as the eldest patients were born 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,[1] and changes in body composition are known to predate deterioration in traditional anthropometric indices of nutrition.[4] 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.

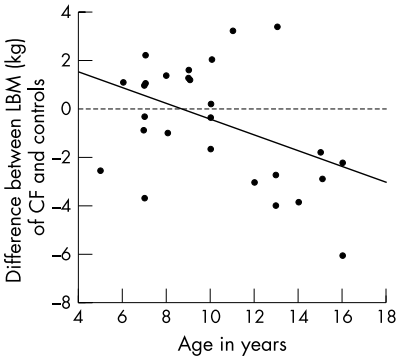

Figure 1 Difference in LBM between CF patients and controls (LBM of CF patients minus LBM of age and gender matched controls), plotted against age.

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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,