PostScript

LETTERS

Hypernatraemic dehydration in breast-fed neonates

A retrospective study was carried out using patient files from January 2004 to December 2005 at the Ministry of Health Göztepe Teaching Hospital Neonatology Unit, Istanbul, Turkey. Enrolment criteria included breast-fed term neonates admitted with clinical manifestations of hypernatraemic dehydration (serum sodium level ≥ 150 mmol/l).

In all, 29 cases of hypernatraemic dehydration were identified. Tables 1 and 2 show the demographic data, clinical variables and laboratory values.

Sixteen infants were treated with a fluid bolus of 0.9% saline once or twice with oral feed and 13 infants were given free water for 48–72 h in addition to saline boluses. Peritoneal dialysis was used for two infants with severe acute renal failure. No deaths were reported.

In this report, there is no explanation for hypernatraemia other than inadequate milk intake. Mothers are often primigravidae (59% in our study) with low milk production owing to insufficient lactation caused by poor milk removal from the breast by sleepy and

quiet babies. In our study, 65% of the infants were admitted because of poor suckling.

Interestingly, 45% of the infants were born during winter and only 10% were born during summer, which suggests that lactation failure rather than environmental heat induces hypernatraemia. Besides, 59% of the babies had no fever, showing that fever may have a moderate effect on the aetiology of hypernatraemia.

The proportion of infants with jaundice was 24%, which is considerably lower than the rate of 81% reported by Moritz et al.¹ Our patients might have been admitted with hyperbilirubinaemia earlier, before hypernatraemia ensued, because of racial reasons.

In hypernatraemic dehydration, there may be changes in brain-cell osmolality and cerebral oedema resulting in lethargy and seizure. Rapid correction of plasma osmolality increases oedema and brain damage.² Three infants had seizures in the present study. The infant with a sodium level of 188 mmol/l had a seizure during the rehydration phase, which took 72 h. The other two infants undergoing dialysis treatment had seizures on admission to the emergency department. Their neurological examination at 1 year of age, electrocardiograms and cranial tomographies were normal.

Our hospital gained the title “Baby Friendly” towards the end of 2005, owing to

staff training in breastfeeding support would include location problems. As a result of this training, hypernatraemic dehydration should decrease in our unit. Another way to prevent hypernatraemic dehydration is to weigh the breast-fed infants between 72 and 96 h after birth, as recommended by the American Academy of Pediatrics.³

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Use of buccal midazolam in children

We read with much interest the recent letter on buccal midazolam by Hindley and Jameson.¹

The main reason that some recommend a buccal midazolam test dose is concern about the risk of an adverse reaction, particularly respiratory depression or apnoea, especially should it occur outside hospital. However, there is evidence that buccal midazolam is more effective than rectal diazepam and is not associated with an increased incidence of respiratory depression.²

We recently undertook a survey of epilepsy nurse specialists. Thirty questionnaires were sent to paediatric neurology and epilepsy nurse specialists looking after children with epilepsies from all regions of the UK. Twenty four responses were received (80% response rate). All preferred the buccal to the rectal route and reported an increased use and acceptance of buccal midazolam in recent years. Only 4 of the 24 (16%) responders reported that their patients were routinely given a test dose in hospital for safety reasons, to demonstrate the procedure, to reassure parents or because of local guidance. Conversely, 20 of 24 (84%) of the responders' patients were not routinely admitted to hospital for a test dose. However, 14 of 20 (70%) whose patients were not admitted for a test dose, recommended that the parent or carers call the paramedics if their child was having a prolonged seizure and wait for the paramedics to be present before giving the first-ever dose of buccal midazolam. In all, 20

Table 1 Demographic data, clinical variables and laboratory values in breast-fed infants

Clinical variables	n	Mean
Male	17	
Female	12	
Caesarean section	9	
Vaginally delivered	20	
Born at home	10	
Outborn	19	
Mother's age (years)	18–36*	25
Primigravida	17	
Summer admission	3	
Hyperbilirubinaemia	7	
Fever	12	
Winter admission	13	
Age at presentation (days)	2–12*	5.6
Lethargy and poor feeding	19	
Sepsis	None	
Seizure	3	

*Range

Table 2 Demographic data, clinical variables and laboratory values in breast-fed neonates

Clinical variables	Range	Mean
Birth weight (g)	2100–4400	3350
Weight on admission (g)	1800–3900	2825
Weight loss (%)	6–29	15.5
Sodium (mmol/l)	150–188	160.7
Potassium (mmol/l)	4–7	4.9
Blood urea nitrogen (mg/dl)	18–135	57.9
Creatinin (mg/dl)	0.6–6.6	1.5
Uric acid (mg/dl)	3.1–28	7.2
Glucose (mg/dl)	11–124	70.9