VASCULAR DISORDERS

HYPERNATREMIA AND SODIUM INTAKE AS RISK FACTORS FOR INTRAVENTRICULAR HEMORRHAGE IN PRETERM INFANTS

The association between sodium intake in the first week of life and risk of intraventricular hemorrhage (IVH) in preterm infants was studied by retrospective review of charts of 722 preterm infants with a birth weight of <1.5kg admitted to the tertiary care neonatal intensive care unit at St Louis Children's Hospital between Jan 2002 and Dec 2006. Daily sodium and fluid intake for each 24 hour period were recorded from the nursing charts for each of the first 7 days of life. No sodium was added to parenteral nutrition for the first 24 hours, and 1 to 2mEq/kg was added for the next 24 hours of life. Sodium intake on day 1, 2, and 3 was 2.39, 3.70, and 3.90 mEq/kg/day. Mean serum sodium on day 1, 2, and 3 was 138, 142, and 142 +/- 5 mmol/l. Grade II to IV IVH was associated with increased sodium intake (>4.5mEq/kg/day) on each of the first 3 days following birth. The association remained significant after adjustment for other risk factors, including severity of illness (CRIB score), pneumothorax, hypocarbia, hypercarbia, loss of weight in the first week, gender, and multiparity. The association of high sodium intake and IVH was of similar magnitude to that of risk factors such as pneumothorax. Although the rate and severity of IVH remained stable over the 5-year study period, sodium bicarbonate infusions decreased significantly from 27% in 2002 to 3% in 2006. Additional factors must influence daily sodium intake and IVH rate. The impact of restricting early sodium intake on IVH and neurodevelopmental outcomes in preterm infants should be tested by a large controlled trial. (Barnette AR, Myers BJ, Berg CS, Inder TE. Sodium intake and intraventricular hemorrhage in the preterm infant. **Ann Neurol** June 2010;47:817-823). (Respond: Dr Inder, Washington University, 600 South Euclid Ave, Campus Box 8116, St Louis, MO 63110. E-mail: inder_t@kids.wustl.edu).

COMMENT. High sodium intake in the first week of life is a risk factor for intraventriculat hemorrhage in the very low birth weight preterm infant. The avoidance of sodium in the first few days of life of preterm infants has been recommended, and no detrimental effects have been documented. (Hartnoll G et al. 2006).

MOVEMENT DISORDERS

METABOLIC COMPLICATIONS OF ANTIPSYCHOTIC THERAPY FOR TOURETTE SYNDROME

Seventy-three children with Tourette syndrome treated with antipsychotics were monitored for metabolic and neurologic side effects every six months in a study at University of Calgary, Alberta, Canada. A total of 45 (61.6%) children (mean age 11.5 years; 89% boys) developed abnormal lipid levels, abnormal body mass index values, or both while being treated with antipsychotic medications for a mean of 8.8 months. Eleven had Tourette syndrome only; the remainder had Tourette syndrome plus ADHD or OCD.

Risperidone, the most commonly prescribed drug at the time of the monitored metabolic abnormality, was taken by 34 of the 45 (dose range 0.25-4.5 mg per day), 6 of 45 were taking olanzapine (2.5-15 mg/day), 4 quetiapine (50-600 mg/day), and 1 patient pimozide (2 mg). None was taking haloperidol at that time. Medication was for tics in 27 of the 45 children, aggression in 17, and as an adjunctive therapy for OCD in one child. Three of 73 children developed neurologic complications (akathisia in 1 taking haloperidol, acute dystonic reaction in 1 with haloperidol and in 1 with risperidone. None developed tardive dyskinesia, tremor, or Parkinsonism.

In boys treated with antipsychotic medication for tics, total cholesterol, low-density lipoprotein, high-density lipoprotein, and triglyceride levels were significantly higher than population-based levels for boys ($p<0.0001$). Girls had significantly lower high-density lipoprotein concentrations ($p=0.0033$). Odds of having lipid abnormalities were significantly higher in the 36 of 73 children with abnormal mass indices ($p=0.0004$). The 49% of overweight or obese children in this cohort of children treated with antipsychotics contrasts with 22.5% in the Canadian population-based sample. The long-term health consequences of obesity and lipid abnormalities are of concern, and risks and benefits of antipsychotic medication for tics should be carefully considered before initiating therapy. (Pringsheim T, Pearce M. Complications of antipsychotic therapy in children with Tourette syndrome. **Pediatr Neurol** July 2010;43:17-20). (Respond: Dr Pringsheim, Calgary Tourette Syndrome Clinic, 2888 Shagganappi Trail NW, Calgary, Alberta T3B 6A8, Canada. E-mail: tmprings@ucalgary.ca).

COMMENT. Children with Tourette syndrome requiring antipsychotic therapy should be monitored for abnormalities in lipid metabolism and weight gain.

TRAUMATIC DISORDERS

BROWN-SEQUARD-PLUS SYNDROME AFTER STAB INJURY

A 5-year-old boy suffered a stab wound to the back in the right paraspinal region that resulted in spinal cord injury at T2-T3 level and spinal shock. Bilateral paresis was present in lower limbs, absent superficial reflexes, retention of urine, and loss of bowel and bladder sensation. After methylprednisolone, normal saline, and phenylephrine for hypotension, his condition improved and exam at 8 days revealed spastic paresis of the right lower limb, absent vibration and position sensation below the nipple level on the right side, and loss of pinprick and temperature sensation in the left half of the body. He also had paralytic ileus, constipation, and loss of bowel sensation. A clinical diagnosis of incomplete spinal cord injury at T4 dermatome and Brown-Sequard-plus syndrome was confirmed by MRI. At 6 weeks he was weaned off vasopressor agents and he had partial recovery of power in the right lower limb and full recovery of sensations. (Issaivanan M, Nhlane NM, Rizvi F, Shukla M, Baldauf MC. Brown-Sequard-plus syndrome because of penetrating trauma in children. **Pediatr Neurol** July 2010;43:57-60). (Respond: Dr Baldauf, Division of Pediatric Critical Care, Department of Pediatrics, Brookdale University Hospital, One Brookdale Place, CHC-801, Brooklyn, NY 11212. E-mail: mbaldauf@brookdale.edu).