

ceased; all medication was discontinued. He subsequently remained well and returned home with his mother on the sixth day. When seen at the age of 9 months by a consultant paediatric neurologist he had been free of fits and was considered to be completely normal.

## Discussion

In this case severe neonatal illness resulted from transplacental hyponatraemia after the maternal administration of excessive quantities of 5% dextrose in combination with oxytocin at a rate which produces an 80% reduction in urinary flow.<sup>1</sup> Although 30 cases of maternal water intoxication due to oxytocin have been described, in only two of these was oxytocin used for inducing labour.<sup>2,3</sup> In neither of these cases was the clinical course of the newborn infant mentioned, although a cord plasma sodium concentration of 124 mmol/l, which returned to normal by 12 hours of age, was documented in one infant.

Maternal hyponatraemia, experimentally produced by hypotonic expansion of the extracellular fluid compartment with intravenous 5% dextrose, results in a parallel fall in fetal plasma sodium concentration.<sup>4</sup> This has been confirmed clinically in a report of transplacental hyponatraemia in four newborn infants whose mothers had become hyponatraemic either after the administration of 5% dextrose during labour or after the use of diuretics and a low-salt diet for toxemia.<sup>5</sup> Three of these four infants were ill, their clinical features including apnoea at birth, hypotonia, poor suck, cyanosis, and convulsions. They thus resemble our case, and all appeared to make a full recovery.

The present report serves to emphasise the dangers of water intoxication in both mother and fetus that results from the anti-diuretic properties of oxytocin when administered in combination with large quantities of electrolyte-free fluid. It also underlines the importance of recognising that fluid and electrolyte abnormalities in the mother may result in similar abnormalities, and consequent illness, in the newborn infant.

We thank Professor J P M Tizard for help and encouragement.

<sup>1</sup> Abdul-Karim, R, and Assali, N S, *Journal of Laboratory and Clinical Medicine*, 1961, **57**, 522.

<sup>2</sup> Burt, R L, Oliver, K L, and Whitener, D L, *Obstetrics and Gynecology*, 1969, **34**, 212.

<sup>3</sup> Storch, A S, *Obstetrics and Gynecology*, 1971, **37**, 109.

<sup>4</sup> Battaglia, F C, et al, *Pediatrics*, 1960, **25**, 2.

<sup>5</sup> Altstatt, L B, *Journal of Pediatrics*, 1965, **66**, 985.

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## Vitamin E in treatment of Huntington's chorea

Vitamin supplements and special diets have become fashionable recently, particularly in chronic, incurable, and poorly understood diseases. A good example of this is the gluten-free diet and multiple sclerosis. This type of treatment is difficult to assess in diseases of variable course but this should not preclude trying to prevent people wasting time, money, and effort on such treatments. Patients and their families cannot be blamed for grasping at straws, for the professionals should not allow untested theories to become widely disseminated.

Huntington's chorea is chronic, incurable, and poorly understood. Present treatment is only symptomatic and palliative, and no treatment has been discovered that will affect the relentless downhill course. A claim, however, was made in Canada<sup>1</sup> and seconded in England<sup>2</sup> that high doses of vitamin E considerably benefited choreic patients when added to existing treatment, although in each case only one patient had been treated. Vitamin E has been used for many years for anything from ailing sexuality to intermittent claudication, but only in the latter is there any evidence of its efficacy.<sup>3</sup> In an attempt to avoid problems of the type associated with multiple sclerosis and the gluten-free diet

we decided to undertake a double-blind crossover trial to assess these claims before they became too widely known.

## Method

Ten patients suffering from Huntington's chorea were considered sufficient for a pilot study. The criteria laid down for inclusion were: (a) a genuine case of Huntington's chorea—that is, with a family history; (b) a patient who was looked after at home and not in an institution; (c) a patient who was known to and had been examined by us; and (d) a reliable family member to complete forms. We found 11 such patients (five women and six men) aged 30-70 who were prepared to participate, and permission to include them was sought from their general practitioners.

As patients with Huntington's chorea often present to an outsider as being fairly well, presumably being able to summon up enough energy for one interview, we decided that the person looking after the patient should complete the progress questionnaire weekly. The variables on the form were therefore subjective and kept as simple as possible, although they were pertinent to the problems of choreic patients. A check on the weight of the patient each week was originally requested but some families had no scales. No appreciable weight change, however, was noted in those that completed this section. The variables used were: energy, involuntary movements, walking, speech, mental alertness, mood, behaviour, sleep, appetite, and (weight). Possible scores were better, worse, or no change. Better scored +1, worse scored -1, and no change scored nil.

The trial lasted 24 weeks, divided into two. For the first 12 weeks the patient took a placebo or vitamin E (tocopheryl acetate (Ephynal), 200 mg tablets) and the reverse for the second 12 weeks. The dosage was 400 mg three times a day, which is slightly lower than that used in Canada but high enough to cause any improvement if improvement was the outcome.<sup>2</sup> The key to the trial was kept in a sealed envelope in case of emergency and not opened until the analysis of the trial.

During the trial one patient died after 13 weeks from a myocardial infarction, and a second had considerable problems with which his wife was unable to cope and he took the tablets only spasmodically. Of the remaining nine patients, only four completed the trial and assessment forms completely, the others omitting an occasional weekly return. These omissions were randomly distributed between the placebo and vitamin E and have been treated as containing no change—that is, zero score. No side effects were expected and none were complained of in the entire trial.

### Response to vitamin E and to placebo of 11 choreic patients

Patient No	No of forms completed	Vitamin E	Placebo
1	24	0	+11
2	24	-14	-19
3	24	0	+27
4	17	-9	-2
5	20	+4	+3
6	24	-12	-20
7	22	+22	+30
8		(did not complete trial)	
9	20	-34	-39
10	20	-14	-41
11		(patient died)	
Total		-57	-50

## Results and comment

The response to the placebo was -50 (the sum of the scores of all patients) and to the vitamin E -57 (see table). The negative scores obtained for both placebo and vitamin E reflect the progressive nature of the disease. The scores are not significantly different and the only conclusion that may be drawn is that empirical treatment with vitamin E has no place in the treatment of choreic patients. This study produced a negative result but because of the problems of the gluten-free diet in multiple sclerosis we thought it important to publish these negative findings.

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<sup>1</sup> Hoffer, A, *Journal of Orthomolecular Psychiatry*, 1976, **5**, 169.

<sup>2</sup> Association to combat Huntington's chorea, 1976. Personal communication.

<sup>3</sup> Marks, J, *Vitamins and Hormones*, 1962, **20**, 573.

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