**EDITORIAL**

Severe hyponatraemia

The investigation and management of severe hyponatraemia

M Crook

The importance of the laboratory in patient care

Hyponatraemia is probably the most common electrolyte disturbance encountered in clinical practice. Despite this, the best way to manage this condition is debated and not always fully appreciated. Indeed, there may be problems in both the investigation and its treatment, as is highlighted in the paper by Saeed and colleagues in this month’s edition.

One problem would seem to be that some clinicians experience difficulty in investigating the causes of hyponatraemia. It is here where the clinical biochemistry laboratory and chemical pathologist can play an important role in facilitating optimal patient care. Interestingly, Saeed and colleagues showed that rarely did patients with severe hyponatraemia have their urine osmolality or sodium checked.

"Iatrogenic postoperative hyponatraemia, as a result of the injudicious use of isotonic dextrose, is still tragically encountered, and can result in neurological damage or death" Ignorance of the effects of hypo- naetraemia unfortunately still occurs. For example, iatrogenic postoperative hyponatraemia, as a result of the injudicious use of isotonic dextrose, is still tragically encountered, and can result in neurological damage or death. Premenopausal women and children are more susceptible to this, as are the elderly, particularly if on diuretics or certain antidepressant drugs. Furthermore, there is also uncertainty about the most appropriate treatment of severe hyponatraemia because rapid correction can induce cerebral myelinolysis, whereas too slow correction may allow cerebral oedema. There are now data suggesting that acute (present for less than 48 hours) severe hyponatraemia is a medical emergency, which should be treated promptly to bring the plasma sodium to about 130 mmol/litre. Conversely, in chronic severe hyponatraemia (present for more than 48 hours), where there is no cerebral oedema, the slow correction of plasma sodium by less than 0.5 mmol/hour and not exceeding a plasma sodium concentration of 130 mmol/litre is recommended. Close monitoring of plasma and urine sodium is required to ensure safe correction. Present treatment options may consist of infusions of normal or hypertonic saline, the use of loop diuretics, or fluid restriction depending upon the cause and severity of the hypo- natraemia. In addition, there is ongoing research looking at the potential of vaso- pressin V2 receptor antagonists in the treatment of some forms of hyponatraemia.

In summary, the clinical biochemistry laboratory and chemical pathologists have roles in the diagnosis and treatment monitoring of patients with hyponatraemia. Doctors need to be aware of the clinical implications of severe hyponatraemia and how to diagnose and treat it correctly. It may also be useful to reflect upon the words of Lane and Allen that "iatrogenic hyponatraemia is inexcusable. It is time that doctors woke up to the risks."


Author’s affiliation

M Crook, Clinical Biochemistry, University Hospital Lewisham, Lewisham, London SE13 6LH, UK

Correspondence to: Dr M Crook, Clinical Biochemistry, University Hospital Lewisham, Lewisham, London SE13 6LH, UK; Martin.Crook@uhl.nhs.uk

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M Crook

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