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Use of hypertonic saline in severe symptomatic hyponatraemia; results from a national survey from United Kingdom

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Background: Acute severe symptomatic hyponatraemia is potentially life-threatening. Irrespective of the underlying aetiology, hypertonic saline (HTS) is effective at rapidly correcting serum sodium. Several clinical treatment guidelines have aimed to standardise the administration of HTS. The European Society of Endocrinology (ESE) guidelines (2014) recommend two boluses of 150 mL 3% HTS with an aim to raise serum sodium concentration by 5 mmol/L[1]. It is important to note that the evidence supporting this approach is limited, and concerns have been raised regarding the potential for overcorrection using this protocol[2]. **Aim:** To assess the practices and perceptions surrounding hypertonic saline (HTS) use in severe symptomatic hyponatraemia among United Kingdom (UK) endocrinologists and specialty trainees (fellows). **Methods:** An anonymous online survey was disseminated to all clinical members of the Society for Endocrinology (UK) between 24/10/2023 and 30/11/2023 using Survey Monkey ®, a web-based multiple-choice questionnaire. **Results:** Of 133 respondents (60.1% consultants, 33.1% specialty trainees, 6.8% other), 85% employed bolus treatment with HTS only, with 9.8% using both bolus and continuous infusions. Most (50.4%) preferred 150 mL boluses, followed by 100 mL boluses (18.8%). Commonly used HTS strengths were 2.7% (45.1%), followed by 1.8% (31.6%), while the 3% HTS strength recommended by ESE guidance was used by 21.8%. Only 7 (5.3%) respondents used weight-based HTS dosage. Contrary to guidelines, 74.4% did not administer a second bolus without waiting for sodium result from the first bolus. Also, 86% have experience using venous blood gas sodium readings for monitoring, even though this has not been mentioned or recommended in the guidelines. HTS was always administered in high-dependency settings by 16.5% and mostly administered in this setting by 49.6%. Overcorrection targets defined by 10 and 8 mmol/24 hours cut-offs were used by 48.9% and 39.9%, respectively. For definite or expected overcorrection, 75.9% preferred 5% dextrose, while 40.6% had experience with desmopressin (DDAVP). **Conclusion:** Significant variation exists in HTS use for severe symptomatic hyponatraemia in the UK, deviating from guidelines, especially regarding a second bolus without assessing the first bolus's biochemical impact. European guidelines warrant an evidence-based revision to harmonize clinical practice.

References: (1) Spasovski et al. Hyponatraemia Guideline Development Group. Clinical practice guideline on diagnosis and treatment of hyponatraemia. Eur J Endocrinol. 2014 Feb 25;170(3):G1-47. doi: 10.1530/EJE-13-1020(2) Arshad et al. Letter to Editor: Call for review of European Society of Endocrinology guidelines for symptomatic hyponatraemia. Endocrine. 2023 Apr;80(1): 234-235. doi: 10.1007/s12020-023-03322-w

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