THE INCIDENCE OF CENTRAL ADRENAL ININSUFFICIENCY IN EUVLAEMIC HYONATRAEMIA.

RESULTS OF A LARGE PROSPECTIVE STUDY


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INTRODUCTION

• The syndrome of inappropriate antidiuretic hormone (SIAD) is the commonest cause of hyponatraemia. Data on SIAD is mainly derived from retrospective studies, often with poor ascertainment of the minimum criteria for the correct diagnosis.

• Reliable data on the incidence of adrenal failure in SIAD is unavailable.

• The aim of the study was to define the prevalence of undiagnosed adrenal insufficiency.

PATIENTS

This is a prospective, single centre, observational study of all consecutively hospitalized patients with SIAD, with hyponatraemia (≤ 130 mmol/L) in Beaumont Hospital, from January 1st to October 1st 2015.

INVESTIGATION OF ADRENAL FUNCTION

If the diagnostic parameters suggested SIAD, thyroid function tests and 0900h plasma cortisol measurements were requested. A 0900h cortisol > 300 nmol/l (>10.9 mcg/dl) was regarded as unlikely to reflect adrenal insufficiency of sufficient severity to cause hyponatraemia.

Where 0900h plasma cortisol was < 300 nmol/l (<10.9 mcg/dl), a short synacthen test was performed. In addition, a short synacthen test was performed in patients with 0900h serum cortisol between 300 (10.9 mcg/dl) and 414 nmol/l (15 mcg/dl) if other parameters, such as hyperosmolal or hypoglycaemia, were suggestive of adrenocortical insufficiency. Normal response was defined as a cortisol peak above 500 nmol/l. 30 minutes post synacthen injection.

In patients with chronic oral glucocorticoid, SIAD patients were regarded as steroid deficient if they fulfilled the following criteria:

1) Prolonged adrenosuppressive doses of oral steroids (>4 mg prednisolone or equivalent). 2) There was failure to intervene with stress dose of steroids, as per good clinical practice. 3) There were additional clinical features, such as hypotension, hypoglycaemia or failure to respond to resuscitative measures, which suggested steroid insufficiency. 4) There was clear evidence of immediate improvement in all of the above with steroid therapy.

RESULTS

Data were obtained prospectively in 1323 patients who were admitted with hyponatraemia ≤130 mmol/L, or who developed hyponatraemia during hospital admission. 573 (43.3%) admission episodes in 516 patients were assigned an initial diagnosis of SIAD, based on classic diagnostic criteria.

EUVLAEMIC HYONATRAEMIA DUE TO NEW ONSET HYPOTHYRIOSMUS

EUVLAEMIC HYONATRAEMIA DUE TO BACKGROUND OF CHRONIC EXOGENOUS GLUCOCORTICOID ADMINISTRATION

Conclusions

• SIAD is a diagnosis of exclusion. All patients must be investigated to rule out secondary adrenal insufficiency.

• In a large, prospective and well-defined cohort of euvalamic hyponatraemia, undiagnosed secondary adrenal insufficiency co-occurred in 8.8% of cases initially diagnosed as SIAD.

• Undiagnosed pituitary disease was responsible for 1.5% of cases presenting as euvalamic hyponatraemia.

• The relationship between hyponatraemia and premature death is well established, and adrenal crisis in response to acute illness is a major cause of excess mortality in patients with hyponatraemia and adrenal insufficiency.

• Screening for adrenal insufficiency in hyponatraemia not only focuses treatment of the acute episode, but also enables us to identify strategies to improve long term welfare.

REFERENCES