Investigation vignette

A 38 Year old Man Admitted to Accident an Emergency, Confused and Agitated

CASE REPORT

A 38 year old unemployed man was admitted to accident and emergency (A & E) department confused and agitated. He had a past history of hypertension, migrane and seizures which had been treated with carbamazepine 400 mg 8 hourly and atenolol 50 mg daily. His partner had left him on the morning of admission in apparent good health, to return that evening from work to find him confused and agitated.

His vital signs revealed a pulse rate of 100 beats per minute, blood pressure 130/60 and temperature of 37.5°C. He was eye opening in response to his name and responding purposefully to pain. However, he was inattentive and non-responsive to command.

To perform cerebral computed tomography (CT) he was anaesthetised with thiopentone, suxamethonium and vecuronium, and was mechanically ventilated.

The cerebral CT was normal. However a biochemical profile that was performed in the A & E department (Figure 1) led to the diagnosis.

Name	Age	Sex	Time of Collection	Time of Analysis	Date
Mr. J. T.	28	M	1840	1900	25.11.99

Sodium	144	mmol/L	(137 - 145)
Potassium	4.3	mmol/L	(3.1 - 4.2)
Chloride	109	mmol/L	(101 - 109)
Bicarbonate	24	mmol/L	(22 - 32)
Anion Gap	15.3	mEq/L	(8 - 16)
Calc Osmolarity	295	mmol/L	(280 - 300)
Glucose	4.3	mmol/L	(3.0 - 6.0)
Urea	2.3	mmol/L	(3.0 - 8.0)
Creatinine	0.048	mmol/L	(0.05 - 0.12)
Phosphate	1.15	mmol/L	(0.70 - 1.25)
Total Calcium	2.16	mmol/L	(2.10 - 2.55)
Albumin	39	g/L	(39 - 50)
Globulins	43	g/L	(22 - 35)
ALT	< 1	U/L	(10 - 45)
AST	48	U/L	(10 - 45)
GGT	112	U/L	(0 - 50)
ALP	138	U/L	(30 - 100)
Total bilirubin	40	μmol/L	(4 - 20)

Figure 1. Plasma biochemical profile performed on a venous blood specimen taken from the patient on admission

Diagnosis: Vigabatrin overdosage (with an unrecordable plasma ALT)

Vigabatrin (Gamma-vinyl GABA) is an irreversible inhibitor of gamma-aminobutyric acid (GABA) transaminase, increasing the concentration of GABA (an inhibitory neurotransmitter) in the brain, which is produces an important antiepileptic effect.[1] Vigabatrin also blocks the L-alanine binding site of alanine aminotransferase (ALT) and reduces the measured plasma level of ALT in normal individuals,[2] epileptic patients,[3] and in patients with hepatic failure[4] The reduction is profound with an overdose.[5] However, the effect of vigabatrin on aspartate amino-transferase is minimal.[6]

As vigabatrin overdose is the only disorder that can cause an unmeasurable plasma ALT, it high-lighted the diagnosis in this case. Following the CT scan the patient was extubated and observed overnight in the intensive care unit, to be discharged to the ward next morning, lucid and co-operative.

When interviewing the patient on the morning of his discharge, he stated that he had been prescribed vigabatrin (which had been increased from 500 mg daily to 500 mg 8-hourly) to control a recent increase in seizure activity. During the previous few days he had become depressed and had taken 100 vigabatrin 500 mg tablets on the morning of the admission.

As vigabatrin is associated with a higher than normal incidence of depression and psychosis, it may have explained the recent episode of depression in this patient.[7] Vigabatrin overdosage has been reported before[8,9] and may be associated with agitation, confusion, vertigo, tremor, psycosis and rarely coma.

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