

How common is immobilization hypercalcaemia on a brain injury rehabilitation unit? – a review of 337 patients

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Introduction: Immobilization hypercalcaemia (IH) as a cause of high calcium levels is considered after exclusion of conditions such as metastatic cancer, multiple myeloma and hyperparathyroidism. It is rare and is confirmed by documentation of low levels of parathyroid hormone (PTH) and vitamin D. The true prevalence of IH in brain-injured patients is unknown and an audit was conducted to establish this in a cohort of such patients at the National Rehabilitation Hospital.

Material and methods: A retrospective review was performed with data collected from 337 in-patients with acquired brain injury (ABI) treated at the NRH between 2007 and 2012. Information was obtained from hospital medical records and a review of patients' blood results on admission. Hypercalcaemia was defined as a serum corrected calcium greater than 2.5mmol.

Results: Records of 337 in-patients with ABI were examined. 235 (70%) had a serum calcium estimation on admission and mean serum corrected calcium was 2.39 mmol/L. 38 patients (11.3%) of those tested were identified as having hypercalcaemia ranging from 2.51 to 3.17 mmol/L with a mean of 2.60 mmol/L. Of these only 3 (7.89%) had further investigations including vitamin D, parathyroid hormone and bone specific ALP estimations. Only 2 cases (0.6%) of IH were confirmed.

Conclusion: More than a quarter of ABI in-patients did not have their calcium levels estimated during their rehabilitation admission. Of those in whom hypercalcaemia was detected (11%) fewer than 8% were tested in sufficient detail to determine its cause. Acknowledging the limitations of this series we note that fewer than 1% of ABI in-patients have proven IH. This audit demonstrates the need for (i) greater awareness of potential biochemical disturbances in immobile patients and (ii) more focused investigation and treatment of such abnormalities.