The Newcastle upon Tyne Hospitals NHS
NHS Foundation Trust

What is the prevalence of severe post-operative hypocalcaemia in patients who have undergone parathyroid surgery or a total thyroidectomy at the RVI, Newcastle? Does vitamin D play a role?

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Background

- **Hypocalcaemia** is a common electrolyte disorder that can be caused by the "**hungry bone syndrome**" following a parathyroidectomy or **rapid bone remineralization** after a total thyroidectomy.
- It has been postulated that routine **vitamin D and calcium supplementation** may reduce the rate of symptomatic post-operative hypocalcaemia and that some postoperative hypocalcemic crises may reflect **undiagnosed severe vitamin D deficiency** (1).

Objectives

- To establish **the prevalence of post-operative severe hypocalcaemia,** defined as requiring IV calcium following thyroidectomy or parathyroidectomy according to *the local post-operative hypocalcaemia protocol* (2).
- To explore the relationship between **severe post-operative hypocalcaemia and vitamin D status** as defined by the *NOS guideline* (3).

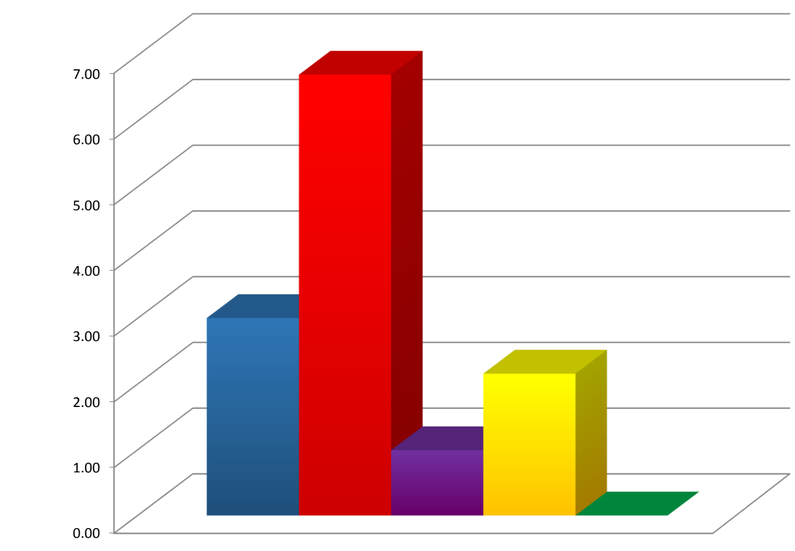
Methods

- Patient sample: 466 patients, ward 44, RVI, Newcastle, operated 7/12/2010 – 7/01/2014.
- List of **patients who received IV calcium** obtained from e-prescribing records.
- Data was collected from paper notes and electronic records using a proforma.
- **Limitations**: timescale and a small number of patients with severe post-operative hypocalcaemia.

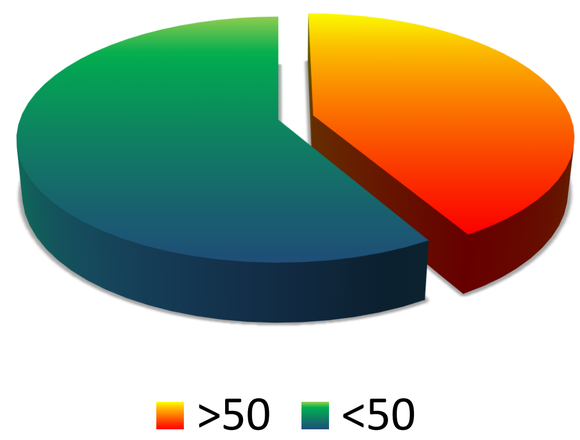
Results

- **14 out of 466** patients required IV calcium following parathyroidectomy or thyroidectomy

Per cent of patients who had severe hypocalcaemia



Perioperative vitamin D levels



Discussion

- Severe post-operative hypocalcaemia requiring IV calcium is currently a **rare event.**
- Relatively higher prevalence in patients who had a **total thyroidectomy** suggests that they should be monitored more closely.
- **Vitamin D insufficiency was common** among patients who required IV calcium post-operatively.
- Correction of vitamin D levels by the time of surgery **did not provide 100% protection** against severe post-operative hypocalcaemia.
- **Further work is needed** to explore the relationship between post-operative hypocalcaemia and vitamin D status.

References: 1)Carroll, R, Matfin, G Endocrine and metabolic emergencies: hypocalcaemia. Ther Adv Endocrinol Metab 2010; 1:29–33. 2) Endocrine Surgery. Prof Lennard and Mr Bliss, Post-op hypocalcaemia following thyroidectomy and parathyroidectomy – guidance for junior medical staff, displayed on ward 44, RVI, Newcastle. 3) National Osteoporosis Society, Vitamin D and bone health: a practical clinical guideline for patient management, 2013, http://www.nos.org.uk/document.doc?id=1352 (accessed on 20/02/2014)