

An Analysis of Hypocalcaemia Post Total Thyroidectomy: Diagnosis & Predictors

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BACKGROUND

Post-thyroidectomy hypocalcaemia is a common complication with significant short and long term complications. The aim of this study was to determine the incidence and predictors of post-thyroidectomy hypocalcaemia (corrected calcium <2.1mmol/l).

METHODOLOGY

A total of 183 patients who underwent total thyroidectomy between 2012 and 2015 in a national general hospital were included in this retrospective study. Clinical and biochemical data were obtained from electronic and hard copy medical records.

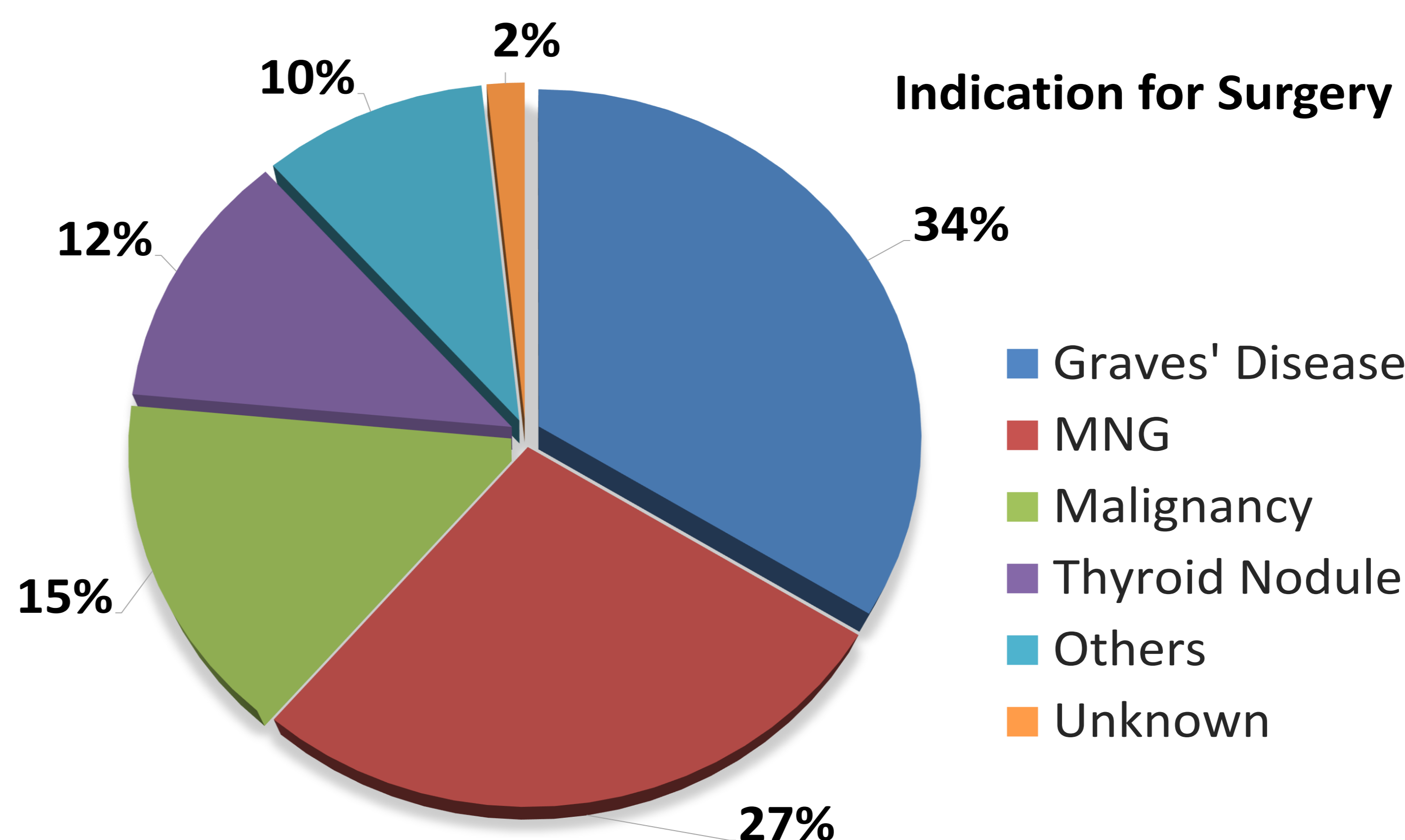
RESULTS

Out of a total of 183 patients, 142 (77.6%) were female, while 41 were males (22.4%). Ages ranged from 15 to 84 years, with a mean of 50.6 years (SD 15.84 years). There was variation in the incidence of hypocalcaemia dependent on the timing of measurement of calcium on post-op day 1 (POD1) and the measuring of calcium on subsequent days. The incidence of post-operative hypocalcaemia on day 1 was 26.2% (n=48). The indications for surgery included Graves' disease (62 patients, 33.88%), multi-nodular goitre (50 patients, 27.32%), malignancy (28 patients, 16.39%), the presence of a thyroid nodule (22 patients, 12.02%), hyperparathyroidism (18 patients, 9.83%) and in 3 patients (1.63%) the indication was unclear.

A lower preoperative uncorrected calcium was associated with post-thyroidectomy hypocalcaemia (p=0.048). However it was found that the incidence of post-thyroidectomy hypocalcaemia was underestimated by 55.5% if only POD1 measurement was used.

CONCLUSIONS

Measuring calcium on POD1 may miss patients who would subsequently develop hypocalcaemia. Other possible contributing factors for post-op hypocalcaemia, including age, gender, histology and indication for surgery were not found to be statistically significant, and could not be used to predict who will develop hypocalcaemia. This emphasises the need for stringent guidelines for assessing and managing patients undergoing total thyroidectomy and possible associated hypocalcaemia.



183 patients underwent total thyroidectomy

48 patients had low Ca on Day 1 post-op

41 patients were discharged on Ca supplementation

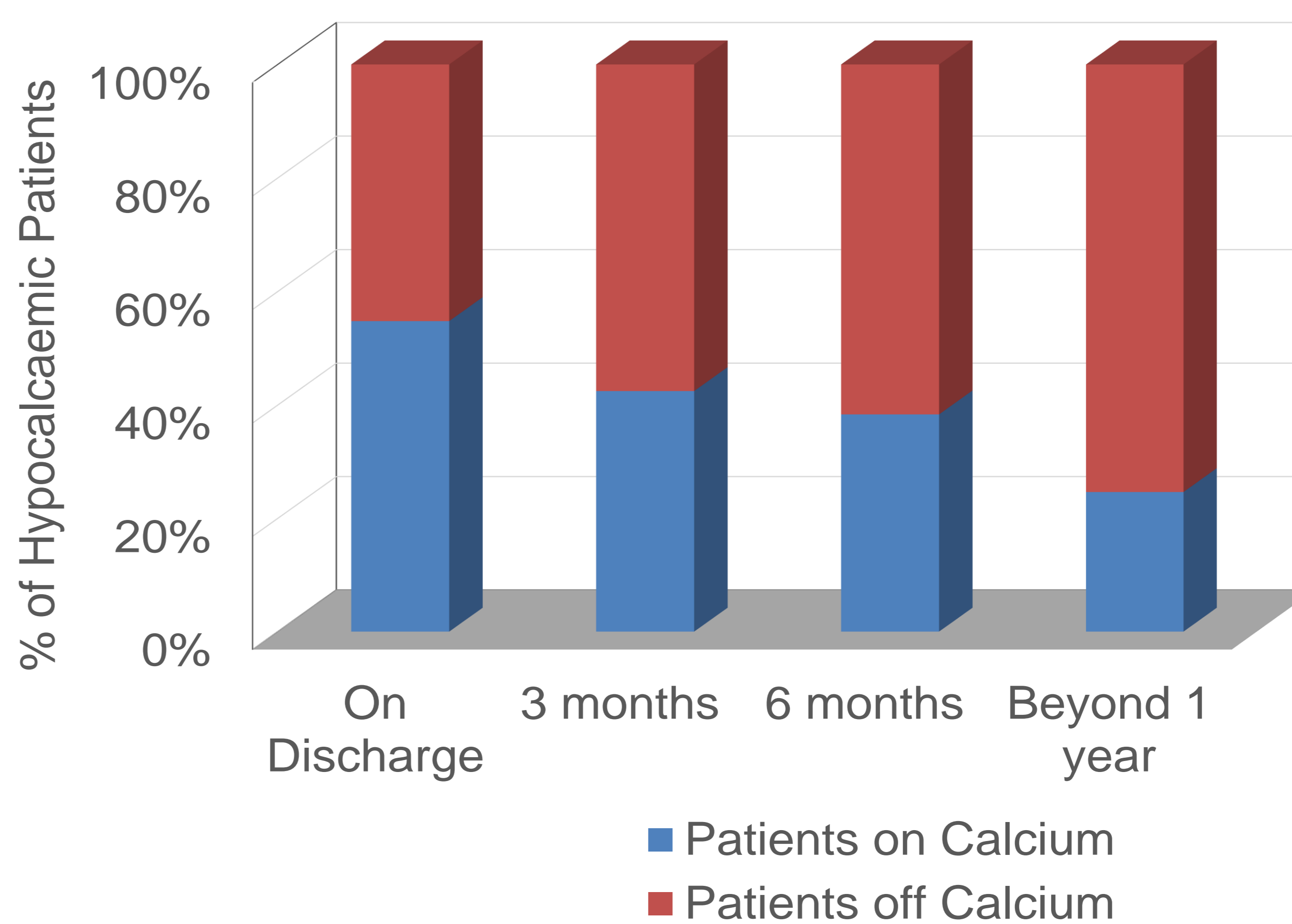
73 patients were hypocalcaemic during study

31 patients required Ca²⁺ for >3 months

28 patients required Ca²⁺ for >6 months

18 patients required Ca²⁺ for >12 months

Number of Patients on Calcium



- Measuring Ca on post-operative day 1 may miss patients who develop hypocalcaemia
 - Need to adhere to stringent guidelines for assessment and management of patients