Conventional treatment of chronic hypoparathyroidism results in suboptimal calcium homeostasis

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BACKGROUND

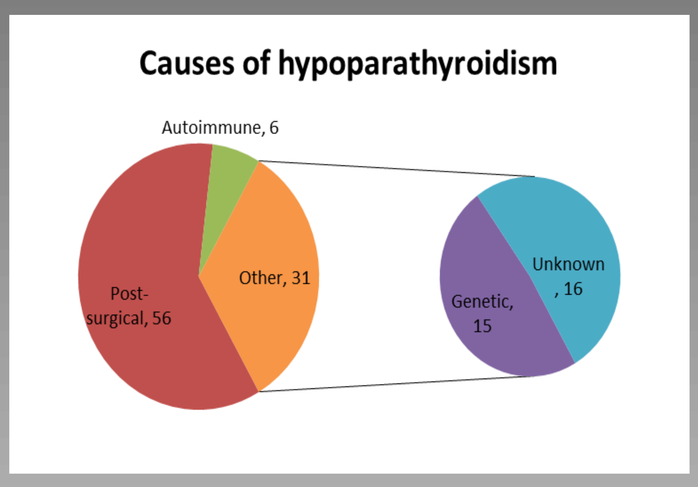
Conventional treatment for chronic hypoparathyroidism (CHP) is activated vitamin D analogues and calcium supplementation and not replacement of the lacking hormone, as done in other hormonal deficiency states.

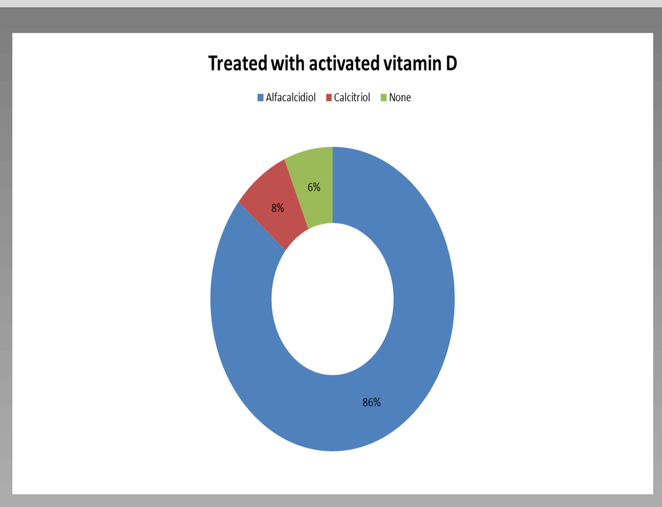
OBJECTIVES

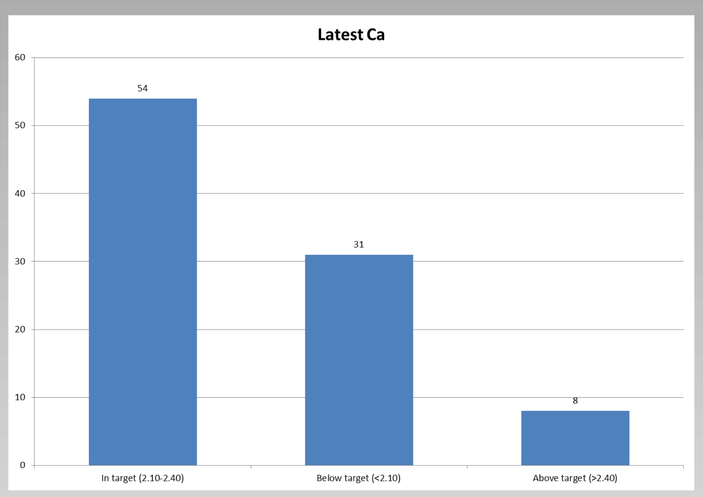
Retrospective evaluation of CHP management in line with European Society of Endocrinology guideline[1] was undertaken in a tertiary centre, to assess adequacy of calcium homeostasis and morbidity.

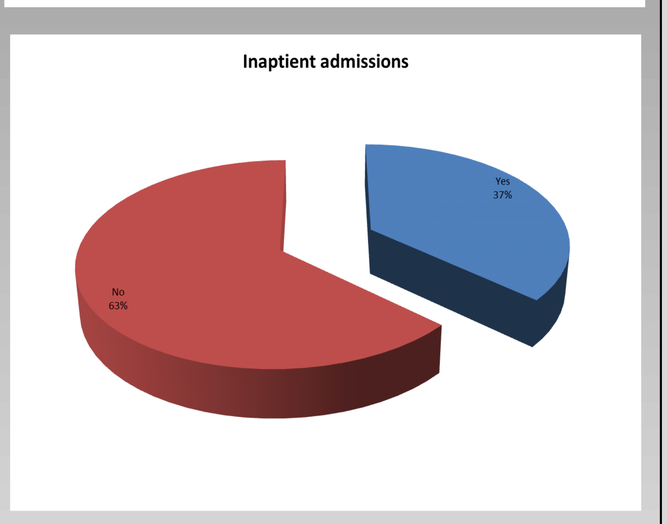
METHODOLOGY

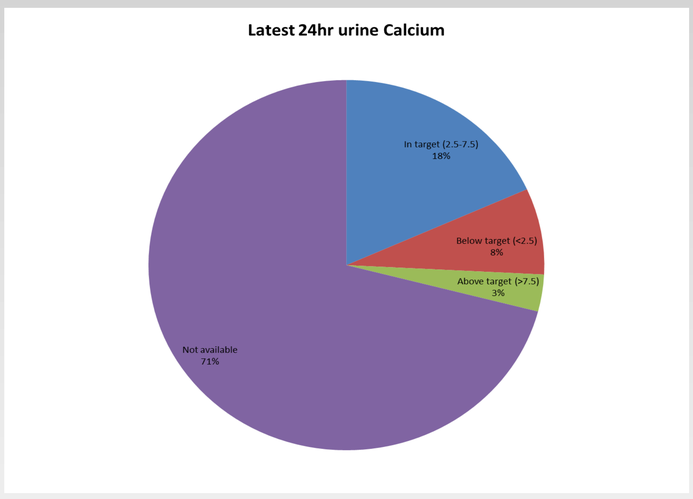
Retrospective case note and electronic record review of 93 consecutive hypoparathyroidism cases (Postsurgical-56, Genetic-15, Autoimmune-6, Unknown-16) who had at least 12 months of treatment between 1989 and 2017, was undertaken; audit no 9217.

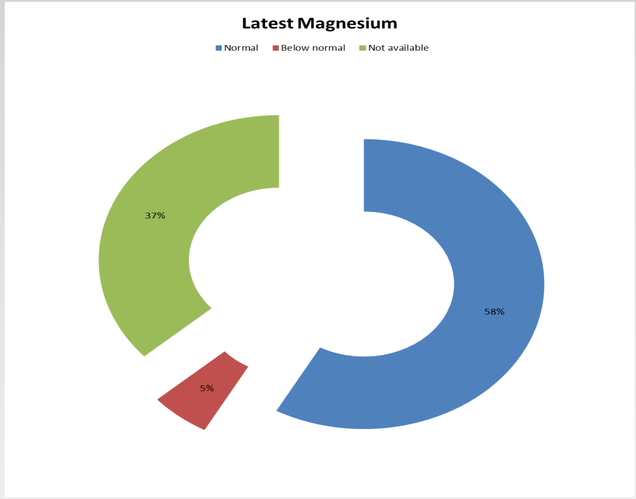












RESULTS

- *n*=93 (67 females, 26 males), mean age 53 years (17-94yrs) at follow up, mean duration of follow-up 13.5 years (1.2-74.2 years).
- 94%(87/93) patients were treated with Vitamin D analogues (86% alfacalcidiol, 8% calcitriol) with or without calcium salts and 6%(6/93) treated with only calcium salts.
- At follow up, target range serum calcium (2.10 – 2.40 mmol/L) was achieved in 58% (54/93); 24hr urinary calcium 63% (17/27 performed); serum phosphate 81% (75/93); magnesium 92% (54/59 performed) and vitamin D 54% (43/79 performed).
- The test was not performed in 71% (66/93) for 24hr urinary calcium; 37% (34/93) for magnesium and 15% (14/93) for vitamin D.
- 365 hypocalcaemia (<2.0 mmol/L) episodes in 62%(58/93); 56 hypercalcaemia (>2.60 mmol/L) episodes in 18% (17/93) patients; 37% (34/93) of patients required hospital admissions related to calcium dysregulation resulting in 253 total inpatient days over last 8 years (2010-2017).
- There was progression to CKD3 (16/93) and CKD4 (2/93); Renal stones 3; Nephrocalcinosis 1; Cataracts 4; unrelated death 5.

DISCUSSION

1. In our case series, conventional CHP management resulted in suboptimal calcium homeostasis in half of patients and more than 1/3rd required hospital admissions for calcium regulation
2. Suboptimal monitoring of 24 hr urine calcium and magnesium was noted.
3. Regular monitoring of the biochemical parameters and adjustment of the medications may improve the outcome.
4. Evidence seems to be growing for recombinant human parathyroid hormone (1-84) for challenging cases with labile calcium levels.[2]

REFERENCES

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2. Mannstadt M, Clarke BL, Vokes T, et al. Efficacy and safety of recombinant human parathyroid hormone (1–84) in hypoparathyroidism (REPLACE): a double-blind, placebo-controlled, randomised, phase 3 study. *Lancet Diabetes Endocrinol*. 2013;1:275–283.

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