INVESTIGATION OF SUSPECTED HYPERPARATHYROID DISEASE

INTRODUCTION

NICE NG132 (2019) States to measure serum adjusted calcium where patients present with any of the following:

- symptoms of hypercalcaemia, such as thirst, frequent or excessive urination, or constipation
- osteoporosis or a previous fragility fracture
- a renal stone
- an incidental finding of elevated albumin-adjusted serum calcium (2.6 mmol/litre or above).
- Chronic non-differentiated symptoms e.g. fatigue, mild confusion, depression, bone/muscle pain, insomnia…

Serum adjusted calcium should be repeated if on the first occasion the result is:

- 2.6 mmol/litre or above or
- 2.5 mmol/litre or above and features of primary hyperparathyroidism are present.

PTH should be measured in primary care with a concurrent serum adjusted calcium if:

- Adjusted calcium is 2.6 mmol/litre or above on at least 2 separate occasions or
- Adjusted calcium is 2.5 mmol/litre or above on at least 2 separate occasions and primary hyperparathyroidism is suspected.

If the patient is **hypercalcaemic (>2.6 mmol/L)**, the PTH result may give an indication as to the cause:

- Raised PTH: consistent with primary hyperparathyroidism. Suggest referral to endocrinologist. Note that post-vitamin D insufficiency, secondary hyperparathyroidism may occur and result in borderline elevated calcium until correction occurs.
- PTH within the reference range: cannot rule hyperparathyroidism out, discussion with endocrinology advised, particularly if symptoms of primary hyperparathyroidism are present. Familial benign hypercalcaemia should also be considered.
- Low PTH: non-parathyroid cause of hypercalcaemia.

All patients with elevated PTH and calcium (excluding secondary HPTH in renal dialysis), or a PTH within the reference range and elevated serum calcium should be referred to the Endocrinology team for further evaluation:

1. Confirm raised corrected calcium and PTH on fasting sample
2. Exclude FBH (see Urine Calcium Clearance Ratio)
3. Exclude phaeochromocytoma (24hr urinary catecholamines)

FAMILIAL BENIGN HYPERCALCAEMIA

FBH can be biochemically similar to primary hyperparathyroidism, but commonly occurs in younger patients. Patients with FBH may have mildly elevated calcium and PTH may be slightly elevated or within the reference range. Endocrinology should be contacted for possible cases of FBH and urine calcium clearance ratio performed to help distinguish between this benign condition and Primary Hyperparathyroidism.

REFERENCES

1. Marx SJ. Familial hypocalcuric hypercalcaemia. In Heath and Marx, eds. Clinical Endocrinology, Vol 2, Calcium disorders. London: Butterworth Scientific, 1982: 217.
2. Gunn IR. Familial benign hypercalcaemia - an under-diagnosed condition? *Proc UK NEQAS*

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3. Marx SJ. Letter to the editor: Distinguishing typical primary hyperparathyroidism from familial hypocalciuric hypercalcemia by using an index of urinary calcium. J Clin Endocrinol Metab. 2015 Feb;100(2):L29-30.
4. NICE NG132 2019: Hyperparathyroidism (primary): diagnosis, assessment and initial management.