Pre-referral investigations

Approximately 80% of all endocrine referrals in secondary care involve a dozen or so common themes, seen reasonably often in primary care for which some pre-investigation may be performed. Although it is desirable to have appropriate investigations prior to referral, this may not be feasible with GP workload, lack of certainty over appropriate testing or lack of access to certain tests.

Primary hyperparathyroidism

Presentation

Primary Hyperparathyroidism (PHPT)

Note

- Diagnosis of primary hyperparathyroidism is confirmed biochemically with elevated serum (albumin-adjusted) calcium and inappropriately high parathyroid hormone (PTH) levels.
- Normal serum intact PTH in the setting of hypercalcaemia does not rule out PHPT.
- Vitamin D deficiency can cause PTH elevation with an normal serum corrected calcium so vitamin D deficiency should be corrected (high dose replacement) and serum calcium and PTH level rechecked one to two months after correction.
- Some medications can cause hypercalcaemia. Thiazide diuretics in particular should be discontinued (if safe to do so) and blood tests repeated 4-6 weeks later.
- Symptoms are not always resolved following parathyroid surgery

First line investigations

Serum calcium (albumin-adjusted), serum intact PTH, serum vitamin D, urea & electrolytes

Second line investigations (could be facilitated by secondary care local agreement)

Blood tests: serum alkaline phosphatase, serum phosphorus,
Urine tests (if vitamin D replete): 24-hour urinary calcium excretion / urinary calcium/creatinine clearance ratio.
Radiology: Bone DXA scan, kidney ultrasound scan (? Nephroclacinosis/stones)

Actions

- Correct vitamin D deficiency and re-check serum calcium and intact PTH levels. If serum calcium remains high with inappropriately elevated PTH, manage as PHPT.
- Ensure patient is advised to increase their fluid intake to 2-3L a day.
- Advise women of child-bearing age to avoid pregnancy.
- Indications for surgery: symptomatic disease, end organ damage osteoporosis/nephrocalcinosis (even in the absence of symptoms).
- Corrected serum calcium repeatedly >2.85 mmol/L

Referral to endocrinology if:

1. All patients with confirmed PHPT who may be candidates for parathyroid surgery
2. Symptomatic patients who are not fit for surgery but would benefit from medical therapy.
3. Patients with primary hyperparathyroidism who do not meet these referral criteria may still need regular monitoring (manage as per local guidelines)

Key information to include Symptoms, previous calcium (and PTH if available) measurements and any second line investigations
Consider referral to other services if: Diagnosis established and surgery being considered – refer to local pathway for parathyroid surgery
Red flags to prompt urgent referral: Calcium levels >3.0mmol/L Calcium levels >2.85mmol/L and symptomatic or with end-organ damage (kidney/bone)