

NEW ADULT HYPOCALCAEMIA ADJUSTED CALCIUM < 2.14 mmol/L

BOX 2

SOME CAUSES (List Not Exhaustive)

- Hypomagnesaemia
- Vitamin D deficiency (e.g. lack of sunlight; dietary; mal-absorption; CKD; liver dis-ease; anticonvulsants)
- Drugs (see BOX 3)
- Hungry bone syndrome
- High phosphate intake
- Acute pancreatitis
- Early rhabdomyolysis
- Hypoparathyroidism

BOX 3

SOME DRUG CAUSES (List Not Exhaustive)

- Long term PPI (causing hypomagnesaemia)
- Furosemide/loop diuretics
- Anticonvulsants (eg phenytoin, carbamazepine, valproate)
- Bisphosphonates, calcitonin.
- Cinacalcet
- Denosumab

BOX 1

HYPOCALCAEMIA SOME SIGNS & SYMPTOMS

Signs

- Positive Trousseau's and Chvostek's sign
- ECG changes (prolonged QT interval) and arrhythmia

Symptoms

- Peri-oral and/or digital paraesthesia
- Tetany, carpopedal spasm and muscle cramps
- Laryngospasm
- Seizure

1.81 - 2.13 mmol/L
 and asymptomatic

≤ 1.8 mmol/L
 and/or symptomatic
 (BOX 1)

Repeat measurement to confirm result and consider cause (BOX 2 & 3). **If cause unknown**, consider requesting:

- Bone profile
- Magnesium
- U&E, LFT
- Vitamin D (check not requested in last 4 months)
- PTH

Adjusted Ca ≤ 1.8 mmol/L will be phoned to GP surgery or collaborative and a serum Mg added.

MEDICAL EMERGENCY

If acutely unwell/symptomatic:

Admit to A&E immediately.

If not acutely unwell: repeat Adj. Ca measurement urgently* if inconsistent with a previous calcium result within last 3 months. Otherwise, seek urgent specialist advice and consider admitting to A&E.

Low Magnesium

Prolonged hypomagnesaemia can cause hypocalcaemia. Look for cause of hypomagnesaemia (see hypomagnesaemia protocol). Correction of magnesium is necessary for correction of calcium.

Low Vitamin D

See metabolic bone guidelines on optimising adult vitamin D levels (<http://tinyurl.com/sth-mb-gl>).

* Within 5 days is suggested, or sooner if calcium is towards the lower end. Use clinical judgement to guide

**Normal Mg, Vitamin D,
 U&E, LFT**

PTH Raised

Consider:

1. Borderline Vitamin D deficiency
2. Drugs e.g. bisphosphonates, anticonvulsants.
3. Early rhabdomyolysis
4. High phosphate intake (rare)
5. Pseudohypoparathyroidism (very rare)

PTH Low or Normal

Consider:

1. Drugs e.g. cinacalcet
2. Hungry Bone Syndrome
3. Hypoparathyroidism (rare)

* Advise within 24 hours

The duty biochemist can be contacted via BHNFT switchboard on 01226 730000