NEW ADULT HYPOCALCAEMIA ADJUSTED CALCIUM < 2.14 mmol/L

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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

1.81 - 2.13 mmol/L and asymptomatic

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

Adjusted Ca

rum Mg added.

Repeat measurement to ≤ 1.8 mmol/L will confirm result and consider be phoned to GP cause (BOX 2 & 3). If surgery or collabcause unknown, consider orative and a serequesting:

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

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

MEDICAL EMERGENCY If acutely unwell/symptomatic:

Admit to A&E immediately. If not acutely unwell: repeat Adi. 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 hypomag nesaemia can cause hypocalcaemia. Look for cause of hypomagnesaemia (see hypomagnesaemia protocol). Correction of magnesium is necessary for correction of calcium.

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

Low Vitamin D

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

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

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

SOCIETY FOR ENDOCRINOLOGY ENDOCRINE EMERGENCY GUIDANCE: Emergency management of acute hypocalcaemia in adult patients in: Endocrine Connections Volume 5 Issue 5 (2016) (bioscientifica.com) Accessed 29th November 2023. Hannan, F.H. and Thakker, R.V., 2013. Investigating hypocalcaemia. BMJ, 346:f2213. Smellie, S. et al., Primary care and laboratory medicine. Venture publications, 2010. Joint Formulary Committee . British National Formulary (online) London: BMJ and Pharmaceutical Press http:// www.medicinescomplete.com> [Accessed 29 November 2023].