

Vitamin D deficiency is common in frail institutionalised older people in northern Sydney

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TO THE EDITOR: Although treatment with vitamin D has been shown to reduce hip fracture risk in elderly institutionalised people,¹ there has been a perception that vitamin D deficiency is generally uncommon in countries with high sunlight exposure such as Australia.

We studied the prevalence of vitamin D deficiency in older people in residential aged-care facilities (hostels and nursing homes) in the northern Sydney area as part of the FREE study (Fracture Risk Epidemiology in the Elderly), a prospective study of fracture incidence in more than 2000 participants. Here, we report baseline serum 25(OH) vitamin D concentrations in the first 386 participants, determined in partially purified lipid extracts using a competitive protein binding assay.²

The sample comprised 252 women and 134 men (mean \pm SE age, 86.7 \pm 0.6 v 81.2 \pm 0.7 years, respectively; $P < 0.001$). The mean serum 25(OH)D level was 17 nmol/L (SD, 12) and median serum 25(OH)D level was 15 nmol/L (interquartile range, 9 to 22). Vitamin D deficiency (defined as a serum 25(OH)D concentration < 28 nmol/L) was present in 86% of women and 68% of men. There was no significant difference in serum vitamin D

levels between women in nursing homes versus women in hostels, nor between men in nursing homes versus those in hostels. Although serum vitamin D levels were low throughout the year, a small rise was observed in summer ($P < 0.01$). Length of stay in the residential facility was not a predictor of serum vitamin D level. Mean parathyroid hormone levels were 93 pg/mL (normal range, 12–72 pg/mL) and rose when vitamin D levels dropped below 21 nmol/L, indicating secondary hyperparathyroidism.

A number of previous studies have suggested a high prevalence of vitamin D deficiency in older institutionalised Australians in southern States,^{2–4} but we are unaware of any published studies in Sydney (latitude 33°S). However, as the prevalence of vitamin D deficiency in older people living in the community in Geelong is low,⁵ our study suggests that factors like confinement indoors is more important than latitude.

Given the relationship between vitamin D status and fracture, with more than 72 500 nursing home residents and 60 200 hostel residents in Australia in 1997, our findings indicate that vitamin D deficiency represents a significant public health problem in elderly institutionalised Australians regardless of geographical location. Importantly, this problem could be solved relatively simply by measures such as a short period of daily sunlight exposure or giving moderate doses of vitamin D annually to nursing home and hostel residents.

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Perhexiline toxicity related to citalopram use

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TO THE EDITOR: Selective serotonin reuptake inhibitors (SSRIs) are commonly prescribed for patients with cardiovascular disease, including those taking perhexiline for severe ischaemic heart disease. Elevated serum perhexiline concentrations have been observed during therapy with the SSRIs fluoxetine and paroxetine, which are known to be strong inhibitors of cytochrome P450 2D6, the enzyme system responsible for the hepatic metabolism of perhexiline.¹ The Adverse Drug Reactions Advisory Committee has received five reports of a possible interaction between perhexiline and SSRIs, but none of these involved the SSRIs citalopram or fluvoxamine, which are generally considered to be weak inhibitors of cytochrome P450 2D6. I describe here a case of perhexiline toxicity that occurred within 10 days of starting citalopram therapy.

An 82-year-old man was admitted to hospital for drainage of a femoral abscess. His medical history included bilateral hip replacements, ischaemic heart disease, hypertension, renal artery stenosis, renal calculi, gout, gastroesophageal reflux disease and prostate cancer. His medications included (daily) aspirin 100 mg, isosorbide mononitrate 120 mg, pravastatin 40 mg, allopurinol 300 mg, celecoxib 200 mg, lorazepam 2 mg, nitrazepam 10 mg; (twice daily) perhexiline 100 mg; and paracetamol and tramadol as needed.

On Day 51 after admission the patient underwent first-stage revision of an infected hip implant under general anaesthesia, and on Day 60 citalopram was commenced (10 mg daily for four days, then 20 mg daily). On Day 70, the patient complained of diarrhoea, nausea and dizziness. Citalopram was discontinued but the nausea was slow to settle. After a perhexiline assay on Day 75 revealed a high serum concentration (see Box), the perhexiline dose was reduced to 100 mg daily and the patient's nausea settled.

Previous perhexiline concentrations on a dose of 100 mg twice daily had ranged from 0.29 to 0.34 mg/L over a two-year period. Tests of renal and hepatic function were normal throughout the patient's hospital stay. While in hospital, the patient was given

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