THE CONTRIBUTION OF PARATHYROID HORMONE TO THE CIRCADIAN RHYTHM OF BONE TURNOVER

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Introduction
Bone turnover is diurnally regulated with a peak in both the markers for osteoblast and osteoclast activity in the early morning and a nadir in the late afternoon. Potential candidates to control this circadian rhythm are parathyroid hormone (PTH), growth hormone (GH), cortisol and prolactin (PRL).

Methodology
To examine the influence of PTH on this rhythm 6 patients with hypoparathyroidism and 6 matched controls were investigated over a 24 hours. The bone formation markers Procollagen I carboxy-terminal peptide (PICP), osteocalcin, PTH, GH, PRL and cortisol were sampled hourly.

Results
The results demonstrated that PICP (ANOVA p< .0005) and osteocalcin (p<.0001) underwent a clear circadian rhythm in the control groups whereas in the hypoparathyroid patients there was no detectable rhythm to the secretion of PICP. Both mean osteocalcin and mean PICP were significantly lower in the patient group versus controls. The circadian rhythm of GH, PRL and cortisol was unchanged between the two groups.

Conclusions
The circadian rhythm of PICP is tightly regulated by PTH and in its absence PICP is secreted at lower levels without a diurnal variation. The low levels of PICP and osteocalcin together reflect diminished bone formation in the absence of PTH.

FOLLOW-UP OF ELDERLY FALLERS IN HOSPITAL

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Introduction
Falls in hospital among the elderly, associated with underlying medical illnesses. Few studies have examined the outcome of these patients following discharge from hospital. We examined the outcome of a group of fallers on a Geriatric ward in a district hospital and compared it to a group of patients who had no fall.

Methodology
Over a three week period we prospectively examined 193 admissions of which there were 40(20 males) individually reported in-patient falls. Three months following their admission we followed up these patients to see where they had been discharged to. We also documented illnesses, mental test score (MTS), drug therapy, ECG abnormalities in the group who fell.

Results
28% of the fallers had died and 22% of the non-fallers died.
35% of fallers and 63% of non-fallers were discharged to their original residence (p<0.01). There was no statistical difference in age between those who fell and those who fell and didn’t die. There was no difference in illness, MTS, medication use or ECG abnormalities between the two groups.

Conclusion
Elderly patients who fall in hospital are less likely to return to their original residence than those who do not fall. This study has not shown an increase in mortality at three months in fallers.

PREVALENCE OF FALLS IN PARKINSON’S DISEASE

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Introduction:
Parkinson’s disease (PD) is an independent risk factor for recurrent falls in older adults. We set out to investigate the frequency of falls in patients with PD attending our movement disorders clinic.

Methods:
One hundred and three patients were invited with their carers to complete a questionnaire. Patients were ≥ 65 yrs (range 65 - 89 yrs, mean 72 ± 0.5). Men outnumbered women 2:1.

Results:
58% of patients had experienced a fall over the previous 6 months. This increased to 71% in those with PD of ≥ 5 yrs. No significant difference in age between the fallers and non-fallers (71.5 ± 71 7 yrs, CI -2.28, 1.87) was demonstrated. Although the majority (50%) of fallers reported falling less than once monthly, over one fifth were experiencing falls at least once daily.

Falls was significantly related to duration of PD; the group of fallers had a mean duration of illness of 10.5 ± 0.8 yrs compared to 5 ± 0.47 yrs in non-fallers (CI 3.48 to 7.02, p=0.001 DF=97). In contrast the frequency of falls correlated poorly with duration of disease (r= 0.344).

Falls was not related to dopaminergic medication (x² = 2.94, p > 0.05).
Similarly no relation between hypnotic use and falls was demonstrated. In contrast the use of anti-depressants was associated with increased falls (x² = 8.46 , p < 0.01). However the number of patients on hypnotics and antidepressants was small and conclusions should remain guarded.

Conclusions:
Falls in older patients with PD is very common. The prevalence but not frequency of falls increases with duration of illness and there is no correlation with age or dopaminergic medication.