

specialist nurse. The cause of failure to adhere was noted and the patient was advised appropriately. Overall, 47 patients (20%) were reported at one or more visits not to have adhered to the instructions to take the therapy. The non-adherence rates at successive visits were 12%, 8%, and 6% ($p=0.02$, first visit compared to third visit). The non-adherence rates for therapy with bisphosphonates ($n=150$), HRT (and related compounds) ($n=67$), and vitamin D/calcium (and related treatments) ($n=23$) were 24%, 15% and 4%. The most common reasons for patients not adhering to bisphosphonate therapy were side effects (12 events), taking the treatment incorrectly (17 events), and repeat prescription not renewed correctly (8 events). The reasons for patients not adhering to HRT therapy were side effects (7 events) and failure to begin treatment (6 events).

Bone mineral density was measured before and approximately one year after starting treatment. The annual percentage rates of increase were calculated for the lumbar spine and total hip. The rates were compared according to whether or not the patient had fully adhered to treatment. The mean increase at the lumbar spine was 2.79% for non-adherent patients and 4.29% for adherent patients ($p=0.45$, Mann-Whitney). At the total hip, the increases were 0.30% and 1.21% respectively ($p=0.34$).

These results show a tendency for non-adherence to reduce the effectiveness of osteoporosis therapy, although the difference is not statistically significant. The lack of significant difference between the BMD responses could be explained by early identification of non-adherence, combined with advice and encouragement, when patients attend for nurse monitoring.

We conclude that attendance at the nurse monitoring clinic improves adherence to therapy and that the reasons for non-adherence differ by treatment type. The negative effect of non-adherence on BMD increase may be reduced by careful monitoring.

P111. TOLERABILITY AND COMPLIANCE WITH RISEDRONATE IN CLINICAL PRACTICE

B. Hamilton, K. McCoy, H. Taggart. Osteoporosis Clinic, Belfast City Hospital, Belfast, Northern Ireland, UK

Risedronate is a new aminobisphosphonate licenced for the treatment of osteoporosis. In clinical trials drug related adverse events occurred in 34% of the risedronate treated patients, compared to 29% in the calcium group. These were felt by the patients to be severe enough to discontinue therapy in 17% in both groups.

In order to establish whether similar findings occur in clinical practice we have studied our population of patients taking risedronate to determine the prevalence of side effects and compliance with treatment. Before commencing therapy all patients were given detailed oral instruction on how to take risedronate and, when it became available, the NOS leaflet on risedronate.

100 female patients were included (mean age: 64.5 years, range 40-83 years).

Mean duration of treatment in current users was 44 weeks (range 26-56 weeks) while mean duration of use in the patients who discontinued therapy was 9.5 weeks (range 1-52 weeks).

35 patients had side effects, these included nausea (16), indigestion (3), constipation (4), abdominal pain (4), diarrhoea (7). One patient had gastritis on gastroscopy, and one had a duodenal and gastric ulcer on barium meal. Other side effects included a rash (1), dry skin (1) tongue ulcers (1) leg weakness and cramps (1) and headaches (2). Overall, 27 patients were taking risedronate incorrectly - 20 were taking sips of water rather than a full glass, but none of these patients stopped risedronate due to side effects.

Of the 21 patients who discontinued the medication due to side effects, 5 were taking their medication incorrectly. Two patients were taking risedronate after food and 3 either lay down after

taking risedronate or were unable to stay upright for 30 minutes afterwards. 7 of these patients had re-challenged themselves but only 4 telephoned the clinic regarding problems. 82 were concomitantly on calcium therapy.

In spite of detailed oral instruction and leaflets, a significant number of patients were incorrect in complying with the manufacturers instructions. Dropouts from long-term therapy are often high. Methods of improving long-term compliance need to be found such as contacting all patients after several weeks of treatment.

P112. EFFECT OF INTERMITTENT INTRAVENOUS PAMIDRONATE ON BONE MINERAL DENSITY IN OSTEOPOROSIS OF HYPERPARATHYROIDISM

L. J. John, E. M. C. Manning, W. D. Fraser. Royal Liverpool University Hospital, Prescot St, Liverpool, UK

Persistent untreated hyperparathyroidism has the potential to produce and worsen osteoporosis and fractures. Many patients are unsuitable or unwilling to undergo curative surgery and need medical management. Oral bisphosphonates have been demonstrated to improve the outcome of bone mineral density (BMD) in these patients. Studies have shown the efficacy of intravenous bisphosphonates in improving the BMD in idiopathic osteoporosis but data is lacking regarding their role in osteoporosis associated with or secondary to hyperparathyroidism.

Aim: This study was undertaken to assess the effect of intravenous Pamidronate infusions on BMD and bone turnover in osteoporotic hyperparathyroid patients

Method: Case records of patients, with a diagnosis of Primary Hyperparathyroidism with concomitant osteoporosis, unwilling or unsuitable to undergo curative surgery and treated instead, with multiple Pamidronate infusions were examined. 21 patients satisfied the criteria. The response of BMD and bone turnover markers to Pamidronate at doses of 30 or 45 mg, as 3 monthly infusions over a period of one year was analysed. Statistical analysis was done using the Paired t test.

Results: All subjects were female. The mean age was 74.7 (range 57-91). After one year of treatment, there was no significant difference in the BMD measurements pre and post Pamidronate, either at the lumbar spine (mean difference: 0.008, SD 0.0676; $p=0.62$) or the femoral neck (mean difference: 0.035; SD 0.0808 $p=0.072$). Lumbar spine BMD was maintained. No difference was noted in those receiving the higher dose of Pamidronate. The ALP, free Pyridinoline (fPyr), free Deoxypyridinoline (Dpyr), and fPyr/fDPyr ratio showed a downward trend suggesting suppression of bone turnover. Serum Calcium did not vary significantly. PTH increased significantly post treatment as a normal response to the bisphosphonate treatment.

Conclusion: Treatment with Pamidronate maintains BMD and is a safe option in hyperparathyroid osteoporotic patients. Larger numbers and longer follow up is needed to clarify its role.

P113. ACCEPTABILITY AND COMPLIANCE WITH HIP PROTECTORS BY COMMUNITY DWELLING WOMEN AT HIGH RISK OF HIP FRACTURE

S. Patel, L. Ogunremi, U. Chinnapen. Osteoporosis Unit, St George's Hospital, London, UK

Hip fractures are common and associated with increased morbidity and mortality. Studies of frail institutionalised women show that hip protectors can reduce the rate of hip fracture. However it remains unclear whether independent community dwelling women will find hip protectors acceptable and adhere to their use.