

RGH Pharmacy E-Bulletin

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A joint initiative of the Patient Services Section and the Drug and Therapeutics Information Service of the Pharmacy Department, Repatriation General Hospital, Daw Park, South Australia. The RGH Pharmacy E-Bulletin is distributed in electronic format on a weekly basis, and aims to present concise, factual information on issues of current interest in therapeutics, drug safety and cost-effective use of medications.

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Zoledronic acid for osteoporosis

Bisphosphonate is regarded as the first line treatment for postmenopausal osteoporosis. Adherence to oral bisphosphonate therapy can be an issue for patients with poor compliance (with weekly dosing), patients unable to remain upright for 30 minutes and patients with oesophageal and upper gastrointestinal disorders.

Zoledronic acid (Aclasta®) is an intravenously administered bisphosphonate approved for the prevention of fracture in osteoporosis. Zoledronic acid 4mg (Zometa®) is used to treat hypercalcaemia and prevent skeletal-related events in people with malignancy.

When used for the management of osteoporosis, zoledronic acid is given by intravenous infusion at a dose of 5 mg (in 100 mL of solution) over at least 15 minutes. Adequate hydration is important prior to administration of zoledronic acid, particularly for elderly and patients on diuretic medications. Dose adjustment is not required in patients with impaired renal function however the manufacturer discourages use of zoledronic acid in patients with creatinine clearance < 35 mL/min. The approved duration of treatment is a total of 3 years per patient in a lifetime as there is insufficient data on the safety and efficacy beyond this time.

In a trial studying zoledronic acid for the treatment of osteoporosis in postmenopausal women, zoledronic acid reduced the risk of vertebral fractures (relative risk 0.3) and hip fractures (relative risk of 0.59) compared to placebo. There is a lack of clinical trial evidence comparing zoledronic acid with oral bisphosphonates in postmenopausal osteoporosis; however the overall results of an indirect analysis of the efficacy of these agents appear to be similar. In the HORIZON trial, zoledronic acid (as a single 5 mg infusion) was designated as “non-inferior” to risedronate (5 mg daily) in the prevention and treatment of glucocorticoid-induced osteoporosis at a 12 month endpoint.

The most common adverse reactions reported were fever, influenza-like symptoms, headache and pain in the muscles or joints. These reactions occurred within three days of an infusion and were less frequent with subsequent doses. Administration of paracetamol shortly prior to an infusion may reduce these symptoms.

As with other bisphosphonates, there are rare reports of jaw osteonecrosis. Although most of these reports are associated with use in people with malignancy, careful consideration of risk factors should be undertaken and avoidance of dental procedures in these patients, if possible. There are rare reports of inflammatory eye conditions in both oral and intravenous bisphosphonates; patients with ocular symptoms after an infusion should seek medical attention.

There was a small but significant increase in the incidence of atrial fibrillation in postmenopausal women receiving zoledronic acid in comparison to placebo in a trial. However, this trend was not observed in all studies and the clinical significance is unclear and is yet to be established.

In Australia, zoledronic acid is approved for use as a sole anti-resorptive agent in post menopausal women 70 years old or over with bone mineral density T-score of ≤ -3.0 , women with established osteoporosis with any fracture due to minimal trauma and men with established osteoporosis with hip fracture due to minimal trauma. Ensure adequate vitamin D and calcium supplementation in patients with osteoporosis.

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FOR FURTHER INFORMATION – CONTACT THE PHARMACY DEPARTMENT ON 82751763 or email: chris.alderman@rgh.sa.gov.au
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