

Corticosteroid Induced Osteoporosis (CIO)



Corticosteroid therapy and Osteoporosis

Corticosteroid therapy is essential for the treatment of inflammatory and auto-immune diseases that frequently present to GPs including:

- asthma
- chronic lung diseases
- polymyalgia rheumatica
- rheumatoid arthritis
- inflammatory bowel disease
- rejection in organ transplantation.

However, prolonged corticosteroid use is the most common cause of secondary osteoporosis.

Algorithm for treatment of Corticosteroid Induced Osteoporosis (CIO)

Patients on steroid doses equivalent to Prednisone 7.5 mg for 3 months

Additional risk factors:

- Postmenopausal
- Older male
- Low body weight
- Prior low trauma fracture
- High doses (>10mg prednisone /day)
- Immobilisation due to underlying disease
- Underlying disease associated with rapid bone loss eg rheumatoid arthritis

Refer for BMD (Medicare rebate available)

T score above -1.5

T score -1.5 or less

Calcium and vitamin D

Repeat BMD in 12 months if steroid therapy ongoing

Commence therapy to prevent bone loss
- Oral or IV bisphosphonates, PTH

Algorithm adapted from Sambrook 2008*

Medicare Rebate for Bone Densitometry – Item No: 12312

A Medicare rebate is available for densitometry in patients being treated for a period anticipated to be at least 4 months with: 7.5mg/day or more of oral prednisone (or equivalent); or 800 micrograms or more of inhaled beclomethasone or budesonide/day.



osteoporosis australia

Treatment: to minimise bone loss

Up to 6% of men and women over 60 in Australia use corticosteroids. It is estimated that 30-50% of patients on long-term corticosteroid therapy will experience fractures.

Facts about fractures and corticosteroids

- Minimal trauma fractures are a serious complication of treatment with corticosteroids.
- The extent of bone loss depends on the dose, duration of therapy, age of the patient and underlying disease.
- Bone loss is greatest in the first year of corticosteroid therapy, occurring within months of therapy commencing.
- Bone loss is usually higher in trabecular-rich bone sites (particularly affecting vertebral bodies, ribs and distal radius). Thus, clinically, the majority of CIO fractures occur mostly in these regions ie vertebral and rib fractures.
- Fracture rates decrease rapidly (within one year) after cessation of oral corticosteroid therapy. This indicates that the risk is reversible.
- Recent trials suggest that postmenopausal women receiving corticosteroids are at greatest risk of rapid bone loss and consequent fracture and should be actively considered for prophylactic measures.



Using corticosteroids

- Use the lowest possible dose of corticosteroid for the shortest possible time (daily dose is the single most important determinant of fracture).
- Consider alternative formulations or routes of administration to oral corticosteroids.

Managing Osteoporosis

- Patients starting oral corticosteroid therapy are advised to take calcium (1,000 mg/day) and ensure adequate vitamin D intake (if insufficient, at least 1,000 IU/day is required).
- Bisphosphonates are commonly used for the treatment of corticosteroid induced osteoporosis.
- Encourage patients to do regular weight-bearing exercise.
- Advise patients not to smoke and minimise alcohol consumption.
- Encourage patients to take measures to prevent falls.

PBS listing

The PBS lists risedronate for CIO in patients currently on long-term (for at least 3 months), high-dose corticosteroid therapy ie taking 7.5mg/day prednisolone or equivalent, with a bone mineral density (BMD) T-score of ≤ -1.5 .