

FAST FACTS AND CONCEPTS #129
STEROIDS IN THE TREATMENT OF BONE PAIN**Elizabeth Weinstein and Robert Arnold MD**

Background Corticosteroids are recommended as an adjuvant analgesic for cancer-related bone pain. The mechanism of action is likely related to decreasing tumor-related edema or inhibition of prostaglandin and leukotriene synthesis. This *Fast Fact* discusses the use of corticosteroids for painful bone metastases; see also *Fast Facts* #66, 67, and 116 about palliative radiotherapy. Steroids have been shown to prevent pain flare associated with palliative radiation of bone metastases.

Dosing The ideal corticosteroid, dose, and duration of therapy for bone pain is unknown; current practice is derived from expert opinion and anecdotal case series. Dexamethasone is commonly used due to its lower mineralocorticoid effect and long half-life, which allows once-daily dosing. One randomized controlled trial demonstrated a decrease in pain scores in patients with cancer-related pain using oral methylprednisolone 16 mg PO twice a day. Other starting dosages reported in the literature include dexamethasone 4-8 mg PO daily, methylprednisolone 16-32mg PO 2-3 times per day or prednisone 20-30 mg PO 2-3 times per day.

Duration of Therapy The optimal duration of steroid therapy is unknown. If no benefit is seen within 5-7 days the drug should be discontinued. If beneficial, the drug should be tapered to the lowest effective dose or, if possible, discontinued to avoid long-term adverse effects.

Side Effects Side effects account for discontinuation of steroids in 5% of patients. Acute side effects include thrush (~30%), edema (20%), dyspepsia and peptic ulcer diseases, psychiatric symptoms (insomnia, delirium and anxiety), and glucose intolerance. Delayed side effects from long term use include adrenal suppression, moon facies/fat redistribution, increased susceptibility to infection, osteoporosis, skin fragility and impaired wound healing. A prospective review of 373 inpatients with advanced malignant disease demonstrated that the side effect profile of dexamethasone and prednisone are similar, although at equipotent doses dexamethasone causes slightly more thrush and psychiatric symptoms and less edema, weight gain and dyspepsia. The relationship between peptic ulcer disease and steroids is controversial; in one nested case-control study it appeared correlated with concurrent NSAID use and a cumulative dose greater than 1000 mg of prednisolone or 140 mg of dexamethasone. Case reports and prospective series suggest that psychiatric symptoms are most commonly seen in middle-aged women, are directly related to dosage, and usually resolve with dose reduction.

Summary Steroids are recommended for use in bone pain, but the choice of dose, duration and specific drug is largely empiric. Steroid toxicities are a concern; the duration of treatment should be minimized to reduce the risk of adverse events.

Resources

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