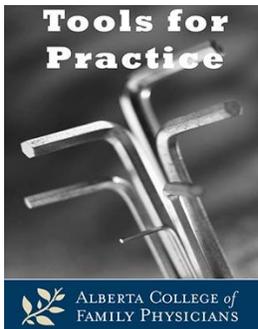


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Calcitonin withdrawal: Now what for acute vertebral fractures?

Clinical Question: Is there any medication (other than traditional analgesia) that works for bone pain resulting from osteoporotic vertebral compression fractures (OVCF)?

Bottom-line: Calcitonin had weak evidence of moderate effectiveness for acute OVCF pain but was withdrawn over cancer risks. Although the evidence is very poor, bisphosphonates appear to have similar effect on acute pain reduction and are useful in secondary fracture prevention.

Evidence:

As of October 1, 2013, synthetic calcitonin (Salmon) nasal spray will be withdrawn from the Canadian Market.¹ Despite being on the market since 1975 (in the U.S.), only recently has a meta-analysis of 17 randomized controlled trials (RCTs) concluded that calcitonin is associated with an increased risk of overall malignancy with a number needed to harm (NNH) of 63.²

- A systematic review of five RCTs (246 patients) demonstrated that calcitonin was effective in reduction of OVCF pain compared to placebo with a mean difference (MD) of 3.4 on a 10-point visual analogue scale (VAS) at one week.³
- Two small studies examining bisphosphonates for pain.
 - One direct comparison RCT: 27 women, IV pamidronate or IV calcitonin x1 dose:⁴
 - Day 4: both groups had statistically significant improvement in pain on VAS scale.
 - Pamidronate ~1.1cm (baseline 5.9).
 - Calcitonin ~2.3cm (baseline 6.3).
 - Day 30: pamidronate ~2.3cm, calcitonin ~3.1cm.
 - No statistically significant difference in pain scores, functional disability or analgesic use.
 - RCT 32 women, IV pamidronate versus placebo (baseline ~7.6):⁵
 - After one week, those taking pamidronate had significantly decreased pain with standing (MD ~2.3) but not in supine pain (MD ~1.1).

Context:

- The minimum clinically significant change in patient's pain severity measured with a 10cm VAS is 1.3cm.⁶
- Approximately 60% of patients with OVCF who are conservatively managed will have adequate resolution of pain within three months.⁷
- For secondary prevention, bisphosphonates are beneficial in prevention of vertebral (Numbers Needed to Treat (NNT)=9-60) and non-vertebral fractures (NNT=20-68).⁸
- Bisphosphonates (oral and IV) have also demonstrated benefit in metastatic bone pain.⁹
- There is no evidence of superiority of one bisphosphonate over another in acute pain management.
- General analgesic medications are likely also a reasonable choice, although we were unable to identify any RCTs to guide management in this area.

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