

THE EFFECT OF MONTHLY IBANDRONATE ON BONE MINERAL DENSITY AND BONE TURNOVER MARKERS IN PATIENTS WITH HAEMOPHILIA A OR B AND INCREASED RISK FOR FRACTURE

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Introduction

- Haemophilia A and B has been associated with increased prevalence of low bone mineral density (BMD).
- However, no study has so far evaluated the effects of any anti-osteoporotic therapy on BMD.

Aims

- The **primary endpoint** was to estimate the effect of 12-month therapy of oral ibandronate 150mg/month on BMD in patients with haemophilia A and B.
- **Secondary endpoint** was its effect on bone turnover markers (BTM), including serum C-terminal telopeptide of type 1 collagen (sCTX) and tartrate-resistant acid phosphatase band 5b (as markers of bone resorption), osteocalcin and bone-specific alkaline phosphatase (as markers of bone formation).

Patients and methods

- This was a prospective open-label interventional study
- Per os ibandronate (150 mg/month) was given to adult patients with T-score <-2.5 SD or Z-score <-2 and/or increased risk of fracture according to FRAX model were included.
- All patients received 1000 mg/d calcium carbonate with 800 IU/d cholecalciferol.
- **Exclusion criteria:**
 - Active peptic ulcer, esophagitis or severe gastrointestinal reflux
 - Severe diseases affecting bone metabolism, such as primary hyperparathyroidism, hyperthyroidism, hypogonadism
 - Renal failure (e-GFR < 30 ml/min)
 - Severe vitamin D deficiency (25-OHD <10ng/ml)
 - Any anti-osteoporotic medication the past 12 months

Results

- 10 males (aged 43.7±13.8 years, 7 with haemophilia A) were included.
- Ibandronate resulted in a significant **increase in lumbar BMD** [from 0.885±0.162 g/cm² to 0.926±0.177 g/cm², p=0.011 (+4.9%, greater than the least significant change provided for the DXA device)].
- No significant change in BMD of total hip (from 0.717±0.128 to 0.729±0.153 g/cm², p=0.963) or neck (0.741±0.135 to 0.761±0.146 g/cm², p=0.952) was noticed.
- Ibandronate led to a **significant decrease in sCTX** [from 0.520±0.243 to 0.347±0.230 ng/ml, p=0.042 (-29.9%, compared with baseline levels)].
- No significant change in the other BTM was observed.
- Ibandronate was generally well-tolerated.
- No fractures were reported.

Conclusions

- ✓ In the first study conducted so far evaluating the effect of bisphosphonates in patients with haemophilia and increased fracture risk, ibandronate significantly improved BMD in lumbar spine and reduced bone resorption.
- ✓ Its effect on hip BMD and bone formation markers was not significant. This may be attributed to the small number of patients, based on the strict selection criteria.

References

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