Tidsskriftet Tidsskrift for Den norske legeforening

# The role of general practitioners in osteoporosis treatment after fractures

OPINIONS

JAKOB VANGEN NORDBØ

E-mail: jakob.nordbo@gmail.com
Jakob Vangen Nordbø is a medical specialist at the Orthopaedic Department of Akershus University Hospital and a research fellow at the Institute of Clinical Medicine, University of Oslo.
The author has completed the ICMJE form and declares no conflicts of interest.

ØYVIND STOPLE SIVERTSEN

Øyvind Stople Sivertsen is a specialty registrar in general practice at Torshovdalen medical centre and a editor for the Journal of the Norwegian Medical Association.
The author has completed the ICMJE form and declares no conflicts of interest.

FREDE FRIHAGEN

Frede Frihagen is a senior consultant at the Orthopaedic Department of Østfold Hospital, associate professor at the Institute of Clinical Medicine, University of Oslo and leader of the Fragility Fracture Network Norway.
The author has completed the ICMJE form and declares no conflicts of interest.

LENE B. SOLBERG

Lene B. Solberg is a senior consultant at the Divison of Orthopaedic Surgery, Oslo University Hospital, postdoctoral researcher at the Department of Pathology, Oslo University Hospital and leader of the Norwegian Orthopaedic Association's osteoporosis and bone health network.

The author has completed the ICMJE form and declares no conflicts of interest.

## While a fall can be distressing, falling between two stools can be even worse. With general practitioners aboard, osteoporosis patients can receive better follow-up treatment.

Previous fractures may well be the most important risk factor for subsequent fractures, because many of these patients suffer from osteoporosis (1). Nevertheless, only 15 % of women and 4 % of men with hip fracture received osteoporosis treatment in Norway in 2005 (2). This is despite the fact that the 1-year mortality rate for hip fractures is 20–25 % and that osteoporosis treatment can halve the risk of a subsequent fracture (3, 4).

> ***«If general practitioners measure the P1 NP of the relevant patients once a year, those who need a further infusion with zoledronic acid can be easily identified»***

In 2015 a network of orthopaedic surgeons took the initiative to draw up a guide for the treatment of osteoporosis in men and women over the age of 50 who have suffered a low-energy fracture (5). Norwegian orthopaedic departments that have introduced this guide aim to ensure that anyone over the age of 50 who presents with a low-energy fracture, will be offered a check for osteoporosis followed by treatment if required. For patients with hip fracture, the first-line treatment is zoledronic acid infusion combined with vitamin D and calcium supplements (6). In our opinion, it is expedient, safe and sensible for parts of the subsequent treatment to be provided by general practitioners.

## Once-yearly blood test

The follow-up treatment is based on an easily performed blood test: N-terminal propeptide of type 1 procollagen (P1 NP). P1 NP is a bone marker that reflects the rate of skeletal bone turnover. If brittle bones are effectively treated with antiresorptive drugs, such as zoledronic acid, the P1 NP value will be low, below 35 µg/L (7). The P1 NP test can be performed at any time of day using a standard EDTA tube that is kept in refrigerated storage before being despatched for analysis.

> ***«If hospitals take responsibility for initiating the treatment, most of the subsequent monitoring and continuance of treatment can be conducted by the primary healthcare service»***

During treatment with zoledronic acid we recommend that P1 NP is measured once a year. This is where the real benefit comes in: If P1 NP is below 35 µg/L, the next dose of zoledronic acid should be postponed and a further P1 NP blood test be performed after 12 months. If levels are higher than 35 µg/L, another dose of zoledronic acid should be given. It has been documented that a single dose of zoledronic acid can remain effective for several years (8). If general practitioners measure the P1 NP of the relevant patients once a year, those who need a further infusion with zoledronic acid in order to maintain effective treatment can be easily identified.

## Infusion treatment with zoledronic acid

Interested general practitioners can administer the zoledronic acid infusion treatment in their own surgery. All they need is a peripheral venous cannula and a room where the patient can be kept under observation for 45 minutes with a doctor on standby nearby. Kidney function must be checked beforehand (glomerular filtration rate (GFR) > 35 ml/min) and levels of vitamin D and calcium must be found to be normal. The patient does not need to be nil by mouth but should drink ample quantities of water before and during the infusion. An acute phase response of influenza-like symptoms occurs in up to 20 % of cases. The response is normally restricted to the first infusion and may last for a few days but can be alleviated with paracetamol and/or ibuprofen (9).

## Collaboration to improve bone health

Today, examination and treatment for osteoporosis is more readily available to low-energy fracture patients over 50 in Norway than five years ago. This can improve even further if we find the key to collaboration between the specialist and primary healthcare services. The use of bone markers in the primary healthcare service for monitoring the efficacy of treatment will reduce the number of zoledronic acid infusions. If hospitals take responsibility for initiating the treatment, we believe that most of the subsequent monitoring and continuance of treatment can be conducted by the primary healthcare service. It may not be possible for all GP surgeries to offer infusion treatment, but it is a procedure that can be performed in settings other than a hospital. The aim must be for patients to receive treatment and follow-up services that can reduce the risk of subsequent fractures. Sometimes, lives may be prolonged (6). We have started. Who wants to join us?

### LITERATURE

1. Gehlbach S, Saag KG, Adachi JD et al. Previous fractures at multiple sites increase the risk for subsequent fractures: the Global Longitudinal Study of Osteoporosis in Women. J Bone Miner Res 2012; 27: 645–53. [PubMed] [CrossRef]

2. Devold HM, Søgaard AJ, Tverdal A et al. Hip fracture and other predictors of anti-osteoporosis drug use in Norway. Osteoporos Int 2013; 24: 1225–33. [PubMed][CrossRef]

3. Pollmann CT, Røtterud JH, Gjertsen JE et al. Fast track hip fracture care and mortality - an observational study of 2230 patients. BMC Musculoskelet Disord 2019; 20: 248. [PubMed][CrossRef]

4. Black DM, Rosen CJ. Clinical practice. Postmenopausal osteoporosis. N Engl J Med 2016; 374: 254–62. [PubMed][CrossRef]

5. Faggruppen for osteoporose og benhelse Nof. Behandlingsveileder for menn og kvinner > 50 år med lavenergibrudd. https://www.legeforeningen.no/contentassets/65e48791b351413e8d5dab6c6f10ebbf/behandlingsalgoritme_fob_v4_mai2019.pdf Accessed 29.9.2020.

6. Lyles KW, Colón-Emeric CS, Magaziner JS et al. Zoledronic acid and clinical fractures and mortality after hip fracture. N Engl J Med 2007; 357: 1799–809. [PubMed][CrossRef]

7. Eastell R, Pigott T, Gossiel F et al. DIAGNOSIS OF ENDOCRINE DISEASE: Bone turnover markers: are they clinically useful? Eur J Endocrinol 2018; 178: R19–31. [PubMed][CrossRef]

8. Grey A, Bolland MJ, Horne A et al. Five years of anti-resorptive activity after a single dose of zoledronate–results from a randomized double-blind placebo-controlled trial. Bone 2012; 50: 1389–93. [PubMed][CrossRef]

9. Syversen U, Halse JI. Bisfosfonatbehandling av osteoporose og andre skjelettsykdommer. Tidsskr Nor Legeforen 2011; 131: 244–7. [PubMed][CrossRef]

Publisert: 23 November 2020. Tidsskr Nor Legeforen. DOI: 10.4045/tidsskr.20.0822
Received 11.10.2020, first revision submitted 28.10.2020, accepted 29.10.2020.