






Are fragility fractures being treated properly?

O. Şahap Atik, MD¹, Ahmet Aslan, MD², Mustafa Odluyurt, MD³

¹Professor of Orthopedic Surgery, Turkish Joint Diseases Foundation, Ankara, Turkey

²Department of Orthopedics and Traumatology, Alanya Alaaddin Keykubat University Alanya Education and Research Hospital, Antalya, Turkey

³Department of Orthopedics and Traumatology, Medical Faculty of Gazi University, Ankara, Turkey

Osteoporosis is a major global health problem with significant economic consequences and adverse impacts on quality of life.^[1] This insidious disease usually presents with fragility fractures resulting from a low-energy trauma, where bones can be broken due to a fall from a standing height or less.

The number of fragility fractures and cases of osteoporosis is increasing worldwide, creating an increasing burden to society.^[2]

The risk of refracture is highest immediately after a fracture. This suggests that there is an opportunity to optimize the benefits of fracture prevention by treating patients as soon as possible after occurrence of a fracture. Distal radius or vertebra fractures due to low-energy trauma can be a harbinger of a fragility hip fracture.^[3] There is also an association between sarcopenia, osteoporosis, and the risk of fragility hip fracture.^[4] Sarcopenia also increases the risk of mortality in patients with fragility hip fractures.

On the other hand, the proportion of patients starting a pharmacological treatment in the year after a fracture is low. In France, Sweden, and Spain, 85%, 84%, and 72% of fracture patients remained untreated one year after fracture, respectively.^[2]

A fracture liaison service (FLS) is a multi-disciplinary healthcare delivery model for secondary fracture prevention. This healthcare delivery model has become more common in recent years, but its coverage is still low. The evidence suggests that FLSs are cost-effective care delivery models that have the potential to increase the number of high-risk patients being treated, improve adherence to treatment, and reduce the risk of refracture.^[2] A FLS provides an opportunity to improve early post fracture patient identification and reduce the treatment gap.

Interventions such as resistance training, optimal dietary protein, vitamin D, and calcium intake have positive effects on bone and muscle, reducing falls, fractures, and, consequently, disability.^[5]

A recent systematic review provides evidence of the beneficial effect of dairy protein to improve muscle mass in middle-aged and older adults.^[6]

The rates of bone production and destruction can be evaluated by assaying bone matrix components released in the bloodstream and excreted in the urine. These are biomarkers of formation: bone-specific alkaline phosphatase, osteocalcin and biomarkers of resorption: N-terminal and C-terminal crosslinking telopeptide of type I collagen.^[7] In case both events are coupled and change in the same direction such as osteoporosis, biomarkers will reflect the overall rate of bone turnover.^[8]

Finally, are fragility fractures being treated properly? Unfortunately, not yet. However, international organizations such as the International Osteoporosis Foundation, European Society for Clinical and Economic Aspects of Osteoporosis, Osteoarthritis and Musculoskeletal Diseases, and Global Alliance for Musculoskeletal Health have developed a global campaign to facilitate the implementation of coordinated, multi-disciplinary models of care for

Received: April 29, 2020

Accepted: May 21, 2020

Published online: June 18, 2020

Correspondence: O. Şahap Atik, MD, Turkish Joint Diseases Foundation, Mustafa Kemal Mah., Dumlupınar Bul., 274/2, C2 Blok, Ofis 5, 06900 Çankaya, Ankara, Türkiye.

E-mail: satikmd@gmail.com

Doi: 10.5606/ehc.2020.57894

Citation: Atik OŞ, Aslan A, Odluyurt M. Are fragility fractures being treated properly? *Jt Dis Relat Surg* 2020;31(2):403-404.

secondary fracture prevention. They believe that this is the most important thing that can be done to directly improve patient care and reduce fragility fractures-related healthcare costs worldwide.

REFERENCES

1. Bozkurt HH, Tokgöz MA, Yapar A, Atik OŞ. What is the importance of canal-to-diaphysis ratio on osteoporosis-related hip fractures? *Eklemler Hastalıkları Cerrahisi* 2019;30:296-300.
2. Borgström F, Karlsson L, Orsäter G, Norton N, Halbout P, Cooper C, et al. Fragility fractures in Europe: burden, management and opportunities. *Arch Osteoporos* 2020;15:59.
3. Bozkurt HH, Atik OŞ, Tokgöz MA. Can distal radius or vertebra fractures due to low-energy trauma be a harbinger of a hip fracture? *Eklemler Hastalıkları Cerrahisi* 2018;29:100-3.
4. Atik OŞ. There is an association between sarcopenia, osteoporosis, and the risk of hip fracture. *Eklemler Hastalıkları Cerrahisi* 2019;30:1.
5. Hirschfeld HP, Kinsella R, Duque G. Osteosarcopenia: where bone, muscle, and fat collide. *Osteoporos Int* 2017;28:2781-90.
6. Hanach NI, McCullough F, Avery A. The impact of dairy protein intake on muscle mass, muscle strength, and physical performance in middle-aged to older adults with or without existing sarcopenia: A systematic review and meta-analysis. *Adv Nutr* 2019;10:59-69.
7. Atik OŞ, Sezgin EA, Tepedelenlioğlu HE. The role of biomarkers in osteoarthritis and osteoporosis for early diagnosis and monitoring prognosis. *Eklemler Hastalıkları Cerrahisi* 2019;30:175-6.
8. Garnero P, Delmas PD. Contribution of bone mineral density and bone turnover markers to the estimation of risk of osteoporotic fracture in postmenopausal women. *J Musculoskelet Neuronal Interact* 2004;4:50-63.