Comprehensive Treatment of Fragility Fractures of Distal Radius, an Opportunity for Prevention the Deterioration of Bone Health and Reduction of other Fractures with Higher Morbidity and Mortality

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Abstract

Report goal: Fragility fractures of distal radius, are the most common fractures of upper extremities in adults and elderly, with higher incidence in females. Are low energy fractures, result of a fall from standing height or less. Such patients have higher incidence of osteoporosis and increased risk of other serious fractures. Research results: From the questionnaire filled by orthopedic doctors, fragility fractures of distal radius are most frequent in patients 50-60 years old female. 54% of doctors order DEXA scan, 60 % refer patients for osteoporosis evaluation and treatment; 36% treat osteoporosis. From patient questionnaire, such patient were mostly 51-70 yo female, 6.5% had family history of fragility fracture, 97% did not have knowledge about osteoporosis, 3% had high education level, 73% did not report social-economical issues, 45% did not have other medical problems. Summary: Fragility fractures of distal radius occur earlier comparing to other fragility fractures. The orthopedic doctor should recommend DEXA scanning, refer or treat osteoporosis to prevent further deterioration of patient bone health and reduce the risk of other fragility fractures with a higher morbidity and mortality.

Keywords: *fragility, distal, radial, fracture, osteoporosis*

1. Introduction

Fragility fractures of distal radius are low energy fractures, result of a fall from standing height or less, from a mechanical force that would not normally cause the fracture. Are one of the most common type of fragility fractures including spine, hip and humerus fractures and occur mostly in females. Fragility fractures are considered the result of bone metabolism abnormalities. (1,2,3)

Low energy distal radius fractures occur earlier in life compare to other fragility fractures; they occur on average 15 years earlier than hip fractures. (4,5) There is an increased incidence of low energy distal radius fracture in women 45- 60 years old and are the most common fragility fracture in perimenopausal women. Patient has better neuromuscular reflexes in middle age, that's why tries to stop the fall with an outstretched arm. Distal radial fractures are not associated with an increase in mortality and have a lesser impact on activities of daily living. (6)

With aging we see an increase in incidence of other fragility fractures, patient tend to fall on the side or backwards, because of reduced neuromuscular reflexes with advanced age. That's why we see an increased incidence of vertebral and hip fractures in patients older than 60 years old. Hip fractures are associated with an increased morbidity and

mortality. (7,8)

Low energy distal radius fractures happen earlier in life compere to other fragility fractures, that's why they reflect the early bone changes and muscle weakness. Such patients have an increased incidence of osteoporosis and increased risk for other fractures. (9;10) From different studies, less than 25% of patients with such fractures were referred for the evaluation of osteoporosis with a DEXA scan. (11)

2. Materials and Methods

We used 2 questionnaires for evaluation of fragility distal radius fractures. One questionnaire is filled by 22 orthopedic doctors that work mainly in Tirana and Durres, with the goal to evaluate which are the most common fragility fractures they treat in their clinical practice; age, sex of patients with distal radius fracture; if they order for patients with such fractures DEXA scanning, treatment with Calcium and Vitamin D, referral for evaluation and treatment of osteoporosis. Another questionnaire was filled by patients that were admitted with low energy distal radius fracture in the emergency room of Regional Durres Hospital during November 2021- March 2022. We have evaluated the age, sex, medical problems, knowledge about osteoporosis, level of education and social-economic issues of them.

3. Results and Discussions

From the evaluation of questionnaire filled by orthopedic doctors, 95.5 % of them report distal radial fracture as the most common fragility fracture in patients 50-60 years old. In patients over 70 years old, only 32 % of orthopedic doctors report humerus and hip fractures as the most common fragility fractures. Only 9% of orthopedic doctors report to have treated male patients with fragility distal radius fracture. 91% of orthopedic doctors prescribe Calcium and Vitamin D to such patients; 54% order DEXA scanning, 60 % refer patients for further evaluation and treatment of osteoporosis; 36% treat osteoporosis. Comparing to similar studies regarding DEXA scanning of such fractures, Albanian orthopedics do more referrals. (11)

From patient's questionnaire 42 % of them were 50-60 years old; 42 % were 61-70 years old; 97% were females, 9.1% had family history of fragility fracture, 94% did not have knowledge about osteoporosis, 10% had high education level, 68% did not report social-economic issues, 45% did not have other medical problems. There may be a lack of knowledge regarding prevention of osteoporosis in menopausal women in Albania, which may explain why distal radial fracture comparing to vertebral and hip fractures are the most common fragility fractures orthopedic doctors encounter in their practice. (1)

4. Conclusions

Distal radial fractures are the most common fragility fractures that Albanian orthopedic doctors diagnose and treat in their practice. Most of such patients are females, in their fifties and sixties and don't have knowledge about osteoporosis. The orthopedic doctor, should recommend DEXA scanning, because such fractures are an opportunity to diagnose and treat osteoporosis with the goal of preventing further deterioration of patient's bone health and reduce the risk of other fragility fractures, such as vertebral and hip fracture with much higher morbidity and mortality. Perimenopausal women should be educated in primary care level about osteoporosis prevention and treatment to reduce the risk of fragility fractures.

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