Retrospective survey of clinical attention taken to osteoporosis in patients admitted in orthopaedic department for fragility fractures

Giuseppe Colì[a], MD
Massimo Abatelillo[a], MD
Giuseppe Cataldi[a], MD
Francesco De Caro[a], MD
Diego Esposito[a], MD
Walter Mega[a], MD
Vinicio Perrone[a], MD
Prisco Piscitelli[b], MD
Luigia Manno[a], Sister

[a] Hospital "S. Cuore di Gesù", Gallipoli, ASL Lecce, Orthopaedic Department
[b] ISBEM Research Center

Address for correspondence:
Giuseppe Colì, M.D.
Via D. Alighieri 15, 73010 Lequile (LE), Italy
Ph. +39 0833 270538/631 - 340 9641525
E-mail: coligiuseppe@libero.it

Summary

Considering that to international level it has put in evidence that often the diagnosis of osteoporosis is underestimated and that diagnostic and therapeutic attention of the same one are often neglected, the authors have assessed the degree of care provided by orthopaedic surgeons about the problem of osteoporosis, considering the medical files of orthopaedics department. Then corrective behaviour were proposed.

KEY WORDS: osteoporosis, diagnosis, therapy.

Aim

The aim of this study was the critical evaluation about the orthopaedic surgeons' attention taken in searching for clinical, laboratory and instrumental surveys news concerning osteoporosis pathology.
In addition we have pursued prescriptions of measures and treatments with a follow up concerning osteoporotic pathology of patients hospitalised in the department of orthopaedics of our hospital.

Materials and methods

Between January 2006 and December 2007 we have taken into consideration 316 patients' medical records.
They were sent to the orthopaedic ward from the casualty and emergency department with fractures.

Data examined:
- age
- sex
- case history
- site of fracture
- treatment:
  - → conservative
  - → pharmacological before and after hospitalization
  - → surgical
- type of surgical treatment

We have taken into consideration patients over 60s, including only fractures with low energy trauma. There was a copy of the dismissal letter in the medical record and we have detected the data below (Tabb. I, II, III).

Casuistry

Year 2006

144 Admissions
27 men average age 76,8 (60-93)
117 women average age 80,2 (60-95)
(1 deceased)
average age 79,6 (60-95)

Sites of fracture and treatment

20 vertebral fractures: 6 backbone, 14 lumbar

92 femur fractures: 35 neck, 55 peritrochanteric, 2 diaphyseal — 71 endoprosthesis, 19 bone fixations

18 humerus fractures: 4 treated with endoprosthesis and 2 with bone fixation
12 wrist fractures
3 pelvic fractures (ischial-tuberosities)
2 costal fractures
2 trimalleolare fracture

Year 2007

172 Admissions
36 men average age 74,8 (60-95)
(1 deceased)
136 women average age 80,1 (60-96)
(2 deceased)
average age 79 (60-96)

Sites of fracture and treatment

28 vertebral fractures: 14 backbone, 14 lumbar

96 femur fractures: 22 neck, 70 peritrocantheric, 4 diaphyseal f. — 54 endoprosthesis, 29 bone fixations

Table I - Breakdown into decads of fractures in the 2006.

Decads	6^	7^	8^	9^
Men	6	10	9	2
Women	12	40	48	17

Table II - Breakdown into decads of fractures in the 2007.

Decads	6^	7^	8^	9^
Men	9	12	14	1
Women	21	40	59	16

Tab. III Breakdown into sites of fractures in the 2006 and 2007.

Site	Femur	Vertebral	Humerus	Wrist	Pelvis	Other
2006	92	20	18	12	3	4
2007	96	28	30	20	11	4

30 humerus fractures: 6 treated with endoprosthesis and 5 with bone fixation
20 wrist fractures 15 treated with bone fixation
11 pelvis fractures (ischial-tuberosities)
3 costal fractures
1 tibial fracture

Results

In the 144 medical records examined for the year 2006, in the case history there is no data on the presence or absence of risk factors for osteoporosis, during the stay in hospital laboratory examinations have never been carried out in order to value calcium phosphate metabolism.
Among the dismissal diagnosis there is the presence of osteoporosis only in 5 cases and in one case no therapeutic prescription has been carried out in order to improve osseous mineralization.
Amongst the patients, only 9 (6.25%) had followed osteoporosis therapies before the admission to hospital and only 39 patients (27%) pharmacological prescriptions had been given in dismissal.
Only in one case bone densitometry has been carried out during the stay in hospital and in no cases it has been prescribed in out-patients' department.
In 11 patients there was a previous fracture, only 2 of them followed a osteoprotective therapy at home and only 4 of them has it been prescribed in dismissal.
In 6 amongst 144 patients in 2006, fragility fracture was situated in different sites at the same time and in 4 patients it was a periprosthesis fracture. Only one patient was undergoing medical osteoprotective therapy.
In the evaluation of 172 medical records concerning the year 2007 there are few variations. They concern researches on calcium phosphate metabolism. It was evaluated in 65 patients (41%, because only from February 2007 instructions were given in order to carry out evaluations of calcium phosphate metabolism during laboratory routine in patients over 60s admitted to hospital with fractures. Therefore it concerns only 157 admissions to hospital).
In the medical history we have no data concerning the presence of risk factors.
The presence of osteoporosis is present 4 times in the diagnosis of dismissal and in two of them no therapy was prescribed.
Before admission in hospital, only 8 patients (4,65%) had followed medical osteoprotective therapy and it was recommended in dismissal to 5 patients.
Among 172 letters of dismissal, only 38 patients have been prescribed pharmacological therapy at home.
In 7 cases fractures were present in more than one site, 6 patients have already had a fragility fracture and three of them have had a periprosthesis fracture, only one of them followed a osteoprotective medical therapy.
Bone density has been carried out during their stay in hospital only for 5 patients, we have never found any instruction of follow-up.

Discussion and conclusions

As in past publication of other authors (1, 2), we have learned that there is a lack of sensitivity and attention to seek osteopo-rosis' risk factors in patients admitted in hospital for fragility fractures.
Almost always the presence of osteoporosis is not reported in dismissal diagnosis.
Even when this pathology is already known, many patients are not followed properly in the prevention of further fractures and there is no follow-up of the osteoporosis pathology.
It is necessary to carry out (3) awareness, health education and update initiatives about osteoporosis in order to improve prevention, diagnosis and treatment of this pathology.

Measures

After this critical appraisal, we inserted in the case-history a questionnaire (Table V) concerning the assessment of osteoporosis' risk factors (4-6). Furthermore, we gave instructions to carry out laboratory routine of calcium phosphate metabolism (4) in over 60s admissions with fracture (Table IV). This is the first step after which we would like to promote some update meetings for prevention.
We will propose a department guidance in order to obtain better knowledge.

Table IV - Questionnaire inserted in the clinical case.

AZIENDA SANITARIA LOCALE LECCE
Ospedale "S. Cuore di Gesù" – GALLIPOLI
Divisione di Ortopedia e Traumatologia

OSTEOPOROSIS RISK FACTORS QUESTIONNAIRE

MEDICAL REPORT n. _____
NAME _____ SURNAME _____
date of birth _____ weight _____ height _____
menopause age: _____
first menstruation (age): _____

	No	Yes
Present steroid therapy Type: dosage:		
Past steroid therapy		
Previous fractures caused by ordinary falls		
Fractures caused by osteoporosis in the family (parents, sisters….) What?_____		
Frequent easy falls		
Frequent absence of menstruation fertile age		
Food intolerance		
Therapy with EUTIROX _____ mg		
Therapy with antiepileptic		
Therapy with COUMADIN o SINTROM		
Therapy with diuretic		
I undergo chemotherapy cycles		
Therapy with minor tranquilizers or antidepressants		
I smoke_____ cigarettes a day		
Diet lacking in calcium (milk, cheese…)		
Lack of exposure to the sun		
Sedentary lifestyle with little physical activity		
I suffer from rheumatic diseases		
Dental pathology is being treated or will be treated		

I take these osteoporosis drugs from….. :

Table V - Laboratory exams carried out in patients admitted with fracture in addition to preoperative routine

Blood plasma	Calcium, Phosphorus, Osteocalcina, TSH, 25OHVitaminD, PTH intact
Urine/24 hours	Idrossiprolina, Calcium, Phosphorus

In this way more attention will be paid in osteoporosis prevention, diagnosis and treatment and its complications.

References

1. Kamel HK et al. Failure to diagnose and treat osteoporosis in elderly patients hospitalised with hip fracture. Am J Med. 2000 Sep; 109(4): 326-8.
2. Harrington JT et al. Hip fracture patients are no treated for osteoporosis: a call to action. Arthritis Rheum. 2002;47:651-4.
3. Raccomandazioni a cura della Commissione osteoporosi SIOT 2007.
4. Kanis JA et al. Risk of hip fracture according to the WHO criteria for osteopenia and osteoporosis. Bone 2000;27:585-90.
5. Linee guida SIOMMMS 2006.
6. Linee guida NOF 2008.