FRATTURE DA FRAGILITA': DIAGNOSI, TERAPIA E CONTINUITA' ASSISTENZIALE

"TERAPIA MEDICA NEI PAZIENTI ANZIANI"

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DEFINITIONS

- The threshold settled for being classified as “older” adults has been shifted from 65 years to 75 years recently
- Within the cohort of older adults there’s a sub-group of ‘the oldest old’

MORTALITA' DOPO FRATTURA DI FEMORE

- A breve termine (30 giorni): la mortalità nella fase acuta o entro un mese dall'intervento oscilla mediamente tra il 5% e l'8%.
- A lungo termine (12 mesi): entro un anno dall'evento, il tasso di mortalità sale drasticamente, attestandosi tra il 20% e il 30% (*con picchi anche superiori nei pazienti ultracentenari o con gravi quadri di fragilità*). Questo tasso di mortalità è pari o superiore a quello di alcune patologie oncologiche o dell'infarto del miocardio.

WHY ARE OLDER PATIENTS UNDERTREATED?

- Lack of evidence-based data
- Polypharmacy
- Fear for increased adverse events
- Increased health costs and the risk of therapeutic futility in this population
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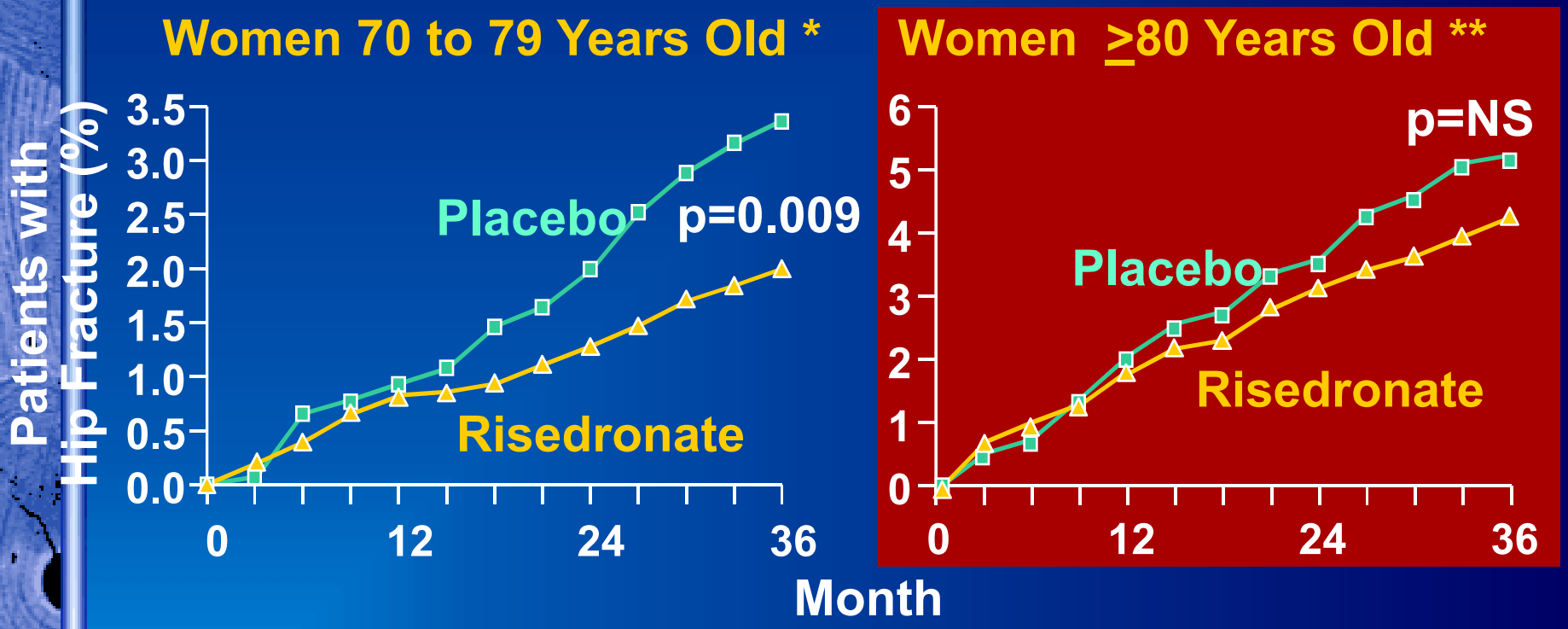
Incidence of Hip Fracture in the Younger Women (Left) and the Older Women (Right)



* Enrolled if they had a low BMD at the femoral neck (T score, lower than -4 or lower than -3 with at least one nonskeletal risk factor for hip fracture).

** Enrolled if they had at least one nonskeletal risk factor or low BMD at the femoral neck (T score, lower than -4 or lower than -3 with a hip-axis length ≥11.1 cm).

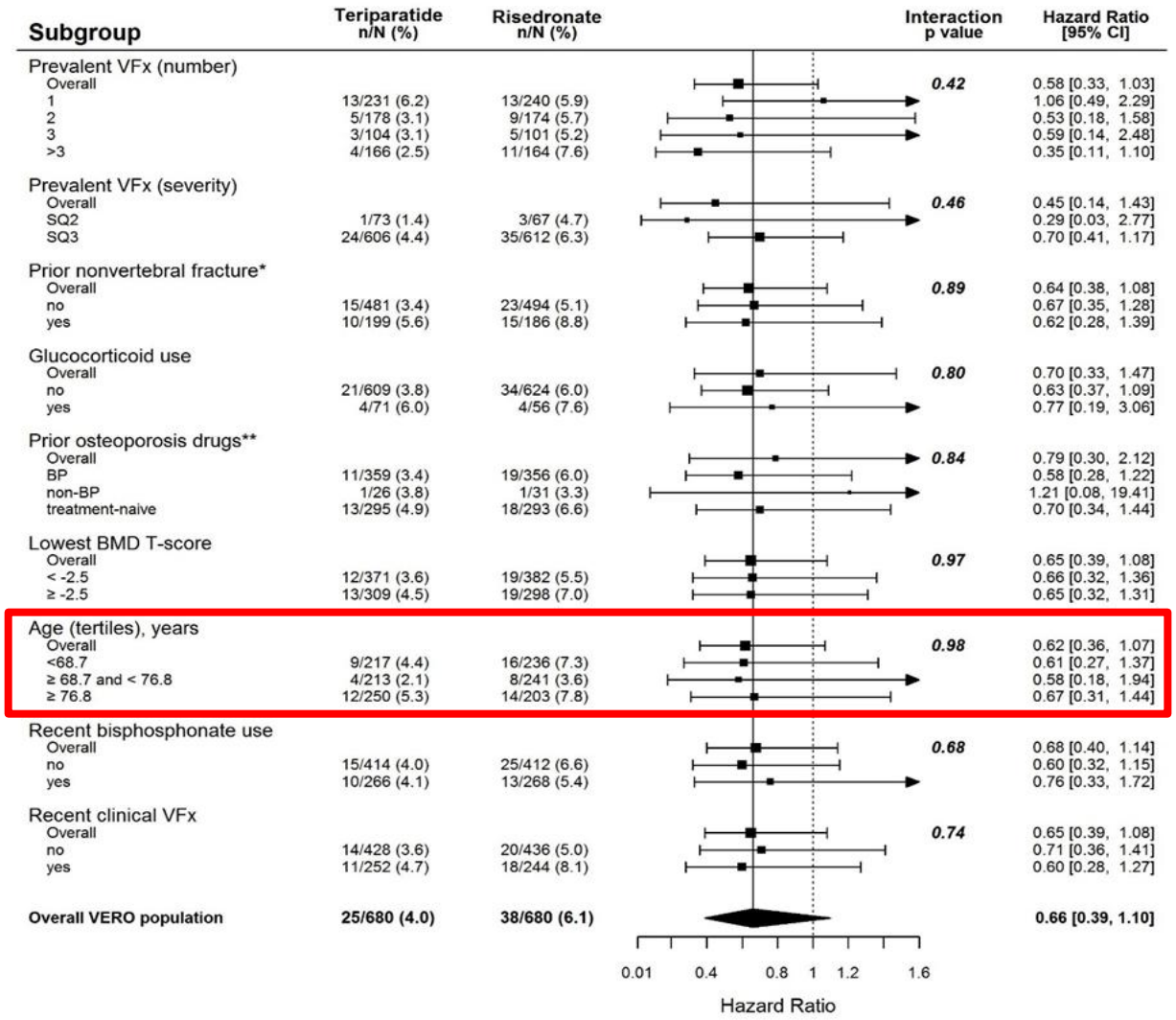
McLung M.R. et al., N.E.J.M., 2001

FREEDOM TRIAL

Denosumab reduces the risk of vertebral fractures to the same extent in subjects aged ≥ 75 years as in subjects aged < 75 years.

McCLung M.R. et al., J.B.M.R., 2012

Results: Hazard Ratio for Non-vertebral Fragility Fractures (FAS)



BMD = bone mineral density;
BP = bisphosphonates;
CI = confidence interval;
FAS = full analysis set;
N = total number of patients;
n = number of patients in the specified category;
% = percentages indicate the cumulative incidence of fractures based on Kaplan-Meier method;
SQ = semiquantitative grading;
VFx = vertebral fracture

* Major non-vertebral fractures: hip, radius, humerus, ribs, pelvis, tibia, and femur (excluding pathologic fractures)

** Non-bisphosphonates include: strontium ranelate, denosumab, calcitonin, fluoride, and vitamin D active metabolites

Geusens et al. J Bone Miner Res. 2018 Jan 12. doi: 10.1002/jbmr.3384

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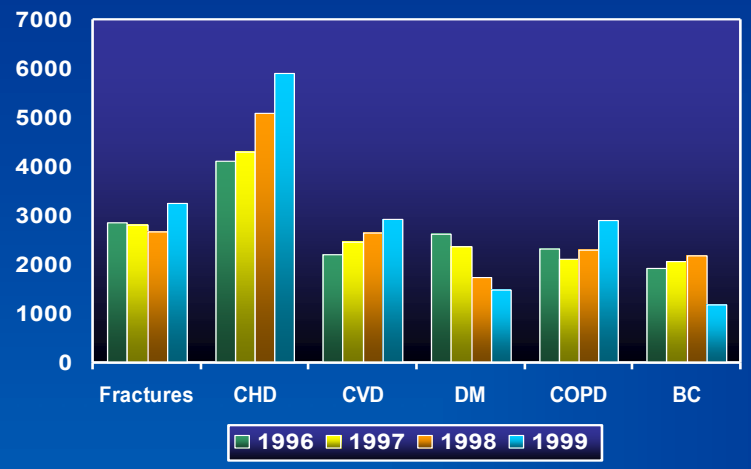
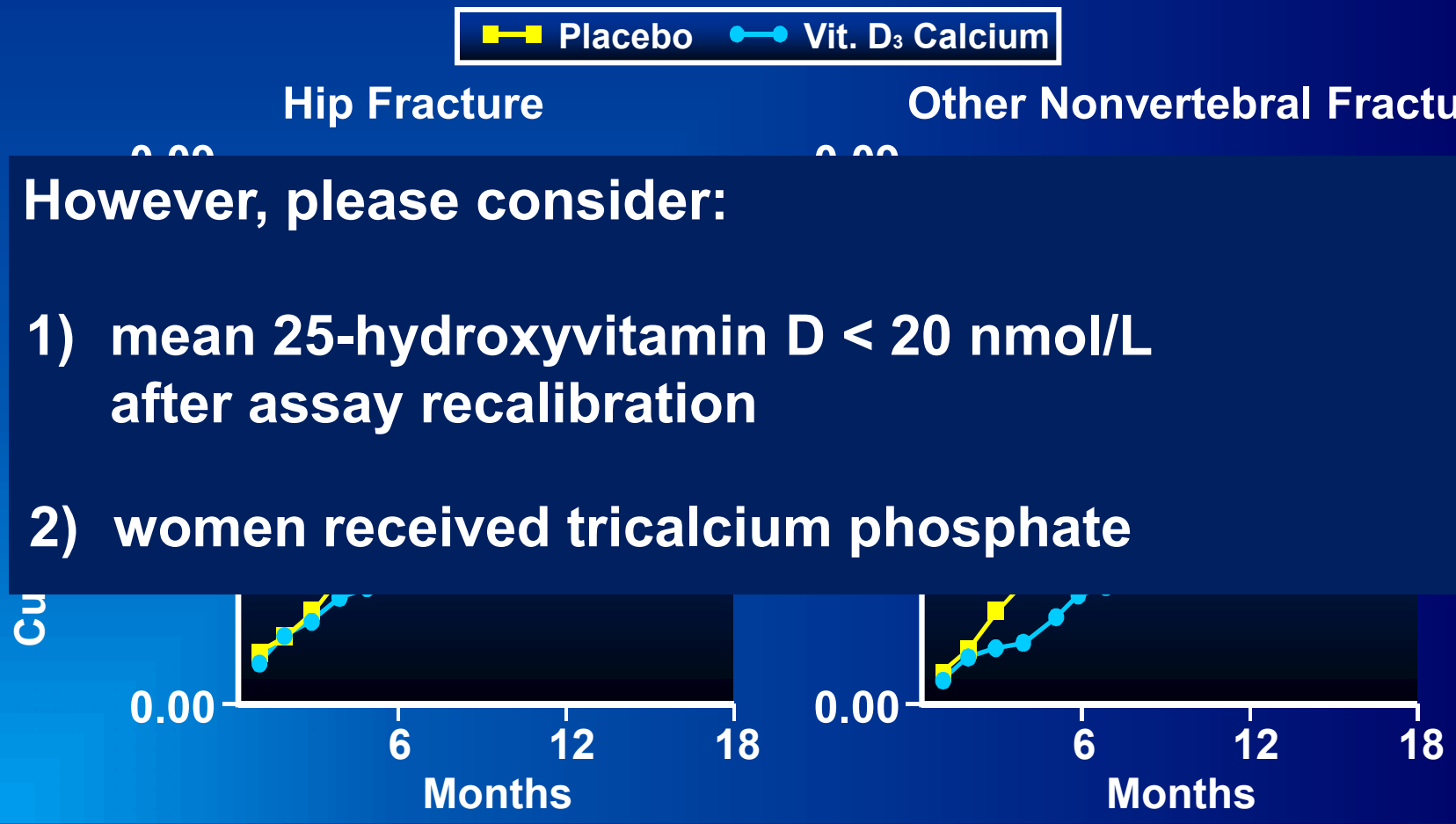
In-hospital *per patient* costs of care (euro) for fractures and other commonly hospitalized disorders : data from "Policlinico Umberto I" Hospital in Rome (1996-1999)



Romagnoli E. et al., Aging Clin. Exp. Res., 2005

CUMULATIVE PROBABILITY OF HIP AND NONVERTEBRAL FRACTURES IN PLACEBO AND VIT. D_3 CALCIUM TREATED GROUPS



However, please consider:

1) mean 25-hydroxyvitamin D < 20 nmol/L after assay recalibration

2) women received tricalcium phosphate

M.C. Chapuy et al., N. Engl. J. Med., 1992

OSTEOPOROSIS THERAPY: 2026

Osteoporosis therapy should be theoretically driven by at least two concepts:

1) RISK OF FRACTURE
2) TARGET TO BE REACHED

GOAL DIRECTED THERAPY IN OSTEOPOROSIS:

an achievable treatment target

TREATMENT TARGET SHOULD BE DETERMINED ACCORDING TO INDIVIDUAL RISK PROFILE

- ✓ Recency of fracture
- ✓ Number and site of prior fractures
- ✓ Severity of prior vertebral fracture(s)
- ✓ Severity of osteoporosis based on BMD at the TH, FN and/or LS
- ✓ Age and other strong risk factors for fracture

ASBMR/BHOF Task Force on Goal-Directed Osteoporosis Treatment

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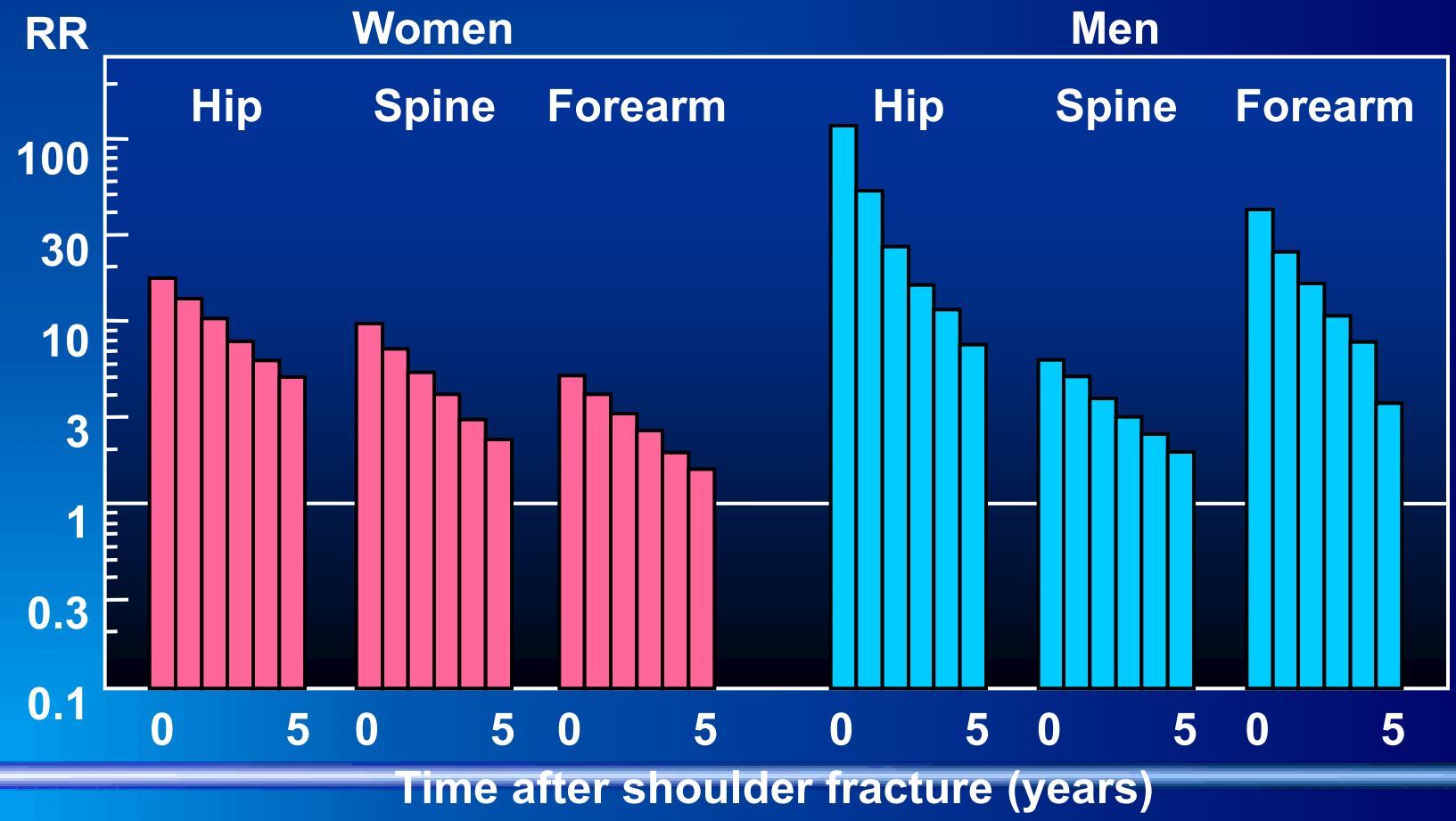
ASBMR/BHOF Task Force on Goal-Directed Osteoporosis Treatment

Relative risk of hip, spine and forearm fracture according to time after a shoulder fracture in men and women at the age of 60 years



Johnell O. et al., Osteoporos. Int., 2004

OSTEOPOROSIS THERAPY: 2026

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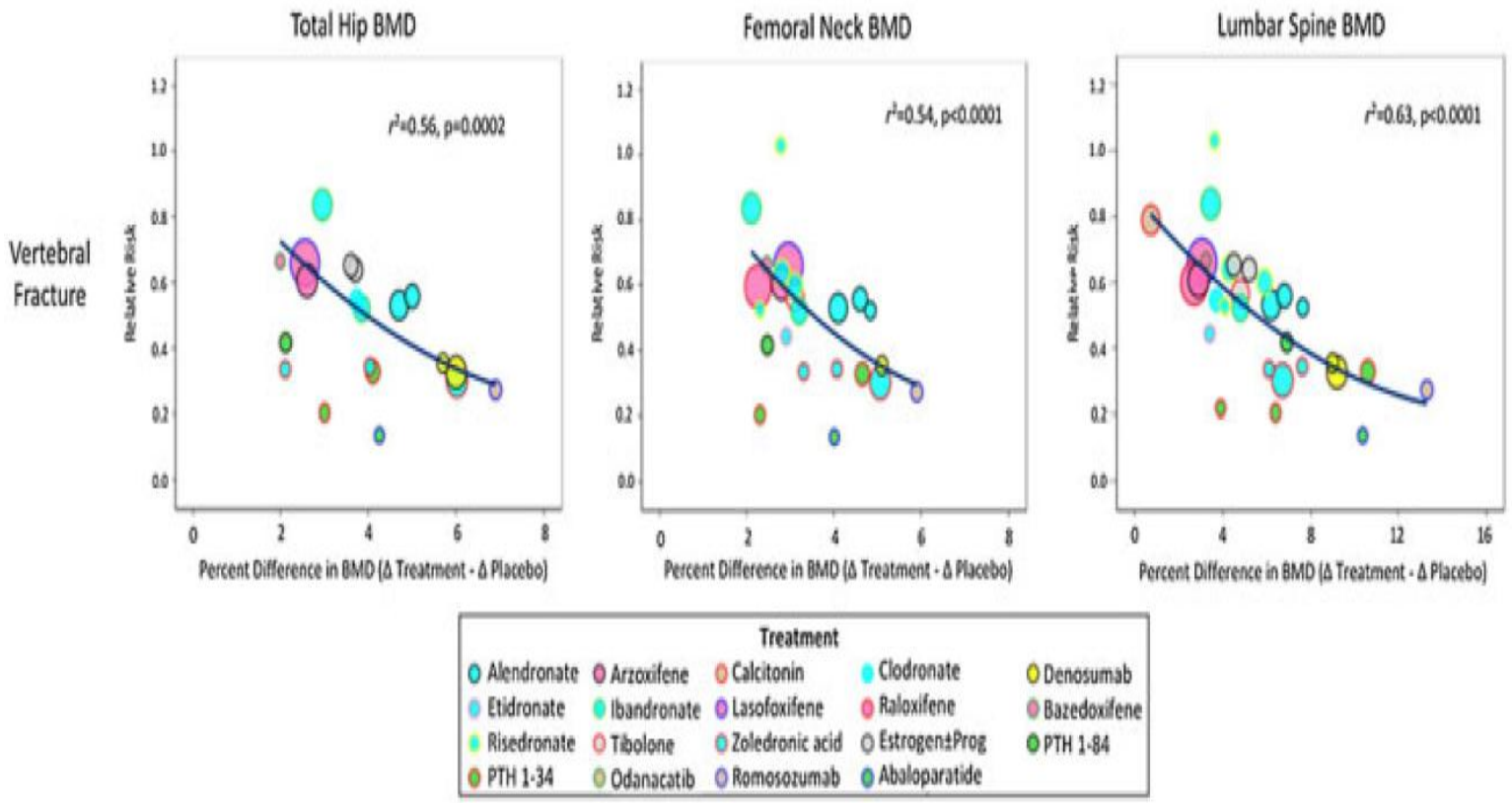
Association between treatment-related differences in BMD (Active-Placebo, in %) and reduction in vertebral fracture risk. Individual trials are represented by circles with areas that are approximately proportional to the number of fractures in the trial. Drugs of the same class are represented by the symbols of the same color.



Bouxsein M. L. et al., J.B.M.R., 2019

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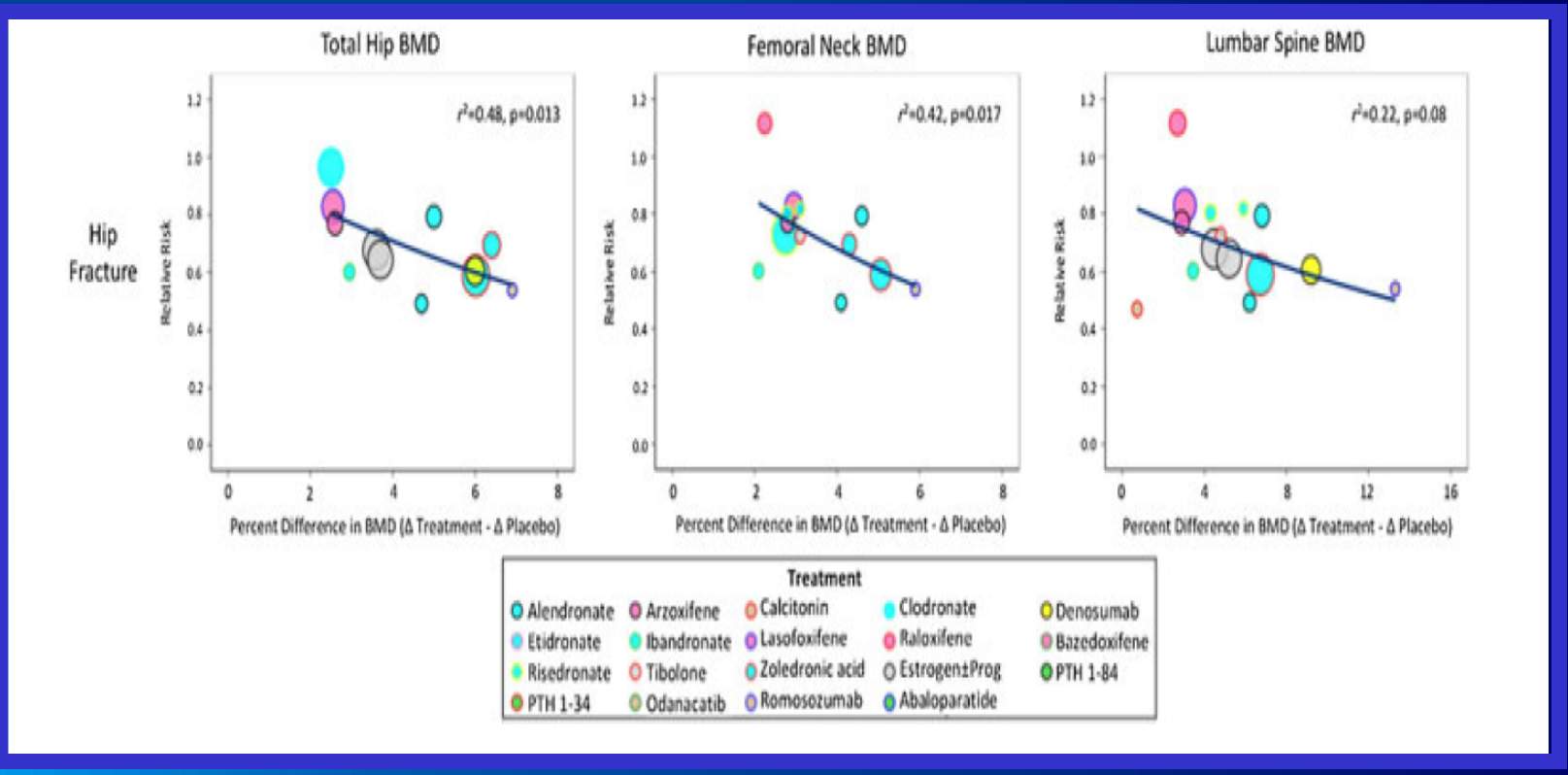

Bouxsein M. L. et al., J.B.M.R., 2019

Lowest baseline T-score that permits > 50% of women to achieve a T-score > −2.5 in approximately 3 yr.

A 55-year old patient with a recent hip fracture and a total hip T-score of -3.0

	Total Hip	Lumbar Spine
Alendronate	−2.7	−3.0
Denosumab	−2.8	−3.1
Romosozumab/Alendronate	−2.9	−3.5
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ZOLEDRONATE AND MORTALITY

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 NOVEMBER 1, 2007 VOL. 357 NO. 18

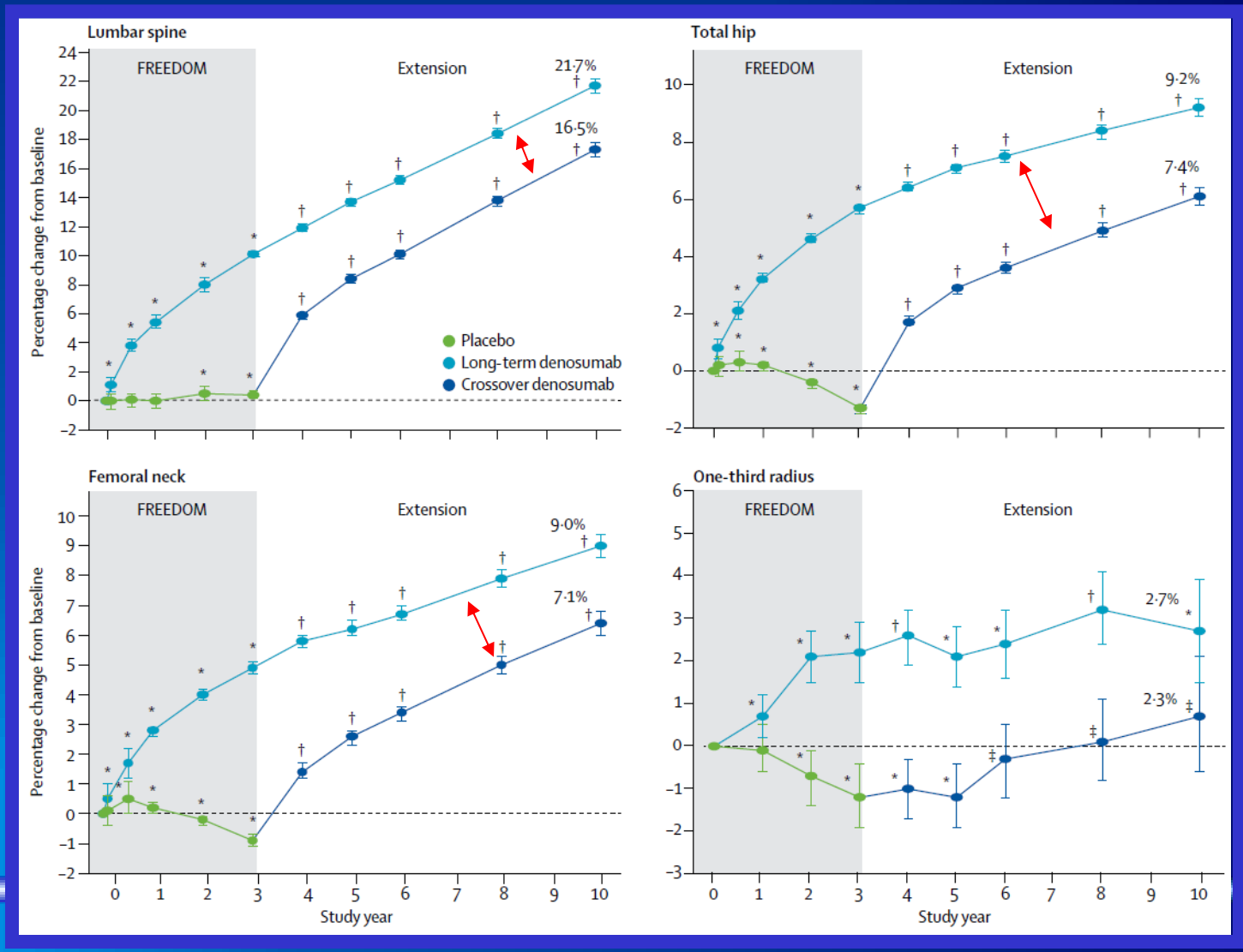
Zoledronic Acid and Clinical Fractures and Mortality after Hip Fracture

Kenneth W. Lyles, M.D., Cathleen S. Colón-Emeric, M.D., M.H.Sc., Jay S. Magaziner, Ph.D., Jonathan D. Adachi, M.D., Carl F. Pieper, D.P.H., Carlos Mautalen, M.D., Lars Hyldstrup, M.D., D.M.Sc., Chris Recknor, M.D., Lars Nordsletten, M.D., Ph.D., Kathy A. Moore, R.N., Catherine Lavecchia, M.S., Jie Zhang, Ph.D., Peter Mesenbrink, Ph.D., Patricia K. Hodgson, B.A., Ken Abrams, M.D., John J. Orloff, M.D., Zebulun Horowitz, M.D., Erik Fink Eriksen, M.D., D.M.Sc., and Steven Boonen, M.D., Ph.D., for the HORIZON Recurrent Fracture Trial*

CONCLUSIONS

An annual infusion of zoledronic acid within 90 days after repair of a low-trauma hip fracture was associated with a reduction in the rate of new clinical fractures and with improved survival. (ClinicalTrials.gov number, NCT00046254.)

BMD CHANGES IN FREEDOM EXTENSION

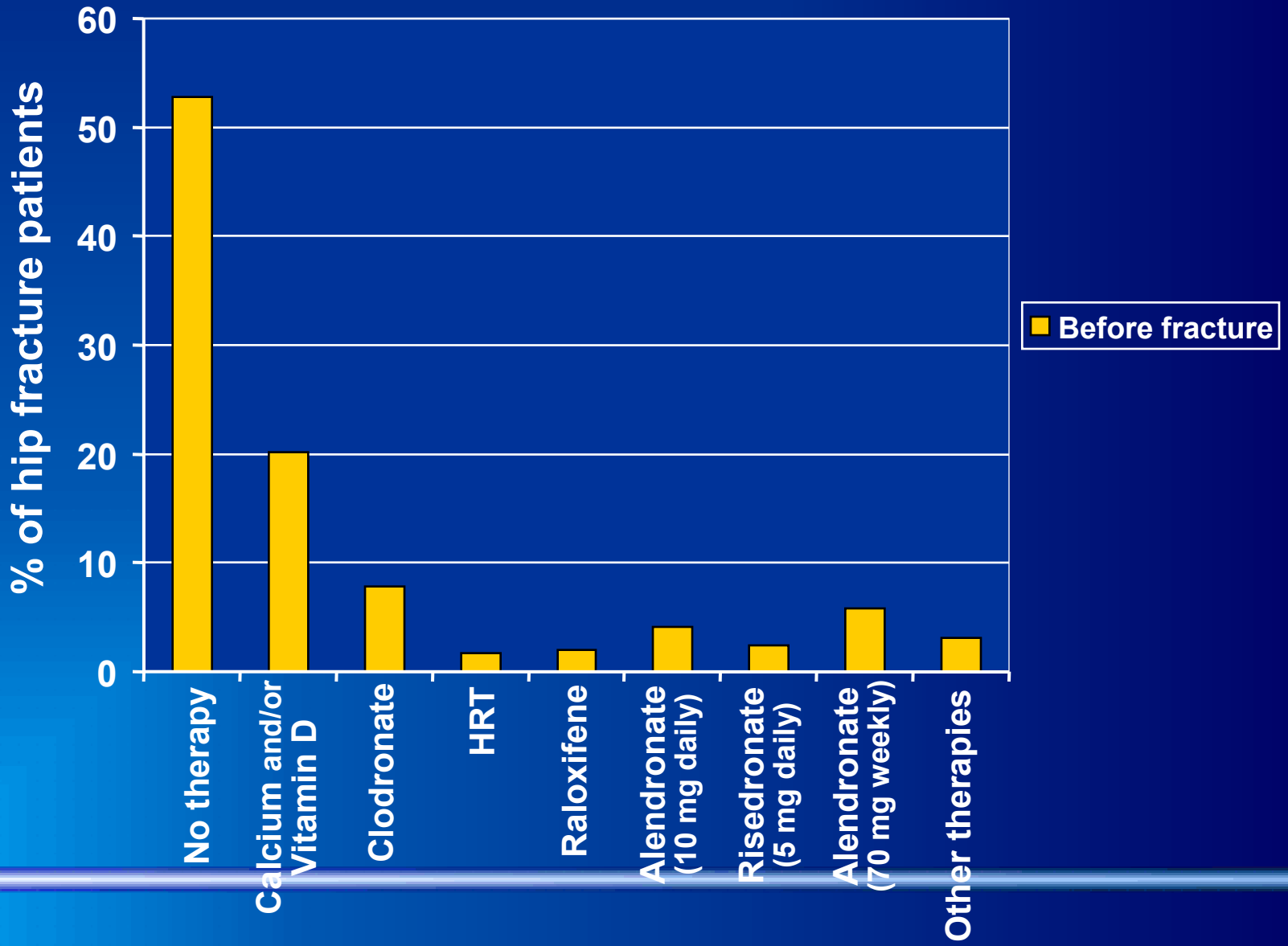


Bone H.G. et al., L.D.E., 2017

MULTIFACTORIAL APPROACH

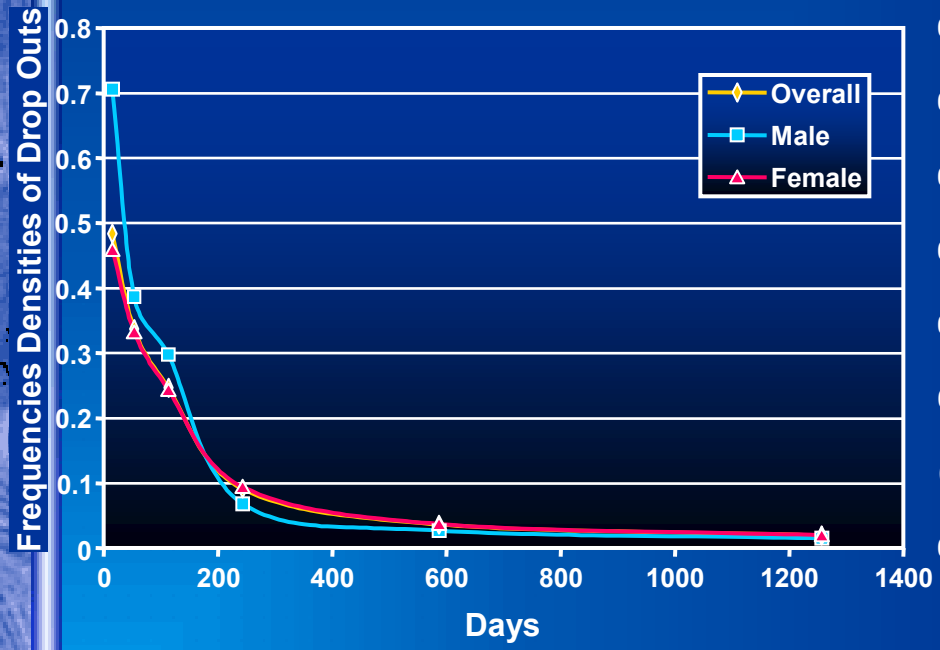
1) Tackling risk factors
2) Preventing falls
3) Encouraging regular exercise (resistance training exercise is the cornerstone of sarcopenia therapy)
4) Ensuring adequate calcium and vitamin D supplementation
5) Timely initiation of drug therapy
6) Continuous re-evaluation of fracture risk
7) Determining if freatment targets has been achieved

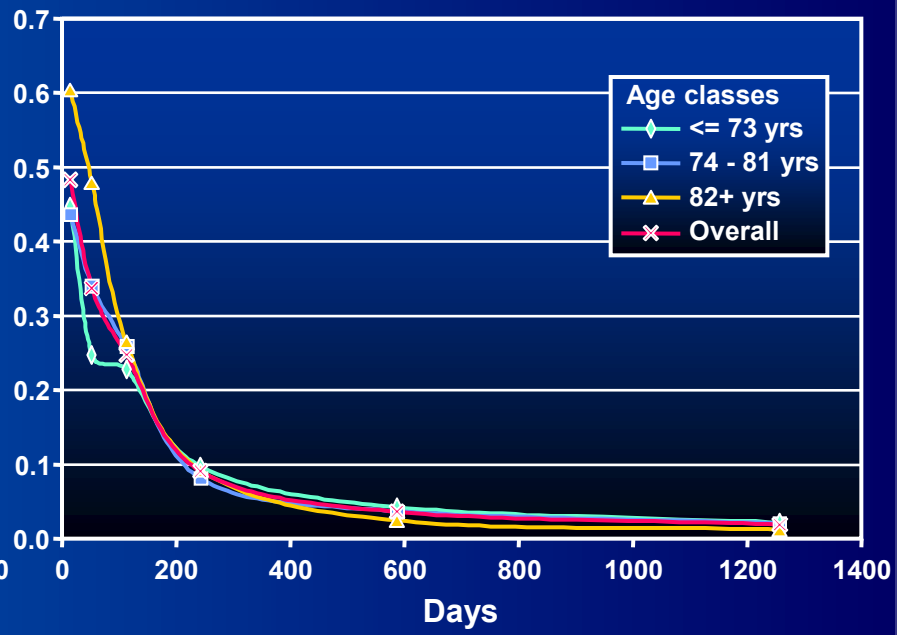
Pharmacological therapy of hip fracture



Carnevale V. et al., Osteoporos. Int., 2006

Treatment discontinuation following hip fracture





Carnevale V. et al., Osteoporos. Int., 2006

Fracture Liaison Service (FLS)

EMERGENCY
TRIAGE

Coordinator

OUTPATIENT CLINIC

HOSPITALIZATION

IDENTIFY AT RISK PATIENTS

SYSTEMATIC INVESTIGATION AND RISK ASSESSMENT

- Bone health
- Risk of falls
- Therapeutic options

APPROPIATE TREATMENT INITIATION
Pharmacologic /No pharmacologic

PRIMARY CARE
Referral to first level or specialised units

ONGOING TREATMENT AND FRACTURE MONITORING

INTEGRATION OF INFORMATION

CONCLUSIONI

- Abbiamo una ampia disponibilità di farmaci per la terapia dell'osteoporosi che possono essere prescritti sulla base del rischio fratturativo del singolo paziente.
- Non è mai troppo tardi per iniziare la terapia dell'osteoporosi,