



**ΕΕΜΜΟ**

Ελληνική Εταιρεία  
Μελέτης Μεταβολισμού  
των Οστών

Επιστημονική Εκδήλωση  
**Μεταβολικά νοσήματα  
των οστών**

Βιβλιογραφική Ενημέρωση

**29-31 Μαρτίου 2019**  
Ξενοδοχείο Anemolia, Αράχωβα

Παρασκευή 29 Μαρτίου 2019

**Προεδρείο: Ν. Παπαϊωάννου - Μ. Ποτούπνης**

19.30 - 20.00 Δευτερογενής πρόληψη καταγμάτων -  
Θεραπευτικό κενό  
Χρ. Κοσμίδης

20.00 - 20.30 Η εφαρμογή του νέου θεραπευτικού  
πρωτοκόλλου στην καθημερινή κλινική πράξη  
Π. Μάκρας

20.30 - 21.00 Ερωτήσεις - Συζήτηση

## Περιεχόμενα παρουσίασης

- 9 δημοσιεύσεις
- 1 ανακοίνωση
- 1 κλινική οδηγία
- 1 πίνακας «προδημοσίευσης»
- Συμπεράσματα

Αποτύπωση του προβλήματος

## Rates of osteoporosis screening and treatment following vertebral fracture

David W. Barton, Caleb J. Behrend, Jonathan J. Carmouche

### Results

- All 2,933 patients, 50 years of age or older, who presented to an emergency department with a new vertebral fracture between 2008 and 2014.
- 98% did not receive a DXA scan within the preceding 2 years or 1 year following fracture.
- 7% of patients were started on antiresorptive therapy after their fracture.
- 21% had taken an antiresorptive medication before their fracture.
- 73% were **never** prescribed antiresorptive therapy.
- **38% of patients presenting with a vertebral fracture (n=1,115) went on to develop a second fragility fracture within 2 years.**

### Conclusions

In the absence of a specific local program to improve secondary fracture prevention following minimal trauma spinal fractures....

... **a profound post vertebral fracture osteoporosis care gap.**

Osteoporosis International (2018) 29:1827–1832

**Low rates of osteoporosis treatment after hospitalization for hip fracture in Hawaii**

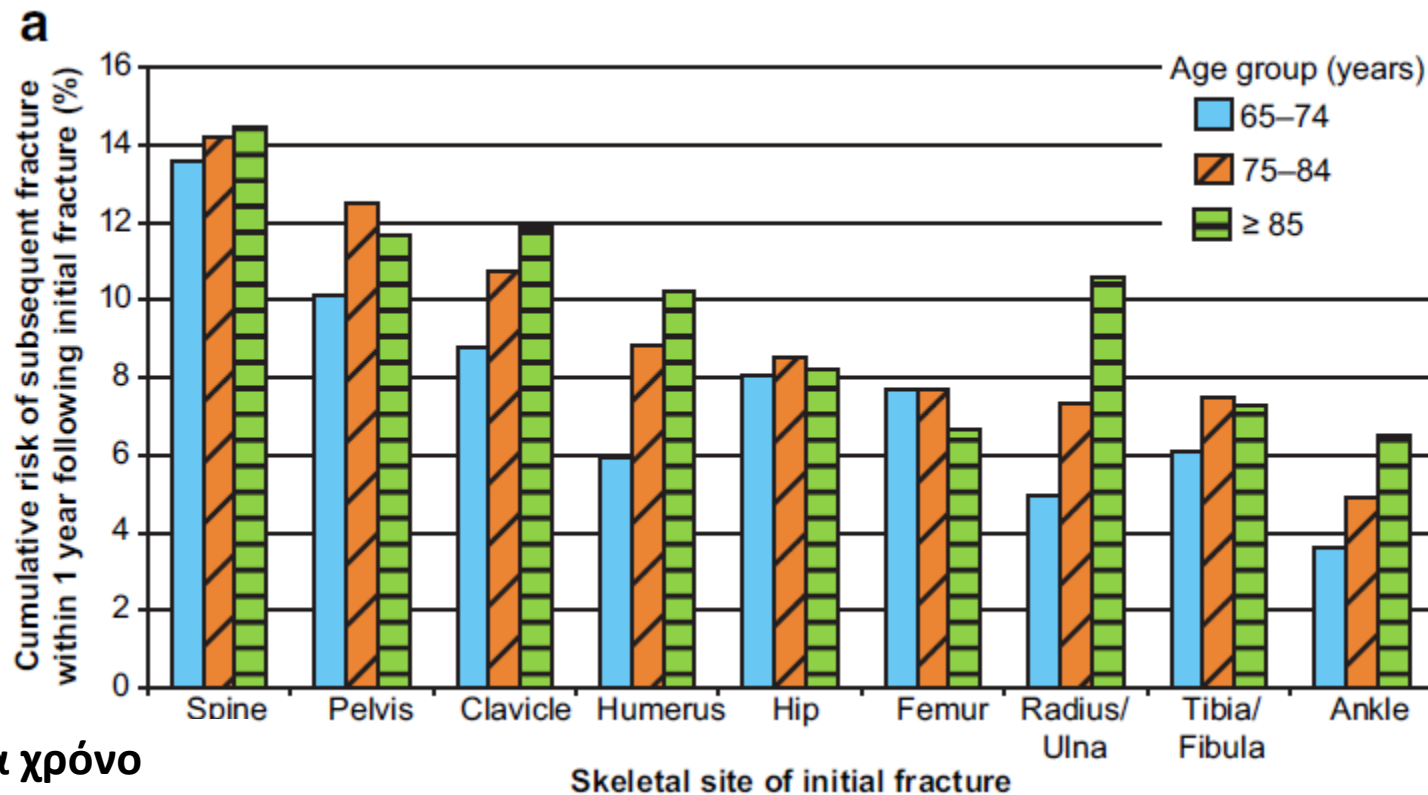
E.T. Nguyen & T. Posas-Mendoza & A.M. Siu & H.J. Ahn & S.Y. Choi & S.Y. Lim

- **Methods** A retrospective chart review was conducted (n = 428) of patients  $\geq 50$  years and hospitalized for hip fractures
- **Results** Only 115 (26.9%) patients were prescribed a medication for osteoporosis as a secondary prevention **within a year of hospitalization for hip fracture**. DEXA scans were performed in 137 (32.0%) patients.

## Risk of subsequent fracture after prior fracture among older women

A. Balasubramanian & J. Zhang & L. Chen & D. Wenkert & S. G. Daigle & A. Grauer & J. R. Curtis

- **Summary** Among 377,561 female Medicare beneficiaries who sustained a fracture, 10% had another fracture within 1 year, 18% within 2 years, and 31% within 5 years.

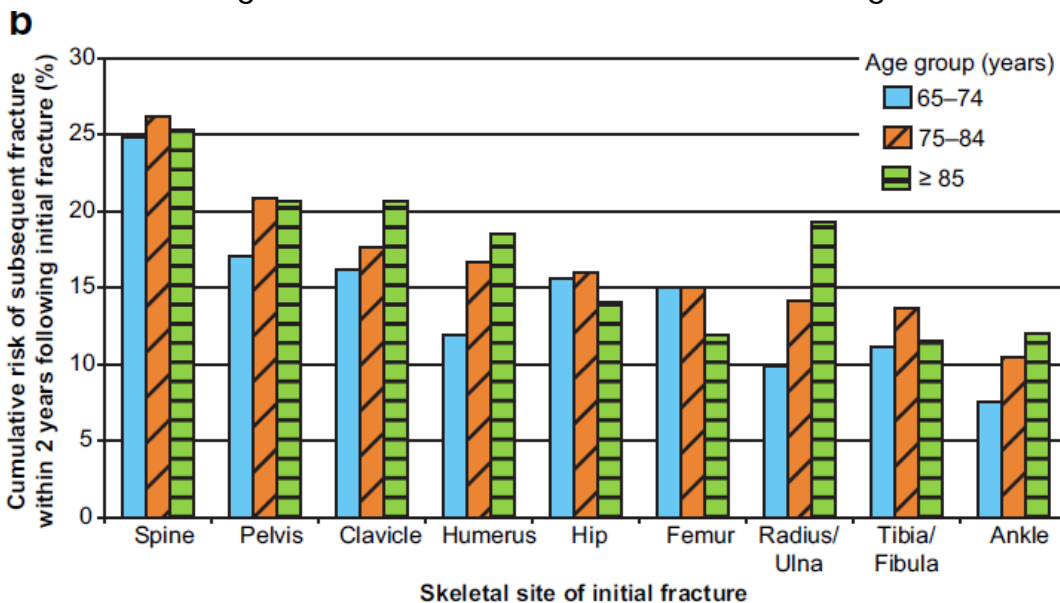


Μετά ένα χρόνο

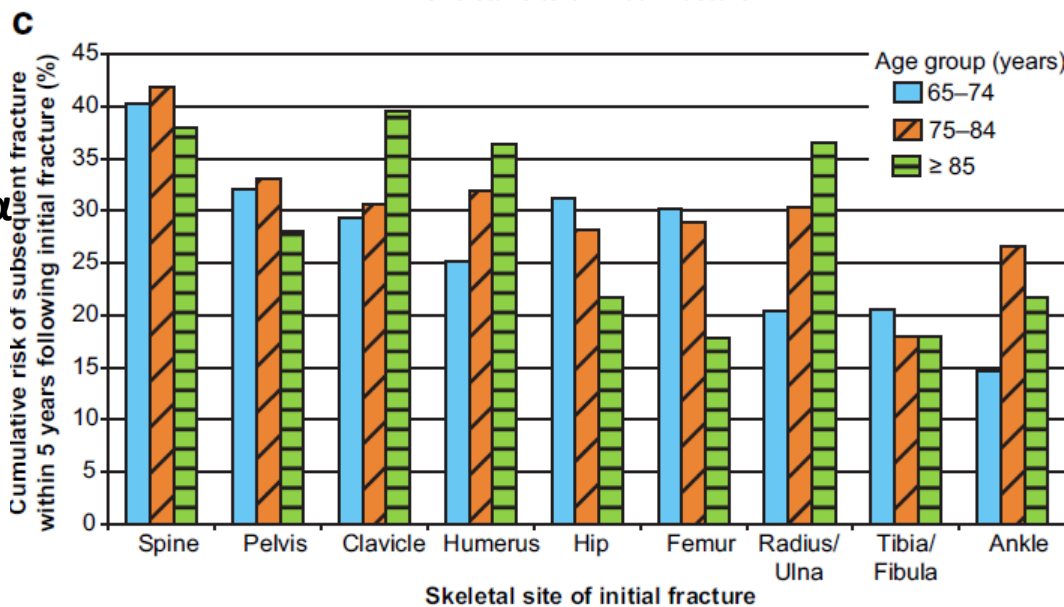
# Risk of subsequent fracture after prior fracture among older women

A. Balasubramanian & J. Zhang & L. Chen & D. Wenkert & S. G. Daigle & A. Grauer & J. R. Curtis

Μετά δύο χρόνια



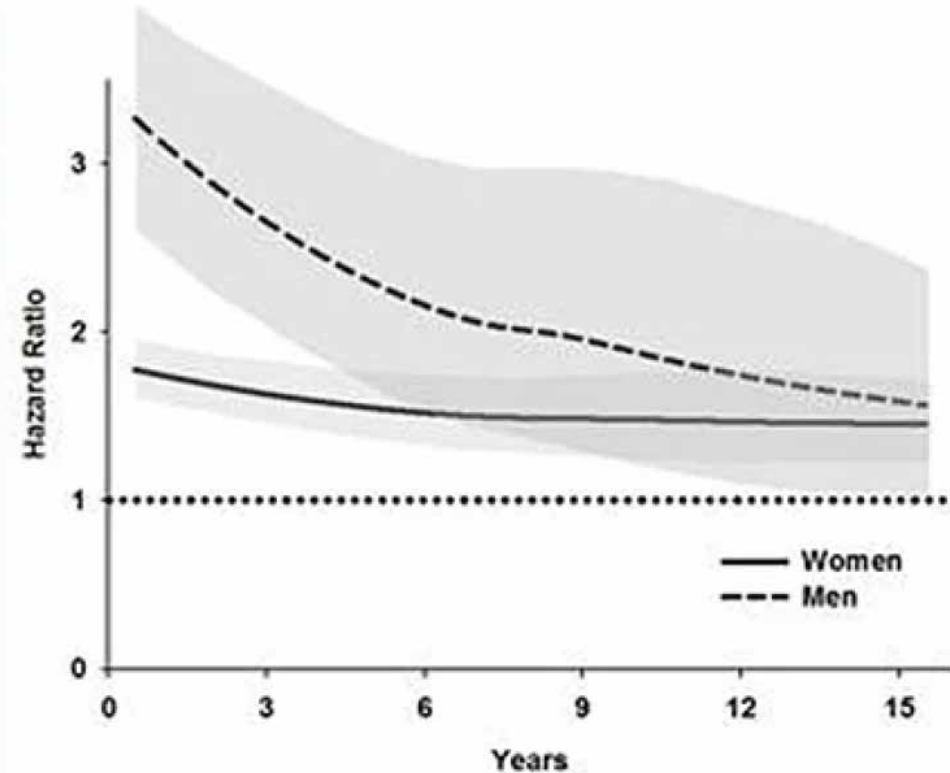
Μετά πέντε χρόνια



**Changes at the risk of subsequent major osteoporotic fractures over time in men and women: a population-based observational study with 25-year follow-up**

Morin SN., Yan L., Lix LM, Leslie WD

- They identified 17,721 men and 40,062 women age 50 years and older who had a fracture from 1989 to 2006 in Manitoba, **and they matched each of them with three controls of the same age and sex.**
- Of these, 29,694 individuals had a major osteoporotic fracture (11,028 forearm, 9313 hip, 5799 humerus, and 3554 spine fractures) and were included in the study.
- The mean follow-up duration was 9.9 years, with some individuals followed for up to 25 years.



**Changes at the risk of subsequent major osteoporotic fractures over time in men and women: a population-based observational study with 25-year follow-up**

Morin SN., Yan L., Lix LM, Leslie WD

<b>Initial Fracture Site</b>	<b>Subsequent Major Osteoporotic Fracture in <u>Men</u>, HR (95% CI)</b>	<b>Subsequent Major Osteoporotic Fracture in <u>Women</u>, HR (95% CI)</b>
<b>Hip</b>	<b>2,3 (2,0 – 2,7)</b>	<b>1,4 (1,3 – 1,5)</b>
<b>Humerus</b>	<b>3,6 (3,0 – 4,4)</b>	<b>2,0 (1,9 – 2,2)</b>
<b>Spine</b>	<b>2,5 (2,0 – 3,0)</b>	<b>2,3 (2,1 – 2,6)</b>
<b>Forearm</b>	<b>2,4 (2,1 – 2,8)</b>	<b>1,6 (1,5 – 1,7)</b>
<b>All major osteoporotic fracture sites</b>	<b>2,5 (2,3 – 2,7)</b>	<b>1,6 (1,6 – 1,7)</b>

Η σωστή Υπηρεσία Ελέγχου Καταγμάτων (FLS) μειώνει το πρόβλημα και πληρώνει

## European guidance for the diagnosis and management of osteoporosis in postmenopausal women

J.A. Kanis & C. Cooper & R. Rizzoli & J.-Y. Reginster & on behalf of the Scientific Advisory Board of the European Society for Clinical and Economic Aspects of Osteoporosis (ESCEO) and the Committees of Scientific Advisors and National Societies of the International Osteoporosis Foundation (IOF)

- **Fracture liaison services**
- Use of a systematic coordinator approach in the Kaiser Permanente Healthy Bones Program (California) was associated with a **40% reduction in hip fractures**.
- Recent studies from the UK [316–318] reported that the initiation of FLS **reduced the 30-day and 1-year mortality rates following hip fracture**, led to a **significant reduction in second fracture rate** and increased the utilisation of anti-osteoporosis treatment by 15%.

**Economic impact and cost-effectiveness of fracture liaison services: a systematic review of the literature**

C.-H. Wu & I.-J. Kao & W.-C. Hung & S.-C. Lin & H.-C. Liu & M.-H. Hsieh & S. Bagga & M. Achra & T.-T. Cheng & R.-S. Yang

- This systematic review identified studies reporting economic outcomes for FLS in osteoporotic patients aged 50 and older through a comprehensive search of MEDLINE, EMBASE, Cochrane Central, and PubMed of studies published January, 2000 to December, 2016.
- In total, 23 qualified studies that evaluated the economic aspects of FLS were included: 16 cost-effectiveness studies, 2 cost-benefit analyses, and 5 studies of cost savings.
- Cost-effectiveness studies were conducted in Canada, Australia, USA, UK, Japan, Taiwan, and Sweden.

## Economic impact and cost-effectiveness of fracture liaison services: a systematic review of the literature

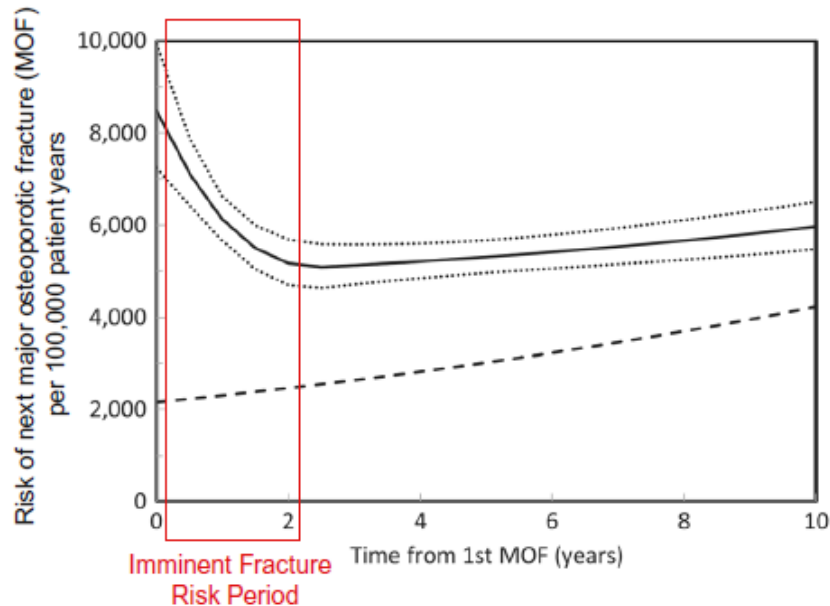
C.-H. Wu & I.-J. Kao & W.-C. Hung & S.-C. Lin & H.-C. Liu & M.-H. Hsieh & S. Bagga & M. Achra & T.-T. Cheng & R.-S. Yang

### Discussion

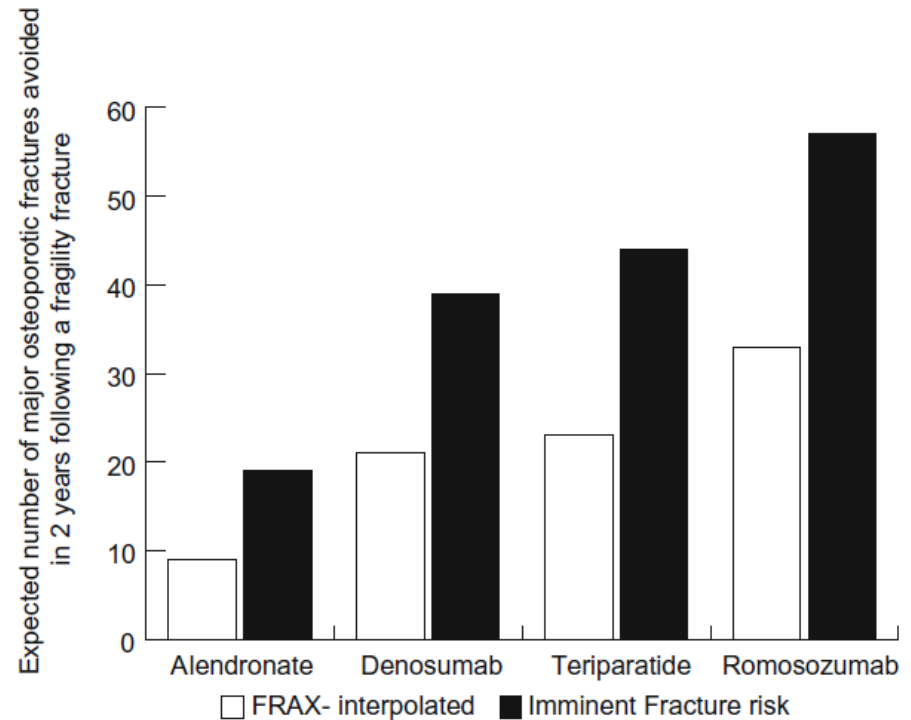
- FLS have been reported to be cost-effective and have been associated with gains in QALYs for costs below standard cost per QALY and willingness to pay thresholds in respective countries.
- FLS do confer additional costs, including those directly related to the program (e.g., printing, mailings, staff salaries, additional office or clinic space), costs related to additional patient assessment (e.g., DXA scanners), and cost of treatment (e.g., initiation of pharmaceutical treatment by previously untreated patients, increased drug costs related to greater medication compliance and adherence).
- **Despite these additional costs** as well as demands for specialized diagnostic equipment, and medical and administrative staff, **FLS have been shown to be cost-effective**. FLS can be cost-effective without necessarily being cost-saving. However, cost savings have been reported for several programs where FLS costs were **more than offset by costs avoided through reductions in the number of subsequent fractures that occurred**.

## Imminent fracture risk assessments in the UK FLS setting: implications and challenges

Rafael Pinedo-Villanueva & Mata Charokopou & Emese Toth & Kerry Donnelly & Cyrus Cooper & Daniel Prieto-Alhambra & Cesar Libanati & Muhammad K. Javaid



**Fig. 1** Time dependency of re-fracture after index fracture adapted from Johansson et al. [15]



Recently, in head-to-head randomised controlled trials, specific AOMs (teriparatide [33], romosozumab [34], and denosumab [35]—noting the denosumab trial had a randomised open-label alendronate comparator arm) **demonstrate both earlier onset of fracture reduction and superiority over oral bisphosphonates within the IFR period of 2 years**, and so could be classified as potent AOMs.

Χαρακτηριστικά αποτυχημένης και επιτυχημένης ΥΕΚ (FLS)

# Υπηρεσία Ελέγχου Καταγμάτων 2015-2017

Υποδοχή ασθενών με κατάγματα επί 12 μήνες

Παρακολούθηση κάθε ασθενούς για 12 μήνες

## ΥΕΚ

(Ασθενείς >50 ετών με κατάγματα χαμηλής βίας)

ΝΟΣΟΚΟΜΕΙΟ	ΕΙΣΑΧΘΕΝΤΕΣ ΣΤΗ ΜΕΛΕΤΗ	ΣΥΝΟΛΟ ΥΠΟΔΕΧΘΕΝΤΩΝ
Αγία Όλγα	152	293
Παπαγεωργίου	55	319
Λάρισα	136	566
Αλεξανδρούπολη	54	287
ΣΥΝΟΛΑ	397 (27,1%)	1465

**Improvement of Osteoporosis Medication after Multimodal Intervention in Patients with Hip Fracture: Prospective Multicenter Study**

Yong-Geun Park, Kwang Woo Nam, Sang-Rim Kim, Min-Suk Park, Sang-Jae Kim, Yong-Chan Ha

- **Results:**

- During the hospitalization period, patients underwent education sessions and were provided brochures.

Of the **222 patients with hip fractures,**

**190 patients** (37 men, 153 women) were enrolled at six hospitals in 2015.

**Dual energy X-ray absorptiometry was performed on 115 patients (60.5%) and 92 patients (48.4%) were prescribed medication for osteoporosis at the time of discharge.**

**A total of 43.7% and 40.2% of the patients were found to be compliant with osteoporosis medication at 6 months and 12 months follow-up respectively.**

**Identifying characteristics of an effective fracture liaison service: systematic literature review**

C.-H. Wu & C.-H. Chen & P.-H. Chen & J.-J. Yang & P.-C. Chang & T.-C. Huang & S. Bagga & Y. Sharma & R.-M. Lin & D.-C. Chan

- The SLR identified several components which contributed to FLS success, including
  - ∅ multidisciplinary involvement,
  - ∅ driven by a dedicated case manager,
  - ∅ regular assessment and follow-up,
  - ∅ multifaceted interventions and
  - ∅ patient education.
- Meta-analytic data confirm the effectiveness of an FLS following an osteoporotic fracture: approximate **27% increase in the likelihood of BMD testing** and up to **21% increase in the likelihood of treatment initiation** compared with usual care.

Μη επιτευχθέντες στόχοι

**Fracture liaison services for osteoporosis in the Asia-Pacific region: current unmet needs and systematic literature review**

Y. -F. Chang & C. -F. Huang & J. -S. Hwang & J. -F. Kuo & K. -M. Lin & H. -C. Huang & S. Bagga & A. Kumar & F. -P. Chen & C. -H. Wu

- A systematic literature review (SLR) of Medline, PubMed, EMBASE, and Cochrane Library (2000–2017 inclusive) was performed
- ... 159 publications, reporting 37 studies in Asia-Pacific.
- These studies revealed the unmet need for
  - ∅ **public health education,**
  - ∅ **adequate funding, and staff resourcing,**
  - ∅ **along with greater cooperation between departments and physicians.**
- The findings also emphasize the importance of **primary care physicians continuing to prescribe treatment and ensure service remains convenient.**

# Οδηγίες ASBMR

*American Society for Bone and Mineral Research Secondary Fracture Prevention Initiative Coalition releases new recommendations*

MONTREAL (29 September 2018)

**The Problem**

- Only 23 percent of elderly patients who suffer a hip fracture receive osteoporosis medication to reduce future fracture risk compared to 96 percent of heart attack patients who receive beta blockers to prevent a future heart attack.
- The risk of further fractures after a first major osteoporotic fracture is greatest immediately following the first event.
- Recently, a 30-year downward trend in the number of hip fractures in the United States has plateaued, raising concerns that this may be due to doctors and patients not following diagnostic and treatment guidelines.

**The ASBMR Secondary Fracture Prevention Initiative Clinical Care Recommendations**

- **Offer pharmacologic therapy for osteoporosis to women and men, age 65 years or older, with a hip or vertebral fracture, to reduce their risk of additional fractures.**
- Pharmacologic therapy (oral or intravenous) can begin in the hospital and be included in their discharge orders, although some practitioners prefer to delay intravenous zoledronic acid for a few weeks.
- Do not delay initiation of therapy for bone mineral density (“BMD”) testing. Although BMD testing may be performed to monitor responses to treatment, therapy should be offered regardless of BMD levels.
- Consider patients’ oral health before starting therapy with bisphosphonates or denosumab.

# Συμπεράσματα

- Είναι ιδιαίτερα συχνά τα επόμενα κατάγματα χαμηλής βίας, μετά τα πρώτα, ιδίως τα πρώτα δύο χρόνια μετά το πρώτο και ιδίως σε άνδρες.
- Υπάρχει τεράστιο θεραπευτικό κενό για την αποφυγή του δευτέρου κατάγματος, παγκοσμίως.
- Η σωστά οργανωμένη «Υπηρεσία Ελέγχου Καταγμάτων» (FLS) μειώνει δραστικά την πιθανότητα επομένου κατάγματος και μειώνει το συνολικό κόστος της οστεοπόρωσης.
- Η επιτυχημένη ΥΕΚ έχει:
  - ∅ Οργάνωση και καθοδήγηση από ειδικό επόπτη
  - ∅ Καταγραφή στοιχείων και παρακολούθηση ασθενών
  - ∅ Πολύπλευρες παρεμβάσεις (κατοικία, διατροφή, πολυφαρμακία, τρόπος και συνήθειες ζωής)
  - ∅ **Εκπαίδευση ασθενών**
  - ∅ **Επαρκή χρηματοδότηση και στελέχωση**
  - ∅ **Αυξημένη συνεργασία μεταξύ επαγγελματιών υγείας**



...δεν είναι όλες οι μέλισσες εργατικές...