

Manejo clínico del paciente con fractura por fragilidad

Unidades de fractura por fragilidad como modelo asistencial

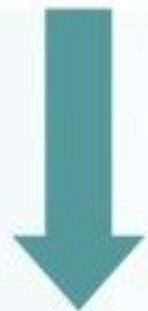


Dr. Bartolomé Lladó Ferrer
Servicio de Medicina Interna
Coordinador Unidad de Fractura por Fragilidad

What we Know

The Fracture Cascade + **The Care Gap**

One Fracture



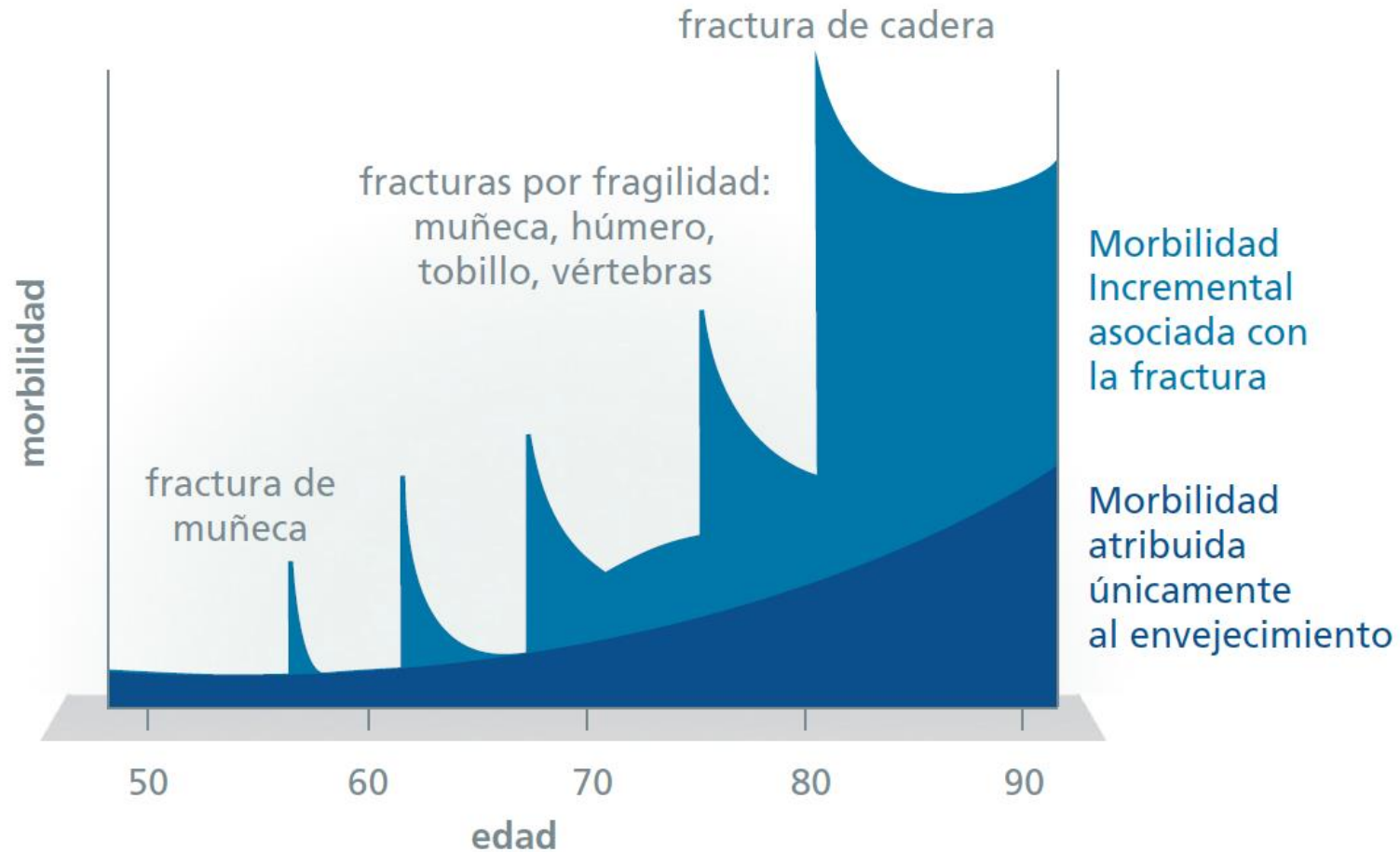
More Fractures



Healthcare systems around the world are failing to capture the fracture...and prevent the second fracture.



La “carrera osteoporótica” : fractura y morbilidad asociada durante toda la vida



Compound Risk of **High Mortality** Following Osteoporotic Fracture and **Refracture** in Elderly Women and Men

Dana Bliuc,¹ Nguyen D Nguyen,¹ Tuan V Nguyen,^{1,3} John A Eisman,^{1,2,3,4} and Jacqueline R Center^{1,2,3}

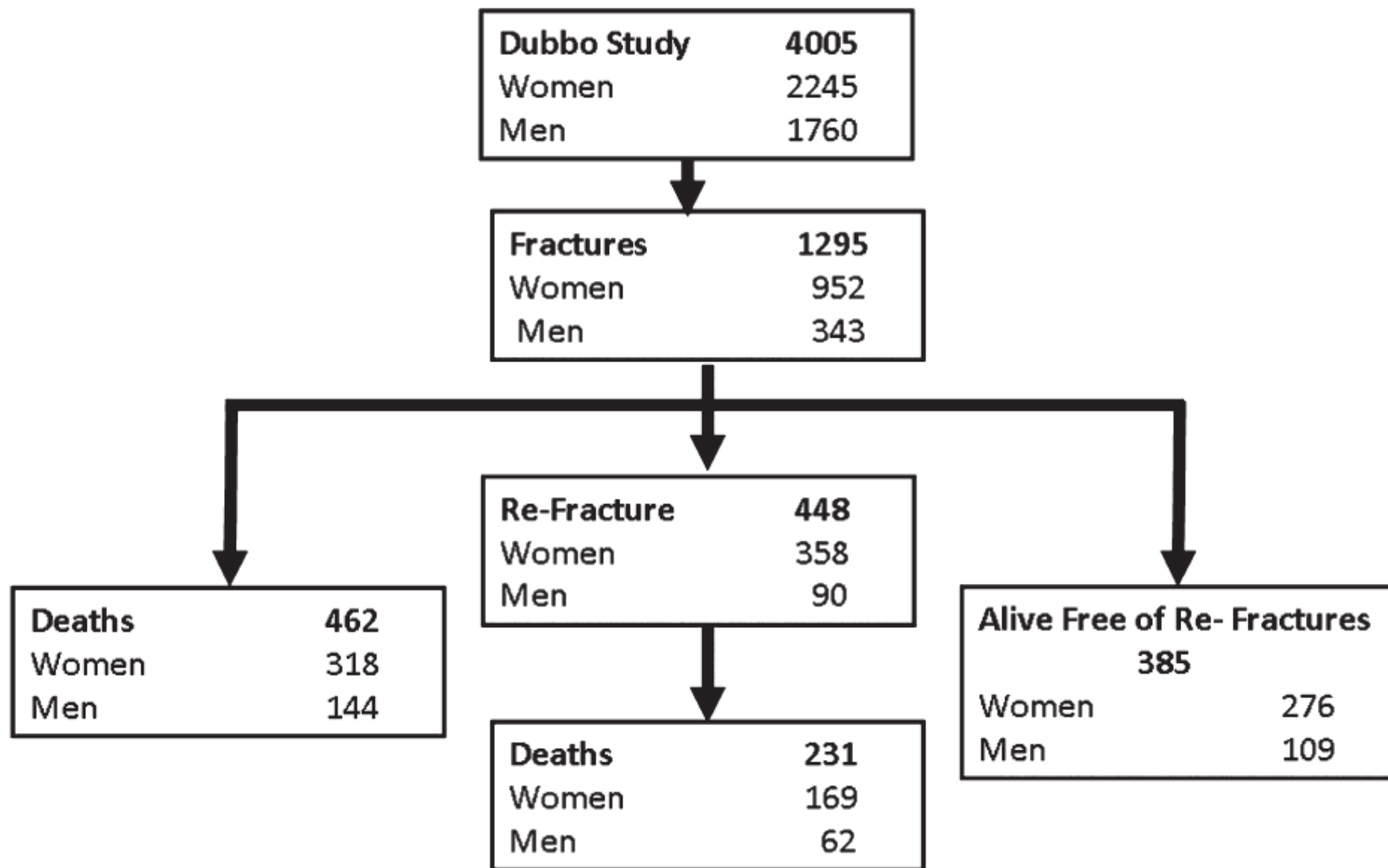
¹Osteoporosis and Bone Biology, Garvan Institute of Medical Research, Clinical Excellence and Research, School of Medicine, University of Notre Dame Medical School, Sydney, Australia

²Clinical School, St Vincent's Hospital, Sydney, Australia

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Dubbo Osteoporosis Epidemiology Study



Conclusions

- Refractures contribute substantially to overall mortality associated with fracture.
- The majority of the mortality and refractures occurred in the first 5 years following the initial fracture.
- However, excess mortality was observed for up to 10 years postfracture, predominantly related to that after refracture.

Patients with Prior Fractures Have an Increased Risk of Future Fractures: A Summary of the Literature and Statistical Synthesis*

CAROLYN M. KLOTZBUECHER, PHILIP D. ROSS, PAMELA B. LANDSMAN,
THOMAS A. ABBOTT III, and MARC BERGER

Osteoporos Int

DOI 10.1007/s00198-016-3868-0



ORIGINAL ARTICLE

Imminent risk of fracture after fracture

H. Johansson¹ • K. Siggeirsdóttir² • N. C. Harvey^{3,4} • A. Odén⁵ • V. Gudnason^{2,6} •
E. McCloskey⁵ • G Sigurdsson² • J. A. Kanis^{1,5}

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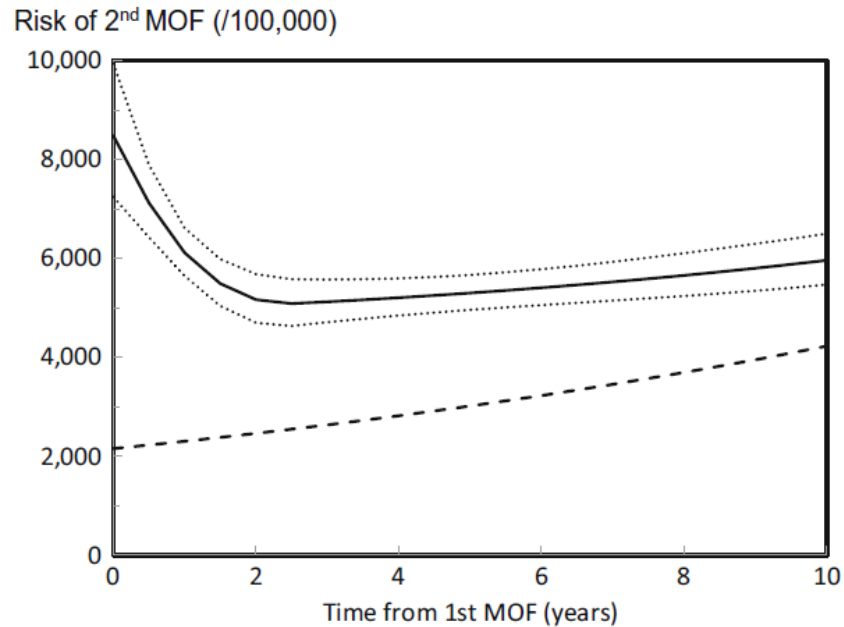


Fig. 1 Risk per 100,000 (95% CI) of a second MOF after a first MOF for a woman at the age of 75 years at her first fracture. Knots for the spline function are set at 0.5, 2.5 and 15 years of follow-up after the first fracture. The *dashed line* is the risk of first MOF in whole population ($n = 18,872$) for a woman 75 years at baseline

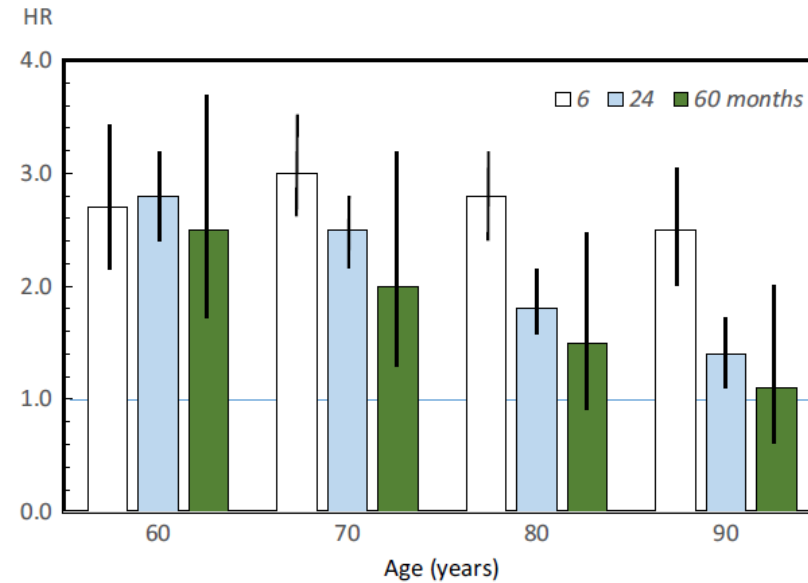


Fig. 2 The effect of age on the risk of subsequent major osteoporotic fracture at 6, 24 and 60 months following a first major osteoporotic fracture. The hazard ratio (HR with 95% confidence intervals) compares the risk against that of the general population when allowing the population to age with time (e.g. the 80-year-old individual after 60 months is compared with the population age 85 years)

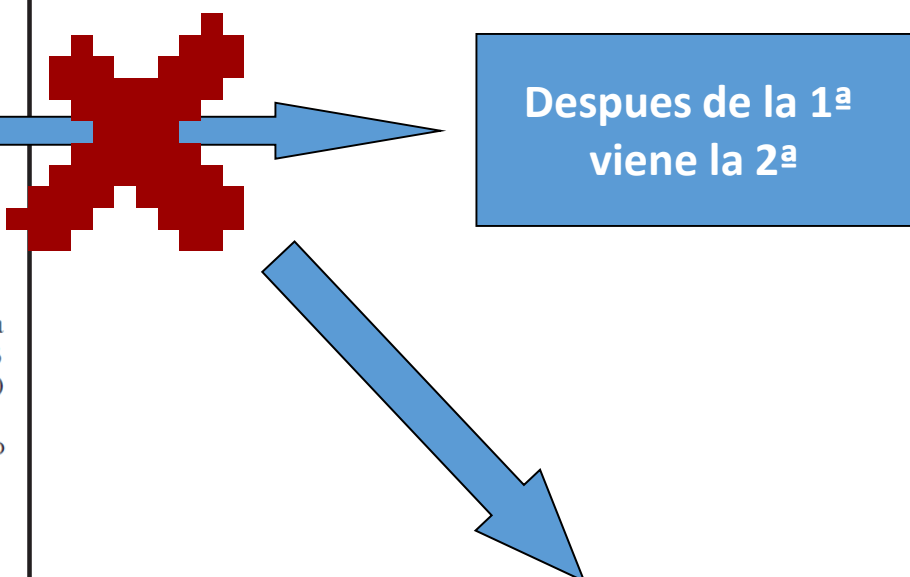
Imminent risk of fracture after fracture

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E. McCloskey⁵ · G Sigurdsson² · J. A. Kanis^{1,5}

Results Five thousand thirty-nine individuals sustained one or more MOFs, of whom 1919 experienced a second MOF. The risk of a second MOF after a first increased by 4% for each year of age (95% CI 1.02–1.06) and was 41% higher for women than men (95% CI 1.25–1.59). The risk of a second MOF was highest immediately after the first fracture and thereafter decreased with time though remained higher than the population risk throughout follow-up. For example, 1 year after the first MOF, the risk of a second fracture was 2.7 (2.4–3.0) fold higher than the population risk. After 10 years, this risk ratio was 1.4 (1.2–1.6). The effect was more marked with increasing age.

Conclusions The risk of MOF after a first MOF is increased over the whole follow-up, but the imminent risk is even higher. If the acute increment in risk in the few years following MOF is amenable to therapeutic intervention, then immediate short-term treatments may provide worthwhile clinical dividends in a very cost-effective manner, particularly in the elderly.

	Riesgo alto (R. relativo > 2)	Riesgo moderado (R. relativo 1 a 2)
Parcial o totalmente independientes de DMO	Edad Antecedentes personales de fracturas osteoporóticas. Antecedente familiar de fractura de fémur Bajo peso corporal (IMC < 20) Glucocorticoides (≥ 3 meses con ≥ 7,5 mg/día de prednisona) Recambio óseo elevado	Diabetes Tabaquismo Incapacidad para levantarse de una silla Ingesta elevada de alcohol (≥ 3 medidas al día) Hipertiroidismo
Dependientes de DMO	Hipogonadismo en el varón Hiperparatiroidismo primario Anorexia nerviosa Inmovilización prolongada Síndrome de malabsorción	Sexo femenino Menopausia precoz (< 45 años) Amenorrea primaria y secundaria Artritis reumatoide Déficit de Vitamina D Ingesta baja de Calcio (<500-850 mg/día)



Despues de la 1ª viene la 2ª

Unidad de fractura

Identification and management of patients at increased risk of osteoporotic fracture: outcomes of an ESCEO expert consensus meeting

J. A. Kanis^{1,2} · C. Cooper^{3,4} · R. Rizzoli⁵ · B. Abrahamsen⁶ · N. M. Al-Daghri⁷ · M. L. Brandi⁸ · J. Cannata-Andia⁹ · B. Cortet¹⁰ · H. P. Dimai¹¹ · S. Ferrari⁵ · P. Hadji¹² · N. C. Harvey³ · M. Kraenzlin¹³ · A. Kurth^{14,15} · E. McCloskey^{1,16} · S. Minisola¹⁷ · T. Thomas¹⁸ · J.-Y. Reginster¹⁹ · for the European Society for Clinical and Economic Aspects of Osteoporosis, Osteoarthritis and Musculoskeletal Diseases (ESCEO)

Management of osteoporosis in Europe: the treatment gap

Approximately 6.8 million men and women in Europe had sustained a prior hip or clinical vertebral fracture in 2010 [1]. It is well known that the risk of a subsequent fracture increases significantly following a first fracture [14–17], yet despite this and the advances in osteoporosis treatment, patients with a prior fracture are reported to have a low uptake of

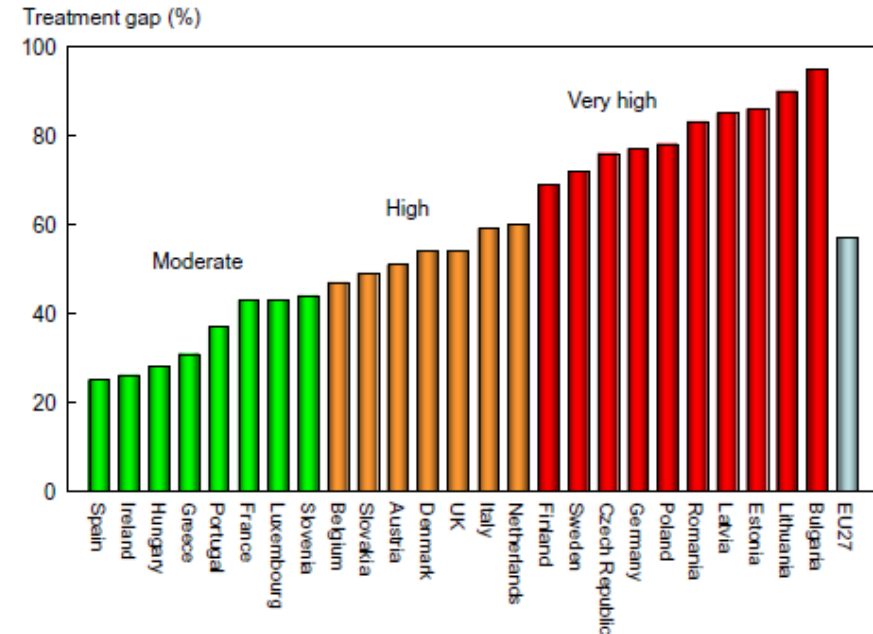


Fig. 4 Osteoporosis treatment gap in women across Europe in 2010 [1, 12]. EU27 27 member states of the European Union. Reprinted with kind permission from Springer Science and Business Media

The Osteoporosis Treatment Gap

John A Kanis,¹ Axel Svedbom,^{2,3} Nicholas Harvey,^{4,5} and Eugene V McCloskey¹

¹Centre for Metabolic Bone Diseases, University of Sheffield, Sheffield, UK

²OptumInsight, Stockholm, Sweden

³Unit of Dermatology and Venerology, Department of Medicine, Karolinska University, Stockholm, Sweden

⁴Medical Research Council (MRC) Lifecourse Epidemiology Unit, University of Southampton, Southampton, UK

⁵National Institute for Health Research (NIHR) Southampton Biomedical Research Centre, University of Southampton and University Hospital Southampton National Health Service (NHS) Foundation Trust, Southampton, UK

Despite a number of advances, particularly in the diagnosis of osteoporosis, the assessment of fracture risk, the development of interventions that reduce the risk of fractures, and the production of practice guidelines, many surveys indicate that a minority of men and women at high fracture risk actually receive treatment.^(8–14) **In patients who sustain a fragility fracture, fewer than 20% of individuals receive therapies to reduce the risk of future fracture within the year following the fracture.**^(11,12,15–18)

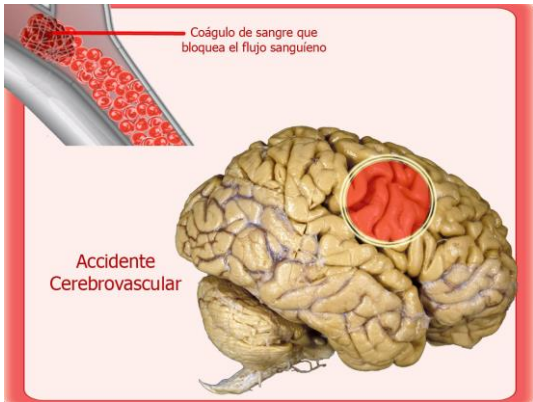
Prevención secundaria



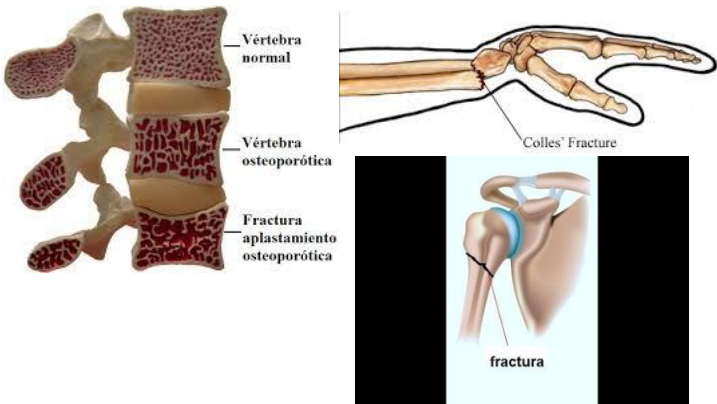
Figura 2.- Infarto coronario.



Antiagregación
B bloqueantes
IECAs



Antiagregación
Control de FRCV



CAPTURE DE FRACTURE

Capture the Fracture




- An initiative of the International Osteoporosis Foundation (IOF)
- Launched in 2012
- www.capturethefracture.org



www.capturethefracture.org



¿Qué es “Capture the fracture”?

Brought to you by  International Osteoporosis Foundation Share on  

 ABOUT SECONDARY PREVENTION BEST PRACTICE FRAMEWORK RESOURCES CONTACT

CLOSING THE CARE GAP

Worldwide, there is a large care gap that is leaving millions of fracture patients at serious risk of future fractures. Capture the Fracture hopes to close this gap and make secondary fracture prevention a reality.

John A Kanis
PRESIDENT, IOF



WHAT IS CAPTURE THE FRACTURE?

Capture the Fracture® is a global campaign to facilitate the implementation of coordinated, multi-disciplinary models of care for secondary fracture prevention. IOF believes this is the single most important thing that can be done to directly improve patient care and reduce spiraling fracture related healthcare costs worldwide.

<http://www.capture-the-fracture.org/>

¿Qué es “Capture the fracture”?

LA RESPUESTA A UN DÉFICIT ASISTENCIAL EN LA ATENCIÓN AL PACIENTE

A nivel mundial existe un gran déficit asistencial que deja a millones de pacientes con fractura en serio riesgo de sufrir nuevas fracturas. “Capture the Fracture” intenta cubrir este déficit haciendo de la prevención secundaria de fracturas una realidad.

John A Kanis

PRESIDENTE, IOF

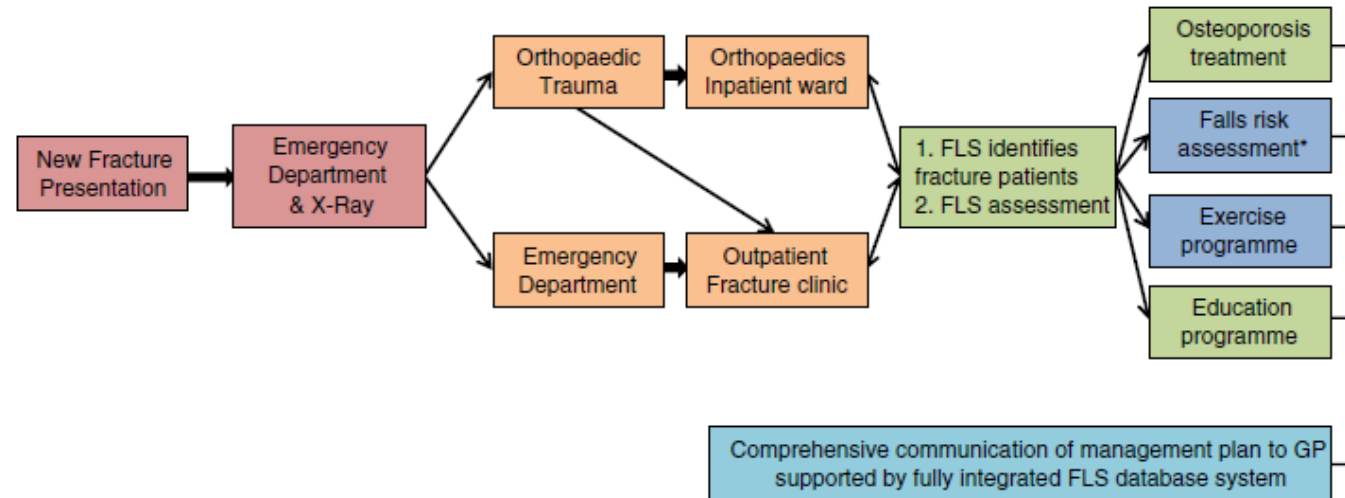
¿QUÉ ES “CAPTURE THE FRACTURE”?

Es una campaña global destinada a facilitar la aplicación de modelos de atención al paciente multidisciplinarios y coordinados para la prevención secundaria de fracturas. La IOF cree que es la principal acción que se puede llevar a cabo para mejorar directamente la atención del paciente y reducir los crecientes costes sanitarios relacionados con las fracturas en todo el mundo.

Capture the Fracture: a Best Practice Framework and global campaign to break the fragility fracture cycle

K. Åkesson • D. Marsh • P. J. Mitchell • A. R. McLellan •
J. Stenmark • D. D. Pierroz • C. Kyer • C. Cooper •
IOF Fracture Working Group

Fig. 3 The operational structure of a hospital-based Fracture Liaison Service [73] *Asterisk (*)* older patients, where appropriate, are identified and referred for falls assessment



Evidence of effectiveness of a fracture liaison service to reduce the re-fracture rate

A. Nakayama¹ · G. Major^{1,2} · E. Holliday^{2,3} · J. Attia^{2,3} · N. Bogduk^{1,2}

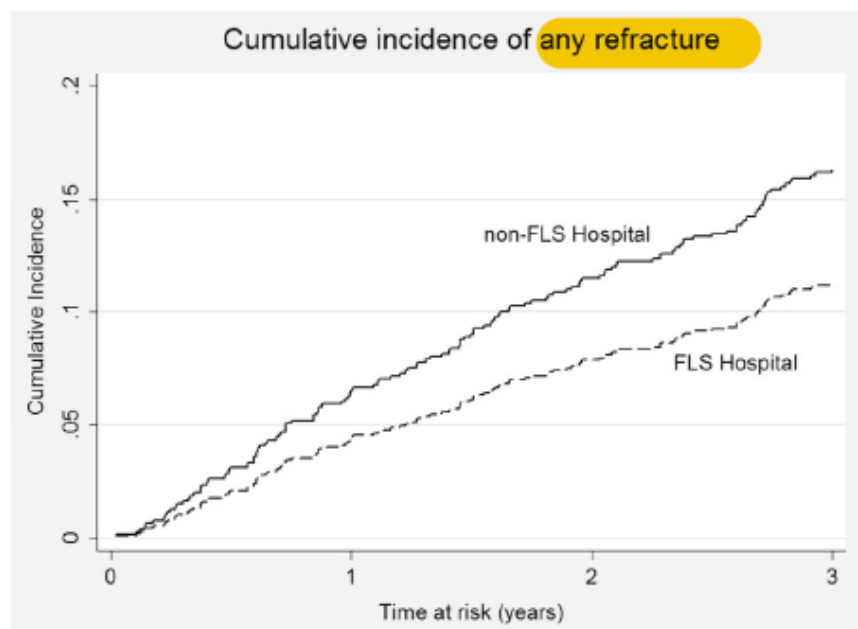


Fig. 2 Cumulative incidence of any re-fracture for the FLS and non-FLS hospitals, adjusted for age group and original fracture type (major/minor)

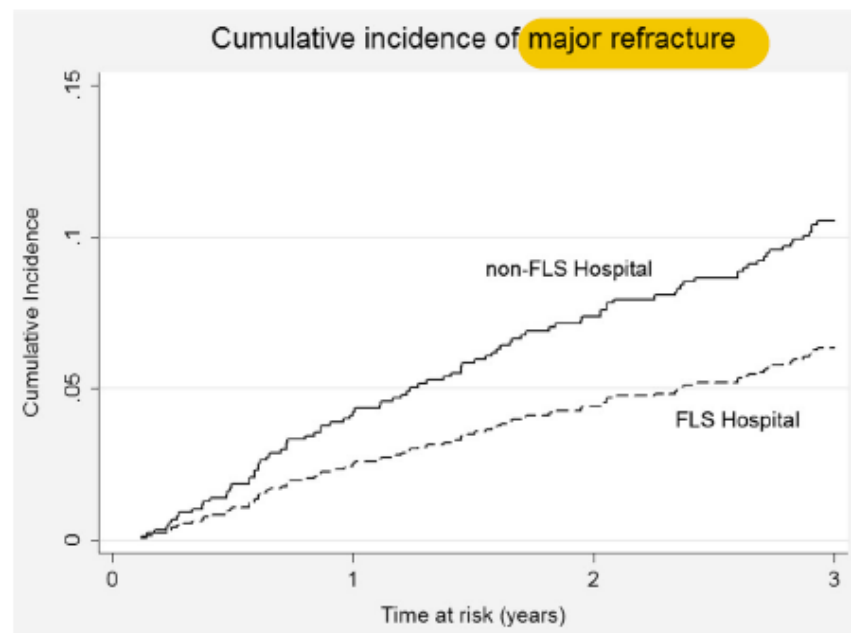


Fig. 3 Cumulative incidence of major re-fracture for the FLS and non-FLS hospitals, adjusted for age group, gender and original fracture type (major/minor)

Evidence of effectiveness of a fracture liaison service to reduce the re-fracture rate

A. Nakayama¹ • G. Major^{1,2} • E. Holliday^{2,3} • J. Attia^{2,3} • N. Bogduk^{1,2}

Conclusion

There was a ~30 % reduction in the risk of any re-fracture and a ~40 % reduction in major re-fracture in patients presenting to a hospital with a FLS, when compared to a similar hospital without a FLS. The magnitude of effect of a FLS equates to a NNT of 20, to prevent one re-fracture in 3 years.

El riesgo de refractura tras una fractura por fragilidad es muy alto



La fractura por fragilidad y las refracturas aumentan de forma considerable la morbimortalidad



FLS

Son Llàtzer
HOSPITAL

UNIDAD DE FRACTURA POR FRAGILIDAD

Modelo FLS (U.fractura por fragilidad)



Interconsultor médico (MI)



Servicio de Traumatología

Sesión clínica de casos
diaria
Fracturas por fragilidad con / sin ingreso



Identificación y captura de todos los pacientes con fractura por fragilidad de localización típica (radio distal , vertebral , humero proximal y cadera)

Modelo FLS (U.fractura por fragilidad)

*Identificación del paciente con fractura por fragilidad
AMBULATORIO / INGRESADO*



Solicitud de multipedido

- Analítica de estudio de metabolismo oseo
- Radiología de columna dorsal y lumbar
- Densitometria osea



Citación en consulta Unidad de Fractura Osteoporótica

LAB RAD REUC MIRC

→ Aceptar → Cancelar → Nuevo → Eliminar

411950 - VACHIANO POL, MARGARITA (Mujer, 65 años)

Consulta MIRC
Hora: 12:00:00

Perfiles

- + BIOQUÍMICA
- + CARDIOLOGÍA
- + DIGESTIVO
- + GENÉTICA
- + HEMATOLOGÍA
- + HEMOSTASIA
- + HORMONAS
- + INMUNOLOGÍA
- + MARCADORES TUMORALES
- + NEUMOLOGÍA

Creación/Modificación de pedidos

Unidad/Centro peticionario: MEDICINA INTERNA HOSPITALIZACION HOSPITAL SON LLATZER Persona Peticionaria: Lado Ferrer, Bartolome

Unidad/Centro receptor: LABORATORIO HOSPITAL SON LLATZER Persona Receptora:

Ámbito: C. Externas Transporte:

Prioridad: Normal Problema:

Motivo Solicitud:

fractura de radio distal por fragilidad

Condicionado:

F. Petición: 03/11/2017 23:36

F. Extracción: H Mñ 1M 3M

F. Prevista: Mñ 1M 3M 6M 12M

F. Limite: H Mñ 1M 3M

Notificar:

Documentos:

Imprimir hoja de muestras: Imprimir documentos de preparación:

Información Adicional

Diagnóstico:

Financiador:

SEGURIDAD SOCIAL

Garante:

SERVEI BALEAR DE LA SALUT (IB-SALUT)

Visita:

12017531 AMB CEX Fecha Inicio:03/11/2017 Fecha fin:03/11/2017 Servicio Ingreso:MIRC Servicio Alta:MIRC

Pruebas

Informar RX simple

- Vitamina D (25 OH-col)
- Hemograma
- Colesterol
- Creatinina
- Fosfatasa alcalina
- Fosfato
- GGT
- Glucosa (Sangre)
- GOT/AST
- GPT / ALT
- Hierro
- Iones (Na, K, Cl, Ca total)
- Magnesio
- Proteínas Totales (sangre)
- Proteinograma
- Triglicéridos
- Urato en sangre
- Urea
- Perfil Elemental de orina

Sitos de confianza

100%

411950 - VACHIANO POL, MARGARITA (Mujer, 65 años) Consulta MIRC
Hora: 12:00:00

- Perfiles
- RX SIMPLE
- MAMA
- RX CONVENCIONAL CON CONTR
- ESTUDIOS PEDIÁTRICOS
- ECOGRAFÍA
- TAC
- RESONANCIA MAGNETICA
- VASCULAR DIAGNÓSTICO
- INTERVENCIONISTA NO VASCULA
- INTERVENCIONISTA TERAPÉUTIC
- INTERCONSULTA RADIOLOGICA
- PROCESO DE IMAGEN

Creación/Modificación de pedidos

Unidad/Centro peticionario:	MEDICINA INTERNA HOSPITALIZACION	HOSPITAL SON LLATZER	Persona Peticionaria:	Llado Ferrer, Bartolome
Unidad/Centro receptor:	RADIOLOGIA	HOSPITAL SON LLATZER	Persona Receptora:	
Ámbito:	C. Externas		Transporte:	
Prioridad:	Normal		Problema:	
Motivo Solicitud:	fractura por fragilidad			
Condicionado:				
F. Petición:	03/11/2017 23:36	F. Extracción:		H Mñ 1M 3M
F. Prevista:		F. Limite:		H Mñ 1M 3M
Notificar:	<input type="checkbox"/>	Documentos:		Imprimir hoja de muestras: <input type="checkbox"/>
				Imprimir documentos de preparación: <input type="checkbox"/>

Información Adicional

Diagnóstico:	
Financiador:	SEGURIDAD SOCIAL
Garante:	SERVEI BALEAR DE LA SALUT (IB-SALUT)
Visita:	12017531 AMB CEX Fecha Inicio:03/11/2017 Fecha fin:03/11/2017 Servicio Ingreso:MIRC Servicio Alta:MIRC

Pruebas		Informar RX simple
	RX COLUMNA DORSAL A-P Y LAT	<input type="checkbox"/>
	RX COLUMNA LUMBOSACRA AP Y LAT	<input type="checkbox"/>

411950 - VACHIANO POL, MARGARITA (Mujer, 65 años) Consulta MIRC
Hora: 12:00:00

- Perfiles
- INTERCONSULTA
 - REUMATOLOGÍA CEX

Creación/Modificación de pedidos

Unidad/Centro peticionario: MEDICINA INTERNA HOSPITALIZACION HOSPITAL SON LLATZER Persona Peticionaria: Llado Ferrer, Bartolome

Unidad/Centro receptor: REUMATOLOGIA CONSULTA EXTERNA HOSPITAL SON LLATZER Persona Receptora:

Ámbito: C. Externas Transporte:

Prioridad: Normal Problema:

Motivo Solicitud: Estado: Previo

fractura por fragilidad

Condicionado:

F. Petición: 03/11/2017 23:36 F. Extracción: H Mñ 1M 3M

F. Prevista: Mñ 1M 3M 6M 12M F. Limite: H Mñ 1M 3M

Notificar: Documentos: Imprimir hoja de muestras:

Imprimir documentos de preparación:

Informacion Adicional

Diagnóstico:

Financiador: SEGURIDAD SOCIAL

Garante: SERVEI BALEAR DE LA SALUT (IB-SALUT)

Visita: 12017531 AMB CEX Fecha Inicio:03/11/2017 Fecha fin:03/11/2017 Servicio Ingreso:MIRC Servicio Alta:MIRC

Pruebas Informar RX simple

Pruebas
Densitometría Ósea

Pedidos - Windows Internet Explorer
http://svw2as01.fhsonllatzer.int:7777/hphis/medlink/pedido/multipedido.jsp?codpedidomultiple=-31468&numerohc=411950&problema=&episodio=&iup&codpaciente=&conexion=FHSSL&tratamiento=&proceso=&medp=&accionMEDP=&urldest=&perfil=&epis...

LAB RAD REUC MIRC →Aceptar →Cancelar →Nuevo →Eliminar

411950 - VACHIANO POL, MARGARITA (Mujer, 66 años)

Perfiles Creación/Modificación de pedidos

Unidad/Centro peticionario: MEDICINA INTERNA HOSPITALIZACION HOSPITAL SON LLATZER Persona Peticionaria: Llado Ferrer, Bartolome

Unidad/Centro receptor: MEDICINA INTERNA CONSULTA EXTERNA HOSPITAL SON LLATZER Persona Receptora:

Ámbito: C. Externas Transporte:

Prioridad: Normal Problema:

Motivo Solicitud: Estado: Previo

Condicionado:

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F. Prevista: F. Limite: H Mñ 1M 3M

Notificar: Documentos: Imprimir hoja de muestras:

Imprimir documentos de preparación:

Información Adicional

Diagnóstico:

Financiador: SEGURIDAD SOCIAL

Garante: SERVEI BALEAR DE LA SALUT (IB-SALUT)

Visita:

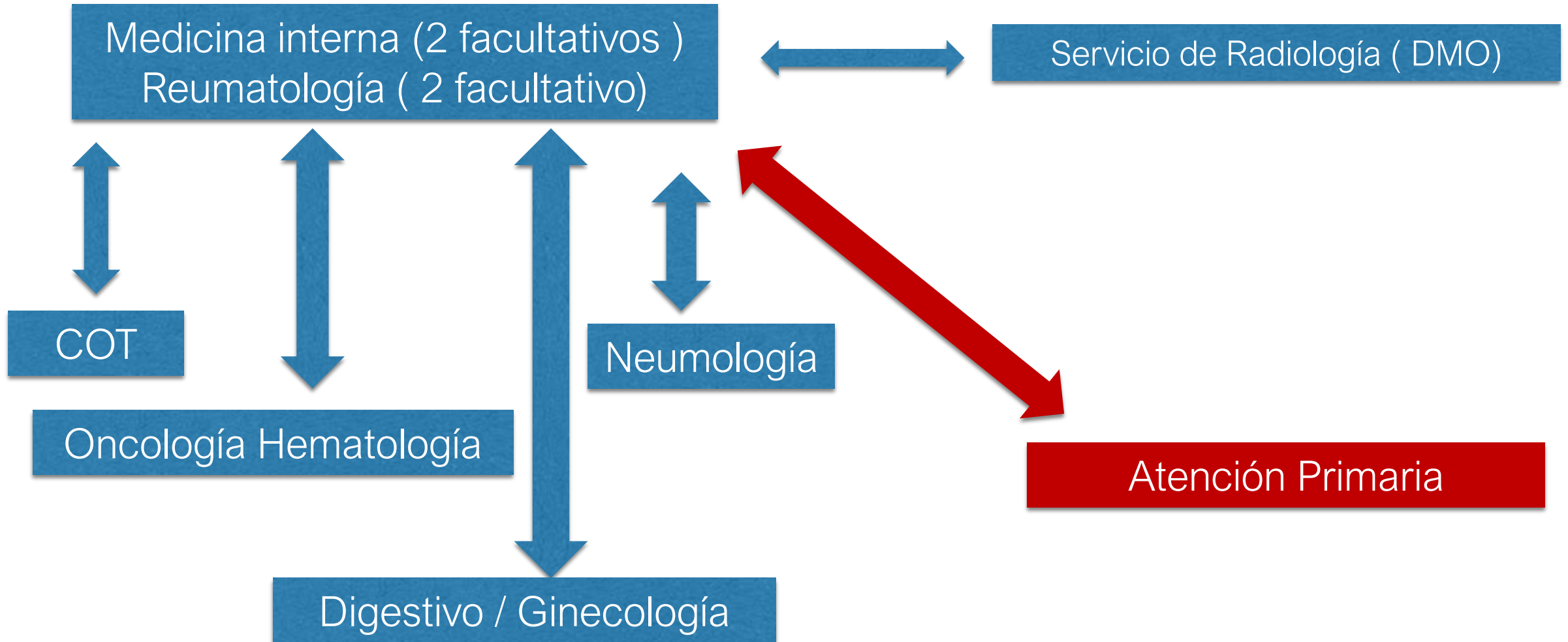
Pruebas

Unidad de Fractura por Fragilidad Informar RX simple

Listo Sitios de confianza 100%

Inicio HP Doctor Facultativo ... osteoporosis Microsoft PowerPoint - ... Gmail - RESOLUCIÓN s... http://seiom.org/wp... HP-HCIS // Tomeu Llad... Pedidos - Windows I... 23:40 jueves

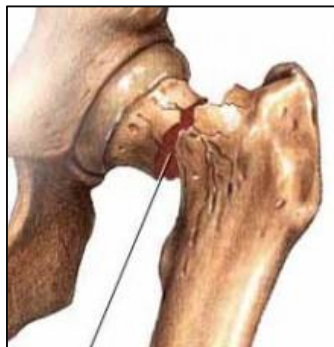
Modelo FLS (U.fractura por fragilidad)



Funcionamiento asistencial

Asistencia intrahospitalaria

- Ingreso (tratamiento quirurgico)
- Estudio analítico y radiológico
- Tratamiento médico al alta con seguimiento ambulatorio en la unidad de fractura



Asistencia extrahospitalaria

- “captura de la fractura “ previa
- Estudio en consulta ambulatoria de la Unidad de fractura
- Tratamiento médico iniciado en CCEE



PROTOCOLO DE TRATAMIENTO

Son Llàtzer
HOSPITAL

AACE/ACE 2016 POSTMENOPAUSAL OSTEOPOROSIS TREATMENT ALGORITHM

Lumbar spine or femoral neck or total hip T-score of ≤ -2.5 , a history of fragility fracture, or high FRAX[®] fracture probability*

Evaluate for causes of secondary osteoporosis

Correct calcium/vitamin D deficiency and address causes of secondary osteoporosis

- Recommend pharmacologic therapy
- Education on lifestyle measures, fall prevention, benefits and risks of medications

No prior fragility fractures or moderate fracture risk**

- Alendronate, denosumab, risedronate, zoledronic acid***
- **Alternate therapy:** Ibandronate, raloxifene

Reassess at least yearly for response to therapy and fracture risk

Increasing or stable BMD and no fractures

Consider a drug holiday after 5 years of oral and 3 years of IV bisphosphonate therapy

Resume therapy when a fracture occurs, BMD declines beyond LSC, BTM's rise to pretreatment values or patient meets initial

Progression of bone loss or recurrent fractures

- Assess compliance
- Re-evaluate for causes of secondary osteoporosis and factors leading to suboptimal response to therapy

- Switch to injectable antiresorptive if on oral agent
- Switch to teriparatide if on injectable antiresorptive or at

Prior fragility fractures or indicators of higher fracture risk**

- Denosumab, teriparatide, zoledronic acid***
- **Alternate therapy:** Alendronate, risedronate

Reassess at least yearly for response to therapy and fracture risk

Denosumab

Continue therapy or consider adding teriparatide if progression of bone loss or recurrent fractures

Teriparatide for up to 2 years

Sequential therapy with oral or injectable antiresorptive agent

Zoledronic acid

- If stable, continue therapy for 6 years****
- If progression of bone loss or recurrent fractures, consider switching to teriparatide

* 10 year major osteoporotic fracture risk $\geq 20\%$ or hip fracture risk $\geq 3\%$. Non-US countries/regions may have different thresholds.

** Indicators of higher fracture risk in patients with low bone density would include advanced age, frailty, glucocorticoids, very low T scores, or increased fall risk.

*** Medications are listed alphabetically.

**** On the basis of the 2016 American College of Endocrinology (ACE) and American Association of Clinical Endocrinologists (AACE) guidelines.



. Pacientes en prevención secundaria de fractura por fragilidad

Primera fractura por fragilidad en :

- Mujeres postmenopáusicas con / sin densitometría
- Varones con factores de riesgo
- Se iniciará tratamiento con :
 - . Calcio (alimentación vs suplemento) y VITD dosis ajustada según niveles previos del paciente
 - . Antiresortivo :Denosumab SC cada 6 meses como primera opción , bifosfonatos como alternativa

Segunda fractura por fragilidad *DMO con T score -2,0 / -3,5* en:

- Mujeres postmenopáusicas
- Varones > 50 a con factores de riesgo
- Se iniciará tratamiento con :
 - . Calcio (alimentación vs suplemento) y VITD dosis ajustada según niveles previos del paciente
 - . Antiresortivo :Denosumab SC cada 6 meses como primera opción , bifosfonatos como alternativa

Segunda fractura fragilidad y DMO con *T score* -3,5 o > en :

- Mujeres postmenopáusicas
- Varones con factores de riesgo
- Se iniciará tratamiento con :
 - . Calcio (alimentación vs suplemento) y VITD dosis ajustada según niveles previos del paciente
 - . Osteoformador : Teriparatida 20 mcrg SC / dia 2 años como primera opción , alternativa : denosumab o bifosfonatos .

Tras la identificación , estudio y tratamiento



Adherencia



Beneficio clínico

SHORT SCIENTIFIC COMMUNICATION



Adherence to bisphosphonates in the general population: a study in patients referred to a primary care service

Pietro Donato¹ • Jessica Pepe¹ • Luciano Colangelo¹ • Vittoria Danese¹ • Veronica Cecchetti¹ • Salvatore Minisola¹ • Cristiana Cipriani¹

Received: 29 November 2018 / Accepted: 8 March 2019

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Abstract

Purpose The aim of the study was to evaluate the adherence to treatment with bisphosphonates in women with postmenopausal osteoporosis referred to a primary care clinic.

Methods A total of 7257 outpatients were referred to the primary care service where the study was conducted. We retrieved data of postmenopausal women to which bisphosphonates have been prescribed in the period January 1, 2000–December 31, 2014, and analyzed the group of patients who had discontinued the drug.

Results The total number of women treated with bisphosphonates was 285 (mean age 72 ± 9.8 years). At the time the data were retrieved, 157 (55% of the total) had discontinued therapy. Among them, 119 (41.7%) agreed to participate in the study. They reported the following reasons for treatment discontinuation: withdrawal by another physician (40%), lack of motivation (20%), absence of BMD improvement (14%), uncomfortable way of drug administration (11%), side effects (6%), fear of side effects (1.6%), high number of concomitant medications (0.8%), and others (6.6%). Sixty patients (50.4%) discontinued therapy within 2 years, 27 patients (23%) > 2 and \leq 5 years and 32 (27%) after 5 years.

Conclusions Our study demonstrates that more than half of women with postmenopausal osteoporosis referred to a primary care service discontinued bisphosphonates before the clinical effect can be seen and mostly because of advice by physicians not initially prescribing the drug. There is an inappropriate management of bisphosphonate therapy in terms of therapeutic efficacy and strategies aimed at ameliorating clinical management of osteoporosis patients are warranted.



ORIGINAL ARTICLE

Effect of health literacy on adherence to osteoporosis treatment among patients with distal radius fracture

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Abstract

Summary Patients with inadequate health literacy, those with medical comorbidities, or those with a previous history of adverse drug events have a higher likelihood of non-adherence to osteoporosis treatment after sustaining a distal radius fracture.

Introduction Patients with a distal radial fracture (DRF) have a higher risk of subsequent fractures, which provides an important opportunity to begin treatment for osteoporosis. This study assessed the effect that health literacy of patients suffering from a DRF has on the subsequent adherence to osteoporosis treatment.

Methods A total of 116 patients (female, over 50 years of age) presenting a DRF caused by low-energy trauma were enrolled. Their health literacy was measured using the Newest Vital Sign (NVS). Alendronate (70 mg, orally, once weekly) was prescribed to all patients for 1 year, and adherence was defined as taking at least 80% of the tablets for 12 months and returning for the visit on month 12. Multivariable analyses were conducted to determine whether the patients' clinical, demographic, and health literacy factors influenced their adherence to osteoporosis treatment.

Results About half (52%) of the participants who sustained a DRF exhibited an inadequate health literacy, and the rate of non-adherence to osteoporosis treatment was 38%. The rate of non-adherence for patients with inadequate literacy was significantly higher than for those with appropriate literacy (47 vs. 29%, $p = 0.04$). The results of the regression analysis indicate that limited health literacy, the presence of comorbidities, and prior history of adverse drug events are associated with a higher likelihood of non-adherence to osteoporosis treatment after sustaining a DRF.

Conclusions Patients with inadequate health literacy, adverse drug events, or medical comorbidities had higher rates of non-adherence with alendronate treatment after sustaining a DRF. Further research is needed to show whether improvements in patient comprehension via informational intervention in patients with a DRF will improve adherence to osteoporosis treatment.

Keywords Osteoporosis treatment · Bisphosphonates · Health literacy · Adherence · Distal radius fracture

Table 3 Univariate and multivariable regression analyses for independent predictors of adherence to osteoporosis treatment

Variables	Univariate analysis			Multivariable analysis		
	OR	95% CI	<i>p</i>	OR	95% CI	<i>p</i>
Age	0.90	0.87–0.96	0.04	0.92	0.87–1.02	0.09
Comorbidities	1.39	1.14–1.74	0.02	1.35	1.26–1.92	0.03
Health literacy	1.62	1.10–2.32	0.01	1.82	1.38–2.32	0.01
Type of fracture	1.19	0.94–1.49	0.32			
Type of treatment	1.21	0.97–1.59	0.19			
Drug-related A/E	0.66	0.48–0.95	0.03	0.64	0.45–0.91	0.02
Final DASH score	0.94	0.84–1.11	0.15			

OR odds ratio, *CI* confidence interval, *DASH* Disability of the Arm, Shoulder, and Hand score, *A/E* adverse events

Bases de la adherencia en el tratamiento de la osteoporosis y fracturas osteoporóticas

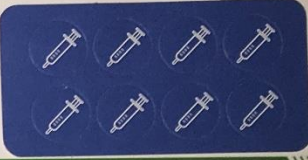
- Relación médico - paciente (hacer copartícipe al paciente en su proceso)
- Unidades multidisciplinarias (FLS)
- Fármacos con potencial de adherencia (denosumab / semestral)
- Educación sanitaria al paciente
- Programas de asistencia al paciente de cara al tratamiento

Denosumab SC / 6 meses Adherencia

CALENDARIO DE SU TRATAMIENTO

Su médico le ha recetado un tratamiento semestral para mantener sus huesos fuertes y evitar fracturas. Es importante que recuerde que el éxito de su tratamiento va a depender de la correcta administración de la dosis cada 6 meses, es decir 2 veces al año. Este esquema le ayudará a planificar el seguimiento recordando las fechas de las siguientes dosis y evaluando su evolución a través de las densitometrías.

Coloque las pegatinas en el espacio reservado después de cada dosis.
No olvide las siguientes administraciones



6 meses 6 meses 6 meses 6 meses 6 meses 6 meses 6 meses 6 meses

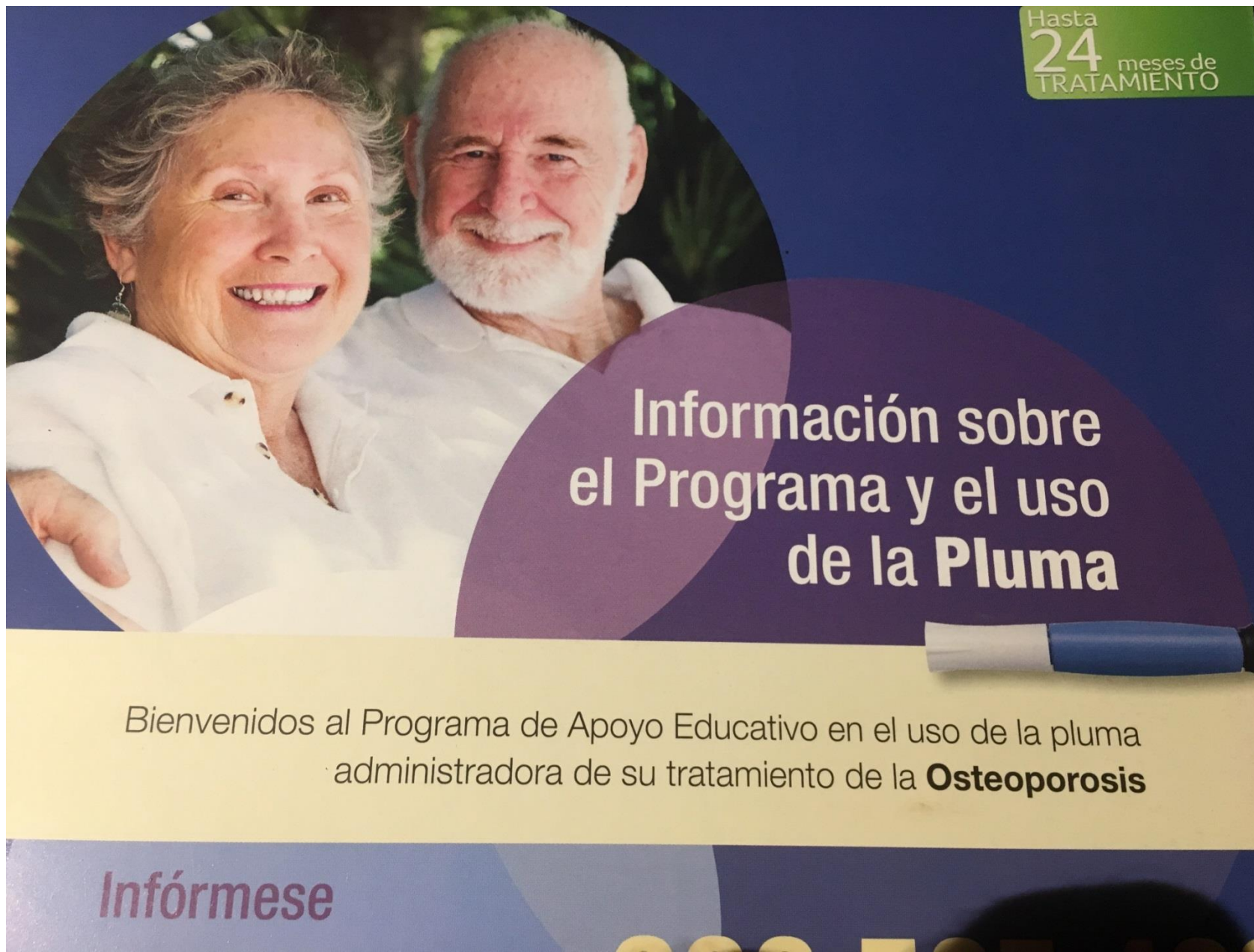
Hoy Fecha / /	Dosis # Fecha / /	Dosis # Fecha / /	Dosis # Fecha / /	Dosis # Fecha / /	Dosis # Fecha / /	Dosis # Fecha / /	Dosis # Fecha / /
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PLANIFICACIÓN Y SEGUIMIENTO DE SUS DENSITOMETRÍAS

Fecha / /	Puntuación T g/cm ²	Fecha / /	Puntuación T g/cm ²	Fecha / /	Puntuación T g/cm ²
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ⓘ Su médico le ha prescrito un tratamiento para su osteoporosis, una patología crónica. Es importante para la salud de sus huesos que no abandone el tratamiento sin consultarlo previamente con su médico

Coparticipación del paciente



Hasta
24 meses de
TRATAMIENTO

Información sobre
el Programa y el uso
de la **Pluma**

Bienvenidos al Programa de Apoyo Educativo en el uso de la pluma
administradora de su tratamiento de la **Osteoporosis**

Infórmese

Conclusiones

- La osteoporosis y su evento clínico (la fractura por fragilidad) son aun a dia de hoy patologías infradiagnosticadas e infratratadas
- Se precisa de un esfuerzo asistencia al varios niveles para abordar el problema
- Las unidades de fractura por fragilidad (FLS) son modelos asistenciales costo – efectivos y basados en guias de practica clínica
- Las FLS son herramientas útiles de cara a la adherencia al tratamiento

CAPTURE *the* FRACTURE

RECOGNIZED FRACTURE LIAISON SERVICE



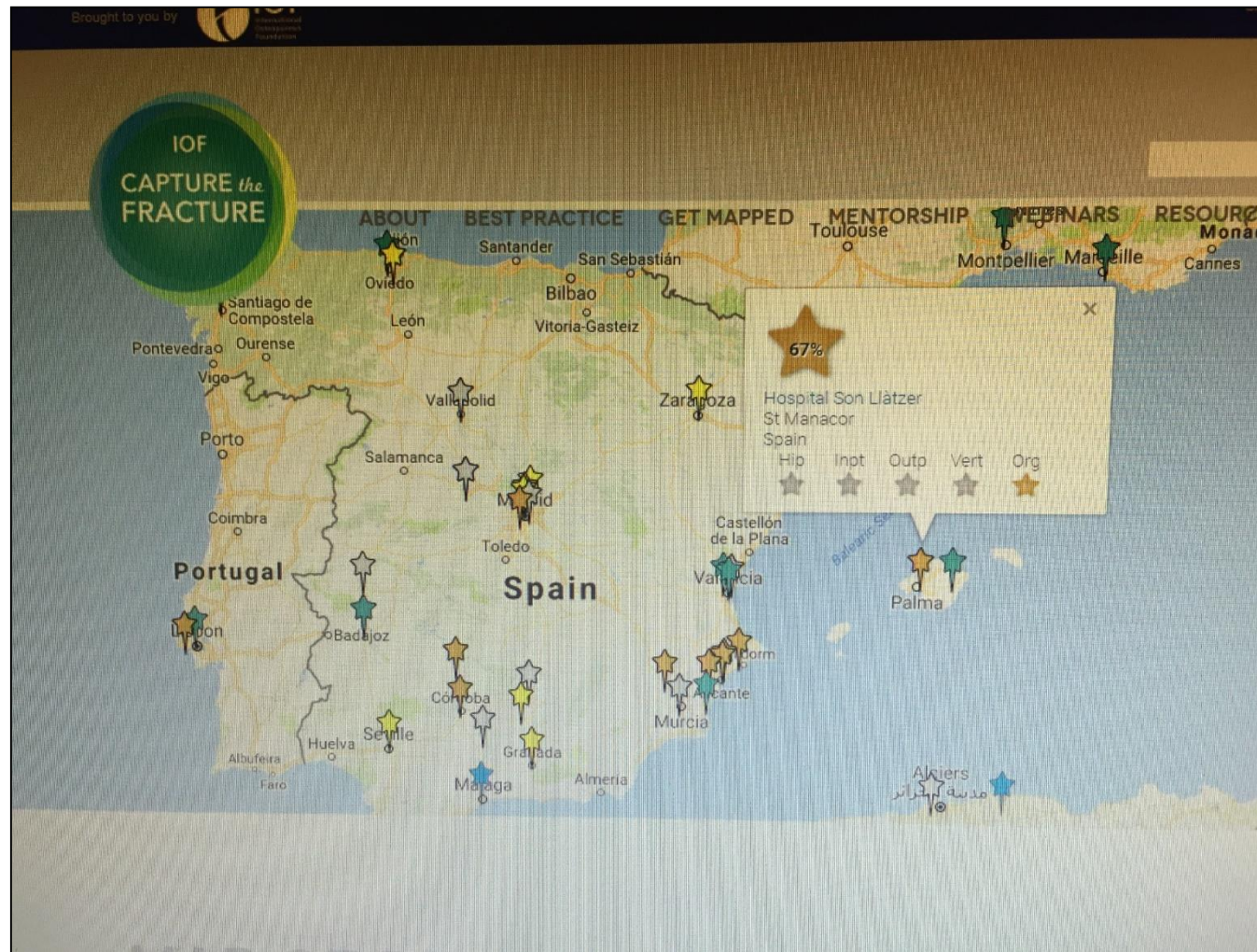
Awarded to:

Unidad de Fractura, Hospital Son Llàtzer
Palma, Spain

for meeting the Bronze Level criteria of the Capture the Fracture programme.

CYRUS COOPER
President

PHILIPPE HALBOUT
CEO



GRACIAS POR SU ATENCION



UNIDAD DE FRACTURA POR FRAGILIDAD

Son Llàtzer
HOSPITAL

