



La frattura di bacino: un problema clinico irrisolto. Il punto di vista del geriatra

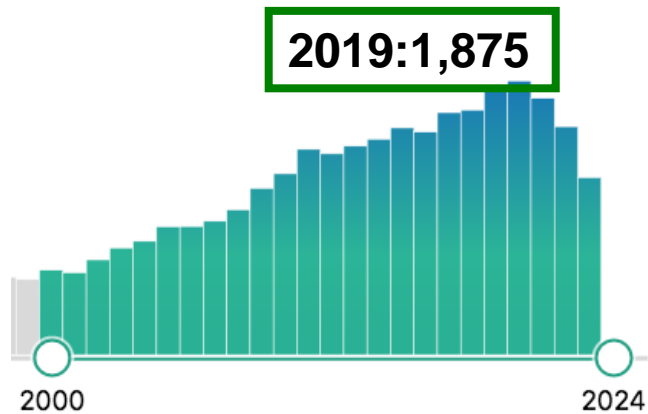
Alessandro Morandi
Cure Intermedie e Riabilitazione
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Outline

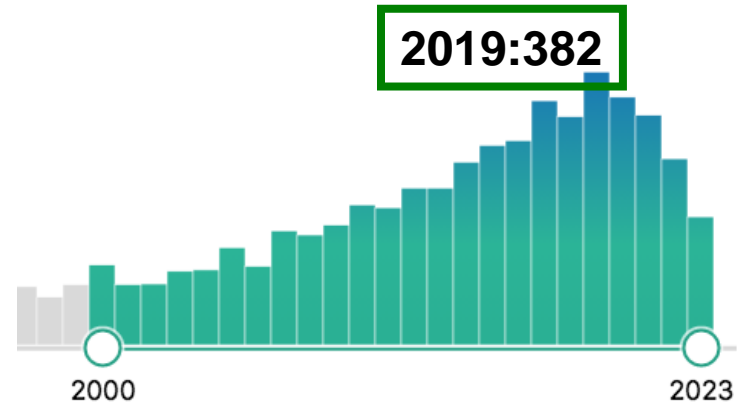
- **Epidemiologia della frattura di bacino**
- **Quali approcci e limiti al trattamento riabilitativo?**

Epidemiologia a confronto: pubblicazioni in PubMed

Hip fracture and elderly



Pelvic fracture and elderly



Epidemiologia a confronto

Frattura di femore

- **Incidence (2011-2018)**
227/100,000 per year
- **30% all patients die within 1 year**
- **50%, among survivors, does not regain the pre-fracture functional status**

Frattura di bacino

The **overall incidence** of a pelvic ring injury is estimated at **20-37/100,000 per year**, the incidence rises to **92/100,000 per year** for the population aged over 65 years

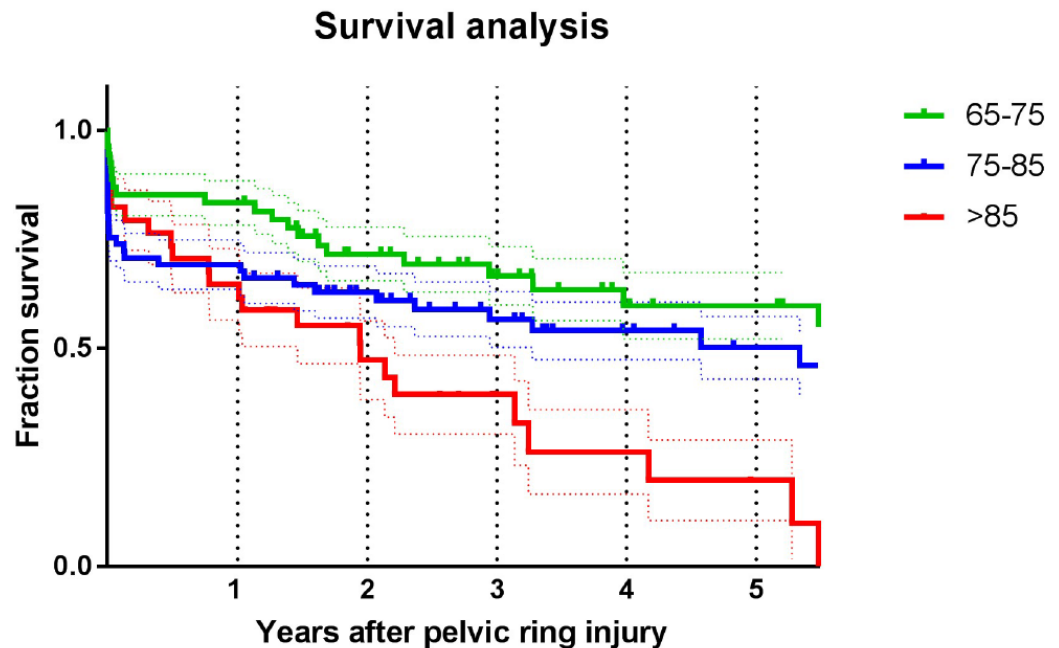
Chor-Wing Sing J Bone Mineral Research 2023
Maggi S et al, Osteoporos Int 2021
Morandi A et al. Geriatric Gerontolog Int 2019

Kannus et al Osteoporos Int 2000

Pelvic ring injury in the elderly: Fragile patients with substantial mortality rates and long-term physical impairment

Hester Banierink^{1*}, Kaj ten Duis¹, Rob de Vries¹, Klaus Wendt^{1,2}, Erik Heineman³, Inge Reininga^{1,2}, Frank IJpma¹

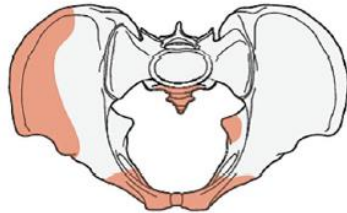
- A cross-sectional study was performed including 153 elderly patients (≥65 years) admitted for a pelvic ring injury between 2007-2016
- 31% of the patients in this study was discharged to a nursing home



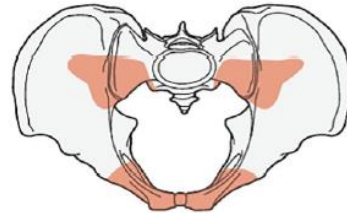
Classificazione delle fratture di bacino

Types:

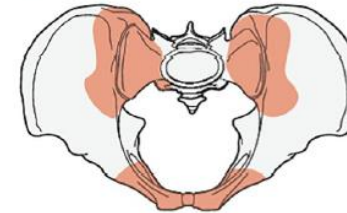
Pelvis, pelvic ring, **intact posterior arch**
61A



Pelvis, pelvic ring, **incomplete disruption of posterior arch**
61B



Pelvis, pelvic ring, **complete disruption of posterior arch**
61C



Quali i predittori della mortalità?

Table 3. Multivariate cox regression analysis on mortality.

	N	HR	95% CI		p-value*
Final multivariate model					
→ Age at time of injury (years)	153	1.07	1.03	1.10	<0.001
Fracture type**	153				
→ Type B		0.75	0.39	1.45	0.39
→ Type C		4.70	1.54	14.40	0.007
→ ISS	153	1.06	1.04	1.09	<0.001
CCI	153	1.13	0.99	1.28	0.07

Quali gli outcome rispetto alla popolazione generale?

Table 4. Outcomes on the SMFA-NL and EQ-5D.

	Study population	General Dutch population	P-value*
SMFA			
Function Index			
Mean ± Std.	67.4 ± 29.4	87.1 ± 13.5	0.001
Bother Index			
Mean ± Std.	65.2 ± 26.7	84.7 ± 18.7	<0.001
Lower extremity			
Mean ± Std.	66.5 ± 31.2	86.4 ± 14.8	0.001
ADL			
Mean ± Std.	60.4 ± 32.0	86.0 ± 17.3	<0.001
Emotion			
Mean ± Std.	68.2 ± 20.1	80.2 ± 17.1	<0.001
EQ5D			
Mean ± Std.	0.72 ± 0.277	0.87 ± 0.170	<0.001



Funzione, autonomia BADL, forza, stato d'animo, qualità di vita

Outline

- Epidemiologia della frattura di bacino
- **Quali approcci e limiti al trattamento riabilitativo?**

Rehabilitative management of pelvic fractures: a literature-based update

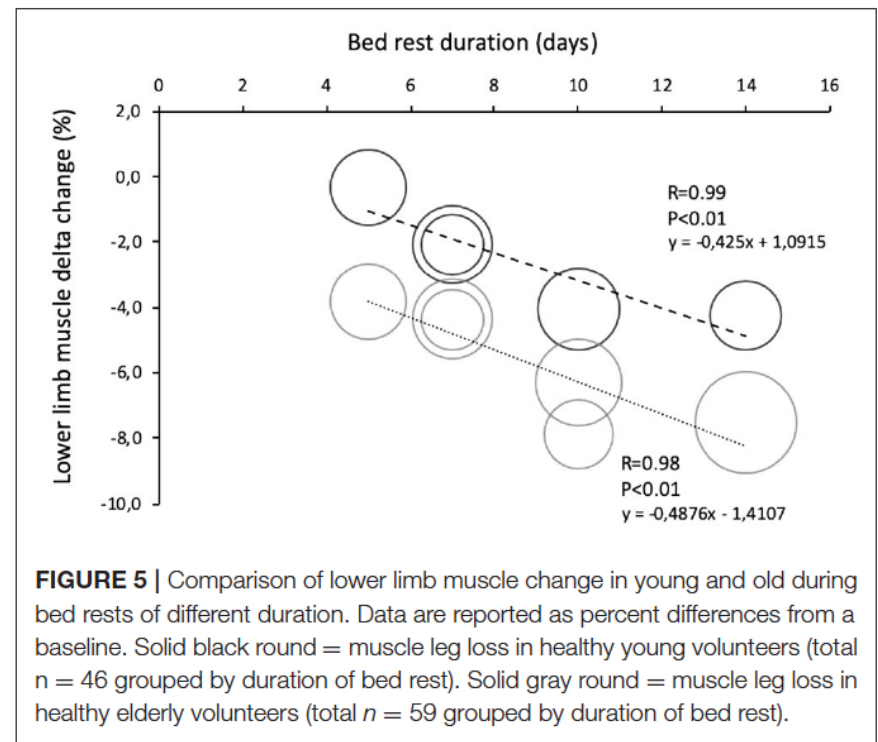
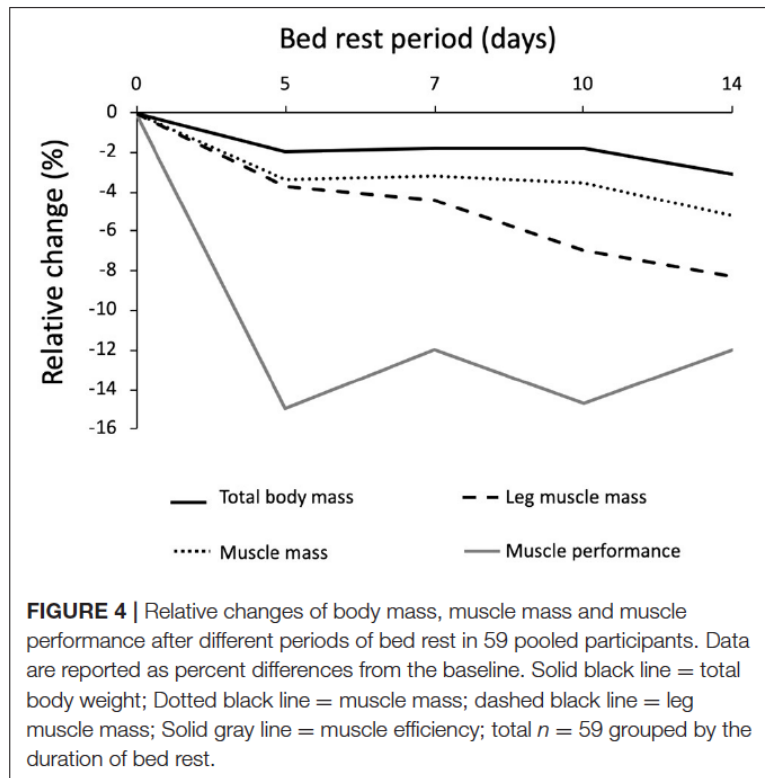
Francesco Piccione (1), Maria Chiara Maccarone (2), Anna Maria Cortese (3), Guido Rocca (4), Umberto Sansubrina (1), Giovanni Piran (2), Stefano Masiero (1,2)

The most acceptable indication of the postoperative management of PF consists of a non-weight bearing period of 6 to 12 weeks, in which patients can start an early passive mobilization protocol after 15 days

Even if there are no high-quality evidence for rehabilitative interventions after PF in terms of duration and modality of therapy, rehabilitation setting, care pathways, and long-term functional outcomes, it is strongly recommended an early multidisciplinary intervention to improve recovery from PF.

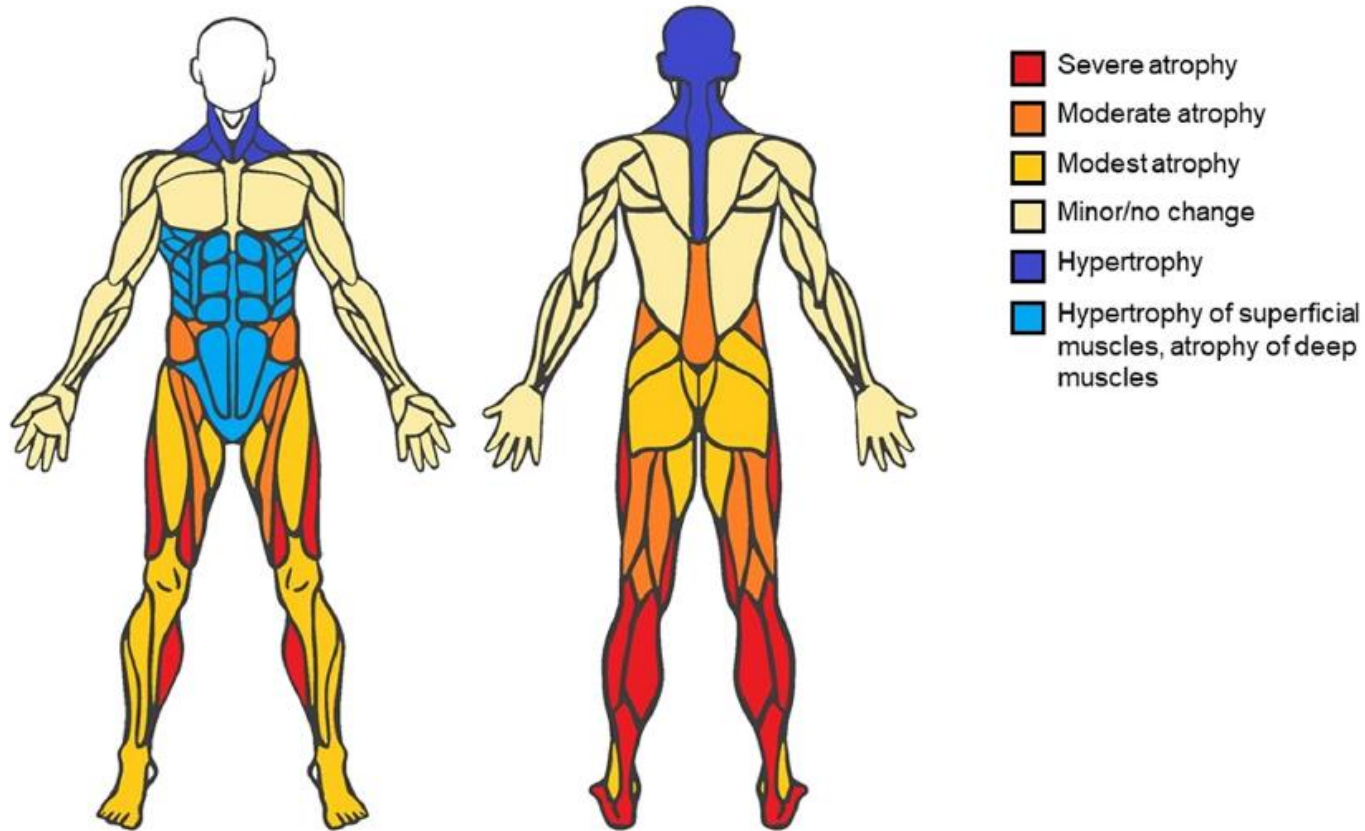
The Aging Muscle in Experimental Bed Rest: A Systematic Review and Meta-Analysis

Filippo Giorgio Di Girolamo^{1,2*}, Nicola Fiotti¹, Zoran Milanović^{3,4,5}, Roberta Situlin¹, Filippo Mearelli¹, Pierandrea Vinci¹, Boštjan Šimunič⁴, Rado Pišot⁴, Marco Narici⁶ and Gianni Biolo¹



Bed rest and accelerated aging in relation to the musculoskeletal and cardiovascular systems and frailty biomarkers: A review

D.S. Kehler*, O. Theou¹, K. Rockwood¹





Orthogeriatric co-management for the care of older subjects with hip fracture: recommendations from an Italian intersociety consensus

Antonio De Vincentis¹ · Astrid Ursula Behr² · Giuseppe Bellelli^{3,4} · Marco Bravi⁵ · Anna Castaldo⁶ · Lucia Galluzzo⁷ · Giovanni Iolascon⁸ · Stefania Maggi⁹ · Emilio Martini¹⁰ · Alberto Momoli¹¹ · Graziano Onder⁷ · Marco Paoletta⁸ · Luca Pietrogrande¹² · Mauro Roselli¹³ · Mauro Ruggeri¹⁴ · Carmelinda Ruggiero¹⁵ · Fabio Santacaterina⁵ · Luigi Tritapepe¹⁶ · Amedeo Zurlo¹⁷ · Raffaele Antonelli Incalzi¹ · on behalf of Società Italiana Geriatria e Gerontologia (SIGG), · Associazione Italiana di Psicogeriatria (AIP), · Società Italiana di Geriatria Ospedale e Territorio (SIGOT), · Società Italiana di Medicina Generale (SIMG), · Società Italiana di Anestesia Analgesia Rianimazione e Terapia Intensiva (SIAARTI), · Società Italiana di Ortopedia e Traumatologia (SIOT), · Fragility Fracture Network-Italia (FFN-I), · Società Italiana di Medicina Fisica e Riabilitativa (SIMFER), · Società Italiana di Fisioterapia (SIF), · Consiglio Nazionale delle Ricerche (CNR), · Associazione Italiana di Fisioterapia (AIFI), · Istituto Superiore Sanità (ISS)

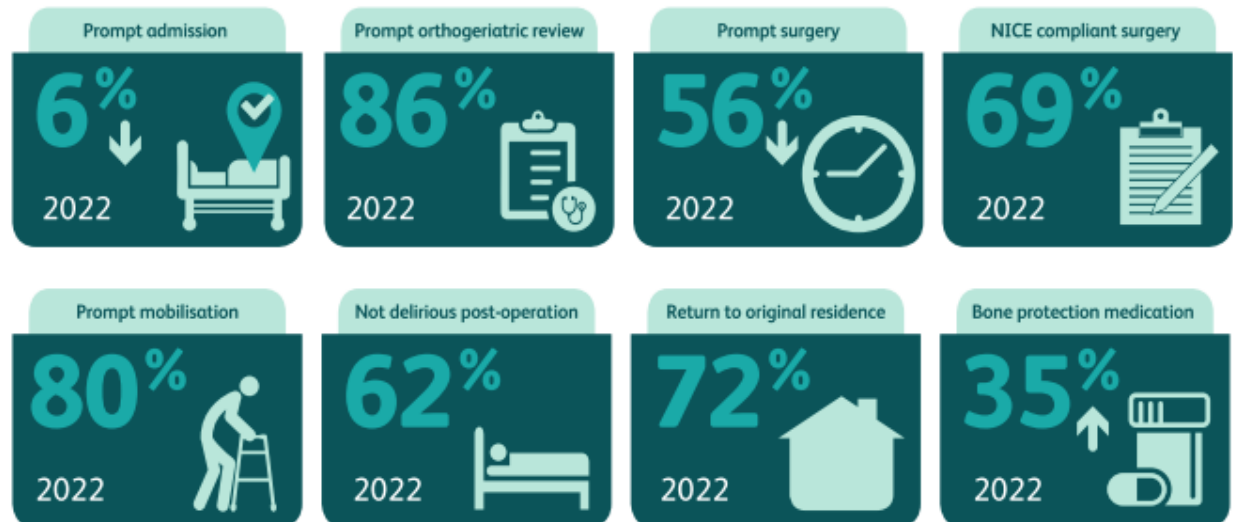
To reduce hospital stay and long-term mortality, **we recommend early (i.e., within 12–24 h of surgery) mobilization, postural changes, standing with weight bearing.**

15 years of quality improvement

The 2023 National Hip Fracture Database report on 2022

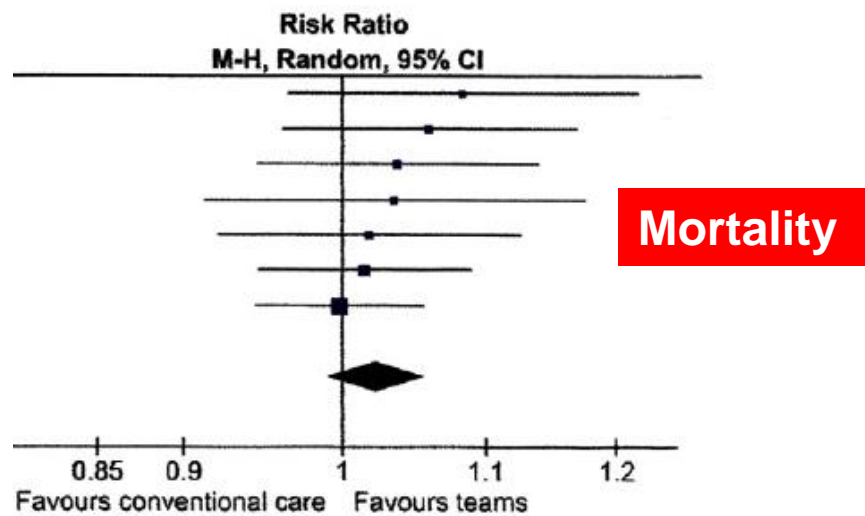
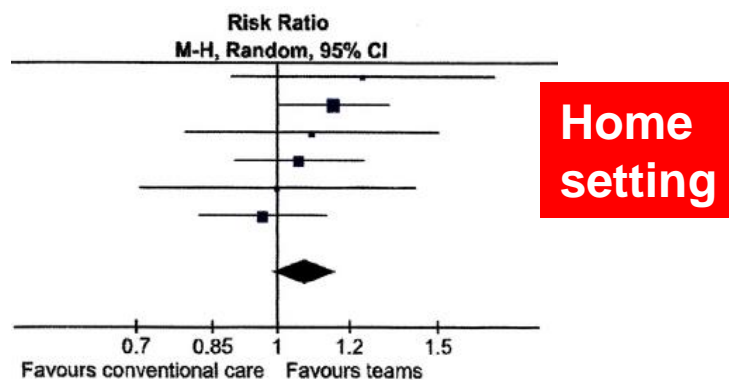
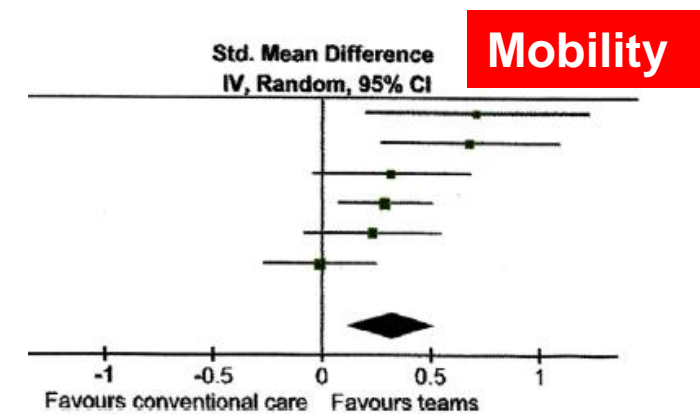
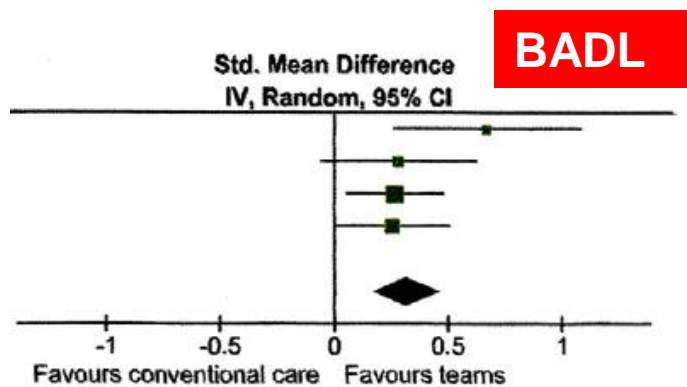
1 January 2022 – 31 December 2022

NHFD key performance indicators for patients with hip fracture in 2022



Effects of Geriatric Team Rehabilitation After Hip Fracture: Meta-Analysis of Randomized Controlled Trials

Peter Nordström MD, PhD^{a,*}, Karl-Gunnar Thorngren MD, PhD^b, Ami Hommel PhD^b, Lena Ziden PhD^c, Sten Anttila PhD^d



Implementation of a standardized protocol to manage elderly patients with low energy pelvic fractures: can service improvement be expected?

International Orthopaedics (SICOT) (2017) 41:1813–1824

Nikolaos K. Kanakaris^{1,2,3} • Tess Greven^{3,4} • Robert M. West⁵ • Arie B. Van Vugt⁶ • Peter V. Giannoudis^{3,7}

CONSERVATIVE MANAGEMENT PLAN PELVIC FRACTURES +65yrs

UNILATERAL SACRAL INJURY
Mobilisation PLAN 1A
under PHYSIO SUPERVISION
Protected Weight Bearing on the affected side
Limited Distances with Zimmer / Crutches
If non-compliant, may need Bed-to-Chair/Wheelchair
x6 weeks + RW in fracture clinics

Adequate Pain Relief (avoid NSAIDs)
Thromboprophylaxis x6/52 & FBC monitoring first 2/52
Prevention of Pressure Sores
Evaluate Anti-Osteoporosis Treatment
consider Anabolic agent + calcium/VitD

BILATERAL SACRAL INJURY
Mobilisation PLAN 1B
under PHYSIO SUPERVISION
BED to CHAIR/WHEELCHAIR transfers for 6/52
If Bilateral Non-Weight Bearing => Banana Board
If patient non-compliant / confused => HOIST
x6 weeks + RW in fracture clinics

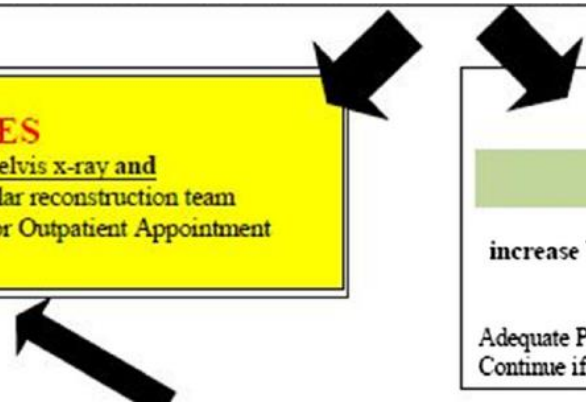
Adequate Pain Relief (avoid NSAIDs)
Thromboprophylaxis x6/52 & FBC monitoring first 2/52
Prevention of Pressure Sores
Evaluate Anti-Osteoporosis Treatment
consider Anabolic agent + calcium/VitD



?? Significant Discomfort or Pain with this Mobilization Plan (1A or 1B) ??

YES
Get new AP Pelvis x-ray and
contact the Pelvic and Acetabular reconstruction team
for Advice, Review and/or Outpatient Appointment

NO
Period between 6-12 weeks post diagnosis
Mobilisation PLAN 2
under PHYSIO SUPERVISION
increase Weight Bearing status on affected side with zimmer/crutches
increase Distances the patient covers
x6 weeks + RW in fracture clinics
Adequate Pain Relief (avoid NSAIDs)
Continue if have started Anabolic agent and calcium Vit D for at least 6months



Caratteristiche dei pazienti ed outcome

	Group A following the SOP	Group B Not following the SOP
General characteristics		
Number, %	67, 50.8%	65, 49.2%
Males	13, 19.4%	11, 16.9%
Females	54, 80.6%	54, 83.1%
Age years mean, (SD)	86, (8.1)	84.2, (6.7)
Charlson comorbidity index median, (range)	5.6, (2.4)	5.5, (2.5)
Pre-injury mobilization status		
Unaided community ambulatory	28, 41.8%	26, 40%
Aided community ambulatory	24, 35.8%	27, 41.5%
Household ambulatory	5, 7.5%	4, 6.1%
Non-functional ambulatory	0, 0%	0, 0%
Non-available data	10, 14.9%	8, 12.3%
Post-injury at final follow up mobilization status		
Unaided community ambulatory	12, 17.9%	9, 13.8%
Aided community ambulatory	32, 47.8%	19, 29.2%
Household ambulatory	10, 14.9%	15, 23.1%
Non-functional ambulatory	0, 0%	4, 6.2%
Died earlier	8, 11.9%	4, 6.2%
Non-available data	5, 7.7%	14, 21.5%

Caratteristiche dei pazienti ed outcome

	Group A following the SOP	Group B Not following the SOP
Outcome		
LOS in days mean, (SD)	21.5, (19)	21, (18.5)
Union	43, 64.2%	27, 41.5%
Malunion	4, 6%	17, 26.2%
Nonunion	2, 3%	2, 3.1%
Time to radiological healing mean, (SD)	168 days (229.7)	166.2 days (231.5)
Time to clinical healing mean, (SD)	139.8 days (116.6)	138.1 days (117.4)
Complications	25, 37.3%	26, 40%
Death in-hospital within the same admission	3, 4.5%	9, 13.8%
Death within 12 months from FPF	18, 26.9%	26, 40%
Return to pre-injury residence	35, 52.2%	46, 70.8%
Restoration of the pre-injury mobility status	38, 56.7%	22, 33.8%

Conclusioni

- **Limiti correlati agli studi effettuati.**
- **Incertezza sulle indicazioni alla mobilizzazione.**
- **Come attuare l'intervento multidisciplinare?**
- **Necessità di considerare le sindromi geriatriche (delirium, demenza, fragilità)**
- **Point-prevalence study sulla gestione del paziente anziano con frattura di bacino?**
- **Position paper intersocietario (SIGG-SIOT-SIMFER)?**