

# The Inadequate Treatments for Patients before and after Osteoporotic Hip Fracture

### Wong TH\*

Department of Orthopedics, National Taiwan University, Taiwan

**\*Corresponding author:** Tze Hong Wong, Department of Orthopedics, National Taiwan University Hospital Hsin-Chu Branch, Hsin Chu, Taiwan, ROC Taiwan, Tel: +886-972654018; Email: tzehongwong@gmail.com

Hip fracture will count for a significant problem in the aging group in the near future. Although the fracture is always being considered unexpected, either the fracture itself or the complication of the fracture treatments, patients and medical personnel should aware of the so call unexpected fractures and complications are really preventable and predictable with careful alertness.

We review four groups of our patients in the follow conditions from 2016 to 2018.

1. Osteoporotic hip fracture with age more than 70.

Opinion

Volume 3 Issue 3 Received Date: May 07, 2019 Published Date: May 14, 2019 DOI: 10.23880/jobd-16000183

2. Subsequent hip fracture of group 1

3. Fixation implant failure of group 1

4. Periprosthetic fracture after hip fracture of group 1

#### Group 1

There were 440 hip fractures, upon the fracture, only 15% of the patient had performed BMD study within 2 years, and 1/4 of them received osteoporotic treatment. For those who did not have recent BMD data, we arranged the study and reflected more than 89% were osteoporosis (T-score <-2.5) (Figures 1A & 1B).



Figure 1A: 83y/o F.

## Journal of Orthopedics & Bone Disorders

▲ 重都所再相片 □ 新預到作	ā	3	€ İİ	↔ H E S S * N A	e Height: 150 cm 3MI: 2533 kg/m Site: Right Fem Effective / Inpu Adde scan: non unalysis: Autor	Weight: 2 ur t dose : 0.4µSv/14µG mal matic	义 編載和: 57 kg y	a≊∏ ∧ Γι	
					10 Ye	ars probability of fr Country : Taiwan	icture		
			-		Fracture type	Without BMD %	With BMD %		
					Osteoporotic	18.37	26.37		
	Image not for dia	ignostic use.	Densii	ometry Data	Osteoporotic Hip	18.37 8.34	26.37 13.76		
	Image not for dis	ignostic use. BMD(g/cm²)	Densit BMC(g)	ometry Data Area(ci	Osteoporotic Hip m²)	18.37 8.34 <b>T-score</b>	26.37 13.76 <b>Z-score</b>		
-	Image not for dis ROI Neck	ignostic use. BMD(g/cm²) 0.514	Densit BMC(g) 3.48	ometry Data Area(ci 6.78	Osteoporotic Hip m²)	18.37 8.34 <b>T-score</b> -3.4(-45%)	26.37 13.76 <b>Z.score</b> -1.0 (-20%)		
-	Image not for dia ROI Neck G.T	ignostic use. BMD(g/cm²) 0.514 0.461	Densit BMC(g) 3.48 4.51	ometry Data <u>Area(c</u> 6.78 9.79	Osteoporotic Hip m²)	18.37 8.34 <b>T-score</b> -3.4(-45%) -2.8(-40%)	26.37 13.76 <b>Z-score</b> -1.0 (-20%) -1.0 (-19%)		
-	Image not for dia ROI Neck G.T Inter	ngnostic use. <b>BMD(g/cm²)</b> 0.514 0.461 0.614	Densit BMC(g) 3.48 4.51 12.50	ometry Data <u>Area(cr</u> 6.78 9.79 20.3'	Osteoporotic Hip m <sup>2</sup> ) 7	18.37 8.34 <b>T-score</b> -3.4 (-45%) -2.8 (-40%) -3.5 (-49%)	26.37 13.76 <b>Z-score</b> -1.0 (-20%) -1.0 (-19%) -1.6 (-30%)		
-	Image not for dia ROI Neck G.T Inter Total Hip	ngnostic use. BMD(g/cm²) 0.514 0.461 0.614 0.555	Densit BMC(g) 3.48 4.51 12.50 20.50	ometry Data Area(cr 6.78 9.79 20.3' 36.9-	Osteoporotic Hip m²) ? ? ? 4	18.37 8.34 <b>T.score</b> -3.4 (.45%) -2.8 (.40%) -3.5 (.49%) - <b>3.3 (.46%)</b>	26.37 13.76 <b>Z-score</b> -1.0 (-20%) -1.0 (-19%) -1.6 (-30%) -1.4 (-26%)	_	

### Group 2

7.5% subsequent fracture occurred in above 440 fractures in the period of 5weeks to 26 months. The immediate BMD after fracture showed 92% as vase

majority of the patients stayed at T-score -2.5 or less. While less than 10% of these patient received appropriate osteoporotic medication before the subsequent fracture for fracture prevention (Figures 2A & 2B).



Figure 2A: 95 y/o F.

## Journal of Orthopedics & Bone Disorders

	10 Ye	ars probability of fra Country : Taiwan	
	Fracture type	Without BMD %	
1 A A	Osteoporotic	NC	
Densitometry Data	Hip	NC	
BMC(g) Area(c	m²)	T-score	
8.87 13.9	1	-3.9 (-40%)	
11.09 15.9	6	-3.4 (-35%)	
12.46 15.4	4	-2.3 (-24%)	
32.42 45.3	2	-3.2 (-33%)	
8.88 11.2	3	-1.8 (-20%)	
<b>Figure 2B:</b> Poor BMD a	t subsequent fra	cture.	

#### Group 3

For fixation implant failure, we noticed that poor bone quality will reduce the anchorage power for metallic implants and induce rapid implant failure such as loosening, loss of reduction Z-effect etc. Although the failure rate was 6.8% among those 440 patients, almost all of them need revision surgery. Again their BMD were unreasonably low at revision and not under any monitoring after the fracture. (<15% treated with medication and BMD follow up) (Figures 3A & 3B).



Figure 3A: 68 y/o F post op 3 weeks Revision with Bipolar prosthesis.

Wong TH. The Inadequate Treatments for Patients before and after Osteoporotic Hip Fracture. J Ortho Bone Disord 2019, 3(3): 000183.

	10 16	country : Taiwan	acture
	Fracture type	Without BMD %	With BMD %
	Osteoporotic	8.78	NC
metry Data	Нір	2.32	NC
Area(	:m²)	T-score	Z-score
17.4	11	-5.3 (-55%)	-3.5 (-45%)
13.6	52	-3.8 (-40%)	-2.1 (-26%)
31.0	2	-4.6 (-48%)	-2.9 (-37%)
12.4	13	-0.2 ( -2%)	1.5 ( 21%)
12.1	9	NC	NC
	Figure 3B: P	oor BMD before rev	vision.

#### Group 4

5.8 % of periprosthetic fracture had drawn the attention for revisions and most of them were in Bipolar prosthesis while similar unaware status of osteoporotic treatment and study was noticed.

In these groups of patient, the so called unexpected episodes of fracture and complication were actually preventable, the inadequate awareness of poor bone quality warrant the episodes due to either uncommon BMD study or uncommon osteoporotic medication, or both (Figures 4A & 4B).

To improve the control of these preventable issues, we highly recommended the following.

- 1. Routine monitoring of BMD after 65
- 2. To treat those who meet the criteria of osteoporotic treatment with education and medications
- 3. Once hip fracture suffered, continuous BMD monitoring and osteoporotic medication is mandatory
- 4. Appropriate implants for fixation to prevent implant failure
- 5. Bone quality evaluation should be done proceeding the scheduled total joint replacement surgery
- 6. Once a fair or poor bone quality is found, total joint replacement should be performed after appropriate management with osteoporotic medication, exercise training etc. to prevent periprosthetic fracture



Wong TH. The Inadequate Treatments for Patients before and after Osteoporotic Hip Fracture. J Ortho Bone Disord 2019, 3(3): 000183.

# Journal of Orthopedics & Bone Disorders

325			Sin *E Mo An	te : Left Femus ffective / Inpur de scan: nom alysis : Autor 10 Ye	t dose : 0.4μSv/14μG mal matic ars probability of fra
					Country : Taiwan
				Fracture type	Without BMD %
		1		······································	
	. di		_	Osteoporotic	14.39
Image not for	diagnostic use.	Densitor	metry Data	Osteoporotic Hip	14.39 5.60
Image not for ROI	diagnostic use. BMD(g/cm²)	Densitor BMC(g)	metry Data Area(cm	Osteoporotic Hip 2)	14.39 5.60 <b>T-score</b>
Image not for ROI Neck	diagnostic use. BMD(g/cm²) 0.679	Densitor BMC(g) 2.09	metry Data Area(cm 3.08	Osteoporotic Hip <sup>2</sup> )	14.39 5.60 <b>T-score</b> -2.1 (-27%)
Image not for ROI Neck G.T	diagnostic use. BMD(g/cm²) 0.679 0.568	Densitor BMC(g) 2.09 4.36	metry Data Area(cm 3.08 7.69	Osteoporotic Hip <sup>2</sup> )	14.39 5.60 <b>T-score</b> -2.1 (-27%) -1.9 (-27%)
Image not for ROI Neck G.T Inter	diagnostic use. BMD(g/cm²) 0.679 0.568 0.816	Densitor BMC(g) 2.09 4.36 15.97	metry Data <u>Area(cm</u> 3.08 7.69 19.57	Osteoporotic Hip	14.39 5.60 <b>T-score</b> -2.1 (-27%) -1.9 (-27%) -2.3 (-33%)
Image not for ROI Neck G.T Inter Total Hip	diagnostic use. BMD(g/cm²) 0.679 0.568 0.816 0.739	Densitor BMC(g) 2.09 4.36 15.97 22.43	metry Data <u>Area(cm</u> 3.08 7.69 19.57 <b>30.33</b>	Osteoporotic Hip <sup>2</sup> )	14.39 5.60 <b>T-score</b> -2.1 (-27%) -1.9 (-27%) -2.3 (-33%) -2.1 (-30%)

