Fragility Fracture Liaison Program – Bridging the gap between the Publics and Private interface in management of osteoporosis after fragility fracture

Law SW¹,² · Liu PL¹ · Fung KY¹,²

1. Department of Orthopedic Rehabilitation, Tai Po Hospital
2. Department of Orthopedics and Traumatology, Tai Po Alice Ho Miu Ling Nethersole Hospital
Outline

Introduction : Why ?
Methodology : How ?
What are the result ?
Future
INCIDENCE OF 3 FRACTURES

Annual Fracture Incidence, per 100,000

- Youngest BB
- Oldest baby boomers
- Vertebrae
- Hip
- Wrist

Next 5 to 25 years

Age
ORTHOPEDIC FRACTURE CARE
Downward Spiral

Osteoporosis

VCF

Mortality

Back Pain

Spinal Deformity

Decreased Lung Capacity

Impaired Function

Loss of Appetite

Increased Fracture Risk

Increased Lung Problems, Co-morbidities

More Bone Loss

23% Increased Mortality

Decreased Activity

Sleeping Problems

Decreased Mortality
Fracture

Osteoporosis

1:0
Prior fracture increases the risk of subsequent fracture

<table>
<thead>
<tr>
<th>Site of prior fracture</th>
<th>Hip</th>
<th>Spine</th>
<th>Forearm</th>
<th>Minor fracture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hip</td>
<td>2.3</td>
<td>2.5</td>
<td>1.4</td>
<td>1.9</td>
</tr>
<tr>
<td>Spine</td>
<td>2.3</td>
<td>4.4</td>
<td>1.4</td>
<td>1.8</td>
</tr>
<tr>
<td>Forearm</td>
<td>1.9</td>
<td>1.7</td>
<td>3.3</td>
<td>2.4</td>
</tr>
<tr>
<td>Minor fracture</td>
<td>2.0</td>
<td>1.9</td>
<td>1.8</td>
<td>1.9</td>
</tr>
</tbody>
</table>

*A prior fracture increases the risk of new fracture 2- to 5-fold*

A MILLION FRAGILITY FRACTURES A YEAR

But can we do more?
Secondary Prevention
OPTIMAL CARE OF FRAGILITY FRACTURE

PATIENT: GOALS, CHALLENGES AND SOLUTIONS

Fix the fracture

Surgical challenges

Keep patient mobile

Multidisciplinary rehab

Keep patient from another fracture

Osteoporosis management and secondary prevention
Local Scene .....
WHERE ARE THE PATIENTS?

Service Gap

Osteoporosis Expert

Orthopedic Surgeon

Primary Physician
Hospital

Acute Rehabilitation

GAP

Secondary prevention

Intrinsic: Lack of knowledge
Extrinsic: Heavy patient load and lack of resources
My responsibility?
“JOIN UP APPROACH”

Primary Care Physician

Osteoporosis Expert

Orthopedic Surgeon

Team Work
Fragility Fracture Cases

Fix the fracture

Orthopedics Management

OPD

Rehabilitation Hospital

Fragility Fracture Liaison Coordinator

Osteoporosis management and secondary prevention
HONG KONG
(NTE CLUSTER) MODEL

- Ortho-surgeon initiative approach
- Fragility Fracture Liaison Program
- Establishment of link with primary care and physician in community for continuation of care

Fix the fracture

Fix the Linkage
Objective

• To evaluate the effectiveness of the FFLP in secondary prevention of fragility fractures.

-Initiation of treatment
-Incidence of second fracture.
Design

Prospective study with control group from historical cohort. Jan 2006- Jan 2007

1. Initiation of Osteoporosis Treatment: 7.8%
2. The rate of second fracture from (Hip fracture, Vertebral fracture): 5.6%
Patients

November 2006-January 2008

PWH
AHNH
NDH
TPH
FFLS – No. of patients vs type of fractures

Total: 1150

Type of fractures of patients recruited in FFLS

- Hip: 537
- Spine: 211
- Others: 211
- Colles: 169
- No #: 22

Total patients: 1150
FFLS – Attendance rate

Attendance of patients at JOCCOC & UCNCHS

<table>
<thead>
<tr>
<th>Community centres</th>
<th>Attended (patients)</th>
<th>Not attended</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCNCHS</td>
<td>267</td>
<td>414</td>
</tr>
<tr>
<td>JOCCOC</td>
<td>194</td>
<td>275</td>
</tr>
</tbody>
</table>

682 attended
469 not attended
FFLS – Site recruitment

Different recruitment sites for FFLS

- PWH: 702
- TPH: 132
- POP: 90
- CDRC: 6
- AHNH: 26
- AHNH-IP: 72
- Outreach clinic: 6

Total: 702
## FFLS- Attendance at JOCOC

<table>
<thead>
<tr>
<th></th>
<th>No. of pts referrals (HA level)</th>
<th>No. of pts accepted (HA level)</th>
<th>No. of pts visit doctors</th>
<th>No. of pts prescribed Tx.</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOCOC</td>
<td>469</td>
<td>469</td>
<td>194 (41.3%)</td>
<td>Bisphosphonate: 160 Calcium: 8 (82.5%)</td>
</tr>
</tbody>
</table>
# FFLS – Attendance (UCNCHS)

<table>
<thead>
<tr>
<th></th>
<th>No. of pts referrals (HA level)</th>
<th>No. of pts accepted (HA level)</th>
<th>No. of pts visit doctors</th>
<th>No. of pts prescribed Tx.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UCNCHS</strong></td>
<td>681</td>
<td>681</td>
<td>267 (39.2%)</td>
<td>Bisphosphonate: 156</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Calcium: 46</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Treatment rate: 58.4%</td>
</tr>
</tbody>
</table>
FFLS – Start treatment during in-patient

<table>
<thead>
<tr>
<th></th>
<th>Attended</th>
<th>Referred</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOOCOC</td>
<td>49 (51.6%)</td>
<td>95</td>
</tr>
<tr>
<td>UCNCHS</td>
<td>39 (40.6%)</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>JOCOC (Not attended)</td>
<td>UCNCHS (Not attended)</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>No. of patients (OAH/ CSSA)</td>
<td>25</td>
<td>115</td>
</tr>
<tr>
<td>Proportion</td>
<td>9%</td>
<td>27.8%</td>
</tr>
</tbody>
</table>
## FFLS – Attendance rate vs type of fractures (UCNCHS)

<table>
<thead>
<tr>
<th>Type of Fracture</th>
<th>Attended</th>
<th>Not attended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hip fracture</td>
<td>95 (35.6%)</td>
<td>172</td>
</tr>
<tr>
<td>Spine</td>
<td>74 (51.0%)</td>
<td>71</td>
</tr>
<tr>
<td>Colles</td>
<td>42 (35.3%)</td>
<td>77</td>
</tr>
<tr>
<td>Others</td>
<td>53 (41.1%)</td>
<td>76</td>
</tr>
<tr>
<td>No fracture</td>
<td>3 (15.8%)</td>
<td>16</td>
</tr>
</tbody>
</table>
### FFLS – Attendance rate vs type of fractures (JOCOC)

<table>
<thead>
<tr>
<th></th>
<th>Attended</th>
<th>Not attended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hip fracture</td>
<td>113 (41.9%)</td>
<td>157</td>
</tr>
<tr>
<td>Spine</td>
<td>33 (50%)</td>
<td>33</td>
</tr>
<tr>
<td>Colles</td>
<td>25 (50%)</td>
<td>25</td>
</tr>
<tr>
<td>Others</td>
<td>22 (36.7%)</td>
<td>38</td>
</tr>
<tr>
<td>No fracture</td>
<td>1 (33.3%)</td>
<td>2</td>
</tr>
</tbody>
</table>
Second fracture Rate

Historical Cohort: 5.6%

FFLP: 0.96%
Bone density is not the only factor of fracture risk ...
Blood pressure measurement

Increase in BP
Medication
Decrease in BP

Fragility fracture
Increase in fall risk score / osteoporosis
Intervention: Medication
Secondary prevention
Decrease in fracture risk
Conclusion

The Fragility Fracture Liaison Program is effective in secondary prevention of fragility Fracture.

Team Work and Partnership is essential component for success.