Ortho-Geriatric Collaboration (OGC) Care for elderly with hip fractures in Kowloon Hospital

TH Lee (1), Teresa Yu (1), Eric MP Yeung (1), Raymond Chin (2), Rosanna Chau (4), William Cheng (2), Pui Pui Lau (3), KB Lee (2), Wilson Li (2), Olga Ma (3), Pui Kin Ng (3), Bobby Ng (5), Kwai Hing Ting (1)

(1) Department of Rehabilitation, Kowloon Hospital, (2) Department of Orthopaedics & Traumatology, Queen Elizabeth Hospital, (3) Department of Respiratory Medicine, Kowloon Hospital, (4) Physiotherapy Department, Kowloon Hospital, (5) Occupational Therapy Department, Kowloon Hospital.
Existing Gap

- Around 7000 admission due to hip fracture per year
- > 90% with age > 65 with comorbidities
- Medical problems are dealt with by reactive consultations
- Inadequate geriatric support and provision of coordinated care
- Limited physiotherapy in weekends and public holidays
Objectives

• Built up a simple and sustainable model to enhance collaboration between Orthopedic and Rehabilitation Department in management of geriatric fracture hip cases

• Enhanced inter-professional collaboration to improve the sense of having a shared mission, to provide proactive and coordinated rehabilitation care to meet need of the frail older fracture patients

• Multidisciplinary approach

  Early Mobilisation

  Early Recognition of any co-morbidities

  Early Recognition and management of complications

  Early Implementation of discharge planning

• Enhance quality care of the geriatric fracture hip patients in term of various key performance index
  • (Primary: LOS, transfer back rate, anti-osteoporotic drug; Secondary: Functional improvement - BI, FIM, discharge destination , mortality )
Fracture hip patient journey from Hospital to community

**ACUTE PHASE CARE**

QEH Orthopedics

**Reactive Medical consultation**

KHMB Orth rehab

**IN-PATIENT REHABILITATION**

OUT-PATIENT REHABILITATION

**GERIATRICIAN/ REHABILITATION PHYSICIANS**

Geriatrician/ Rehabilitation Physicians

Ortho-geriatric collaboration with multi-disciplinary, cross specialties approach

**COMMUNITY REHAB CENTRE/ HOME EXERCISE**

GDH/ Outpatient PT/OT

KH Rehab Day lounge/ OSC clinic

KHMB – Kowloon Hospital Main Building

OSC – Osteoporosis Care
Our program is characterized by the following points:

- Because of limited manpower, the rehabilitation team can only provide 8 hours of consultation per week (2 x 4hr morning round); we prioritize our time on patients with active medical problems or potential discharge problems.

- Basic information should be available: social history, physiotherapist and occupational therapy assessment, MSW (probably from Day 3 after admission to orthopedic rehabilitation ward)

- Comprehensive template assessment in electronic version facilitating communication between specialties and multi-disciplines

- Avoid increased front-line workload by minimizing unnecessary clerical work

- Achieve continuation of patient care through our rehabilitation day lounge or osteoporosis clinic after patient discharge from hospital
Avoid increased front-line workload

Orth-Geriatric Collaboration First Consultation Template

Tempated consultation notes

Diagnosis /operation:
Day of operation (post op duration): [Days]
Reason of fall (where and how):
Low energy fracture: YES/NO/INDETERMINATE
Orthopedic plan (weight bearing status/Orthosis or Cast duration):

Social History:
Lives with family members: [full day accompany/DIA/NTA]
DNR: [lives alone]
Potential care: YES/NO/Need Explore
Lift landing: YES/NO

Functional status:
Premorbid mobility
Unaided/Stick/Quad/Frame/Chairbound/Bedbound
ADL activity
Indep/Partial/Depend/Dependent

Past medical History:

==========Known Risk factor for Osteoporosis Fracture==========
Smoking: NO/YES
Alcohol > 3/day: NO/YES
Low Body weight, BMI < 18.5: NO/YES
Premature menopause (<45 years old): NO/YES
Immobility: NO/YES
Previous fragility fracture: NO/YES [detail: ]
Parent hip fracture: NO/YES
Recent fall history in last 12 months: NO/YES
Medication: NO/YES
- Oral steroid (mg/day/ Anti-convulsant/ PPI/ if YES)

Disease condition: NO/YES
- Rheumatoid Arthritis /IDDM/Chronic liver disease/ Chronic malnutrition [if YES]
- Hypogonadism/Thyroiditis/ Hyperparathyroidism/Cushing Syndrome
Summary of services provision

- Regular ward round, assessment and review of case (2 sections/week)
  - Particularly focus on rehabilitation related issue:
  - Pain management
  - Nutrition review
  - Bladder and Bowel management
  - Complication management: UTI, pneumonia, delirium...
  - Discharge planning

- Review implementation on osteoporosis fracture prevention: fall prevention, work up 2nd cause of osteoporosis, OSC medication

- Liaisons with service currently available in KH rehab team
  - Urodynamic service for patient retention of urine
  - NCT/EMG
  - MSK US/Injection
  - Biweekly OSC education talk to both patient and relatives

- Post discharge care/ support
  - Rehab day lounge in Kowloon City cluster/ outpatient rehab
  - OSC clinic/post discharge early review if indicated
  - NGO rehabilitation center referral
## Baseline characteristics

<table>
<thead>
<tr>
<th>Table 1. Baseline characteristics of patients before and after Ortho-Geriatric Collaboration (OGC) program</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OGC program</strong></td>
</tr>
<tr>
<td>Demographics</td>
</tr>
<tr>
<td>Age, mean (SD), yrs.</td>
</tr>
<tr>
<td>Female sex, No. (%)</td>
</tr>
<tr>
<td>Premorbid mobility status</td>
</tr>
<tr>
<td>Independent walker, No. (%)</td>
</tr>
<tr>
<td>Assisted walker, No. (%)</td>
</tr>
<tr>
<td>Chair/Bedbound, No. (%)</td>
</tr>
<tr>
<td>Comorbid conditions</td>
</tr>
<tr>
<td>CCI, mean (SD)</td>
</tr>
<tr>
<td>Previous fracture history, No. (%)</td>
</tr>
<tr>
<td>Management of hip fracture</td>
</tr>
<tr>
<td>Operation, No. (%)</td>
</tr>
<tr>
<td><strong>Remark</strong></td>
</tr>
<tr>
<td>CCI – Charlson Comorbidity Index</td>
</tr>
</tbody>
</table>
Outcome

All fracture hip patients aged ≥ 60 yrs. old in one pilot orthopaedics ward, N = 40 in 12wks

Mean LOS: 32d → 24d (p = 0.04)

Unplanned transfer back: n = 7, 17.9% → n = 4, 10% (p = 0.34)

D/C back to original caring place: 72% vs 70%

FIM and EMS increased by 7.9 and 3.4 respectively

30 days mortality: n = 1(2.5%) vs n = 0 (p = 0.31)

<table>
<thead>
<tr>
<th>Table 2. Major outcomes of patient before and after OGC program</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OGC program</strong></td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Length of stay, mean (SD), days</td>
</tr>
<tr>
<td>Unplanned transfer back rate, No. (%)</td>
</tr>
<tr>
<td>Anti-osteoporosis drug use, No. (%)</td>
</tr>
<tr>
<td>Discharge to original caring place, No. (%)</td>
</tr>
<tr>
<td>30 days mortality, No. (%)</td>
</tr>
</tbody>
</table>

Fig 2. Outcome of Patients Before and After OGC Program
The new OGC program aims at providing more proactive medical support for the fracture hip patients since many of them are frail and have multiple comorbidities. It seems that after the program implementation, there is some improvement in the LOS of patients; the need of urgent transfer back to the acute hospital tended to decrease. The discharge rate to original caring place was maintained, and the patients also had significant functional improvement. Further outcome analysis and continue team building will be necessary to refine the program to suit the needs of both departments.

- **Enthusiastic**

- **Start stepwise**
  - Start in 1 ward
  - 2 times per week
  - Limited to fracture hip patients
  - Gradually increase scale

- **Good agreement about responsibilities across specialities**

- **Manpower and Team Building**

- **Outcome measures**
Discussion...