SA experience: Hip fracture care

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Clinical lead and chair, Orthogeriatric service
NALHN acute hip fracture operational committee
Outline

> Background
> NALHN experience: How did we get to where we are?
> Developing a measurement mind-set using ANZHFR
  > Initiatives in Orthogeriatrics
Background

> Under SA health reform in 2016, all stakeholders were involved in developing our state acute hip fracture management model of care
Background

- SA: 4 Orthogeriatric Fracture Centres
- CALHN: RAH, QEH
- NALHN: LMH
- SALHN: FMC
- Mt Gambier

- A Catalyst for NALHN to negotiate adequate funding to provide a 7-day orthogeriatrics service at LMH
NAHLN Orthogeriatric Service

> First specialist Orthogeriatric Fracture centre in SA to provide a 7 day orthogeriatric service since February 2017.

> Model of care:
> 7-day shared care model of care:
> Facilitated by daily consultant ward round and BPT
How did we get to where we are?

> Implementation strategies:
  • NALHN hip fracture implementation/operational committee
  • Engage all stakeholders
  • Have clinical champion in each clinical discipline

Process-related:
  • How we do things
  • Developed hip fracture pathway (who to contact) PPG
  • NOF admission pack: medical and nursing
  • Discharge summary template
<table>
<thead>
<tr>
<th>Date &amp; Time</th>
<th>PRESENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed by Name &amp; Designation:</td>
<td>Date &amp; Time:</td>
</tr>
</tbody>
</table>

**EMERGENCY SCREENING**

Does the patient demonstrate any life threatening symptoms that require review and/or treatment before addressing the suspected hip fracture? (Check box)

| Yes, address as per local Emergency practice. | No, continue with Suspected Hip Fracture Emergency Assessment |

Initial Presentation:

Treatment to Date:
ED admission

<table>
<thead>
<tr>
<th>ANALGESIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Management Plan:</td>
</tr>
<tr>
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<tr>
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<tr>
<td></td>
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<tr>
<td>Analgesia Review:</td>
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<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>New Analgesia Administered:</td>
</tr>
<tr>
<td>Paracetamol</td>
</tr>
<tr>
<td>Fascia Iliaca Nerve Block</td>
</tr>
<tr>
<td>Opioids</td>
</tr>
</tbody>
</table>
Ortho admission

Edits: add an extra blank page for plan
<table>
<thead>
<tr>
<th>Active Issues</th>
<th>Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>#NOF secondary to fall</td>
<td></td>
</tr>
<tr>
<td>Analgesia</td>
<td></td>
</tr>
<tr>
<td>Cardiovascular</td>
<td></td>
</tr>
<tr>
<td>Respiratory</td>
<td>Sit patient up as tolerated</td>
</tr>
<tr>
<td></td>
<td>Monitor for signs of HAP</td>
</tr>
<tr>
<td>Renal</td>
<td></td>
</tr>
<tr>
<td>Fluids</td>
<td></td>
</tr>
<tr>
<td>Cognition:</td>
<td>4AT, SMMSE, Clock face</td>
</tr>
<tr>
<td>Document history of MCI/neurodegenerative history/delirium</td>
<td>Interventions to prevent and treat delirium:</td>
</tr>
<tr>
<td></td>
<td>• For patients: given informant form and delirium info sheet</td>
</tr>
<tr>
<td></td>
<td>• Regular orientation</td>
</tr>
<tr>
<td></td>
<td>• Ensure patient has sensory aids</td>
</tr>
<tr>
<td></td>
<td>• Medication review</td>
</tr>
<tr>
<td></td>
<td>• Correction of dehydration, malnutrition and constipation</td>
</tr>
<tr>
<td></td>
<td>• Avoid hypoxia</td>
</tr>
<tr>
<td></td>
<td>• Pain assessment and management</td>
</tr>
<tr>
<td></td>
<td>• Promote sleep and avoid sleep disturbance</td>
</tr>
<tr>
<td></td>
<td>• Nursing: alert nursing staff regarding delirium management protocol</td>
</tr>
<tr>
<td></td>
<td>If 4AT ≥4: require further medical assessment and exclude reversible causes of delirium</td>
</tr>
<tr>
<td>Medication review</td>
<td></td>
</tr>
<tr>
<td>Endocrine</td>
<td></td>
</tr>
<tr>
<td>Is patient on oral hypoglycaemic/insulin? If yes, please refer to preoperative diabetes guidelines SSI01210 on NALHN PPG</td>
<td></td>
</tr>
</tbody>
</table>
Implementation strategies

Patterns
- Leadership
- Role modelling: Change culture (Proactive care)
- Team dynamics:
  - Create positive work environment
  - Working collaboratively with other team members

Education
- Regular orientation: orientation talk/manual/PPG
- Publicity: Grand round, SA hip fest

Accountability and sustainability
- Feedback loops: Mortality and morbidity, grand rounds, journal club, hip fracture registry, SA health dashboard (measure impact improvement)
- Celebrate achievement to drive performance
Developing a measurement mind-set

> Why is it important?
> Helps us to understand
  • How we are doing?
  • Identify gaps
  • Celebrate success: promote team morale
  • Facilitate change and sustainability
## SA QIP Dashboard: June 2017-June 2018

<table>
<thead>
<tr>
<th>KPI</th>
<th>LMH 2015-16</th>
<th>LMH</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity (#NOFs)</td>
<td>99</td>
<td>243</td>
<td>364</td>
<td>253</td>
<td>143</td>
</tr>
<tr>
<td>Acute LOS</td>
<td>10.2 days</td>
<td>5.9 days</td>
<td>10 days</td>
<td>9 days</td>
<td>11.1 days</td>
</tr>
<tr>
<td>Timely surgery</td>
<td>74.3%</td>
<td>91.8%</td>
<td>90.2%</td>
<td>89%</td>
<td>84.3%</td>
</tr>
<tr>
<td>30 days mortality</td>
<td>6.6%</td>
<td>8%</td>
<td>12.3%</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Timely physio ax</td>
<td>94%</td>
<td>98%</td>
<td>64%</td>
<td>92%</td>
<td>72.7%</td>
</tr>
<tr>
<td>D/C summary</td>
<td>87%</td>
<td>81.5%</td>
<td>98.5%</td>
<td>52.3%</td>
<td></td>
</tr>
</tbody>
</table>
ANZ hip fracture registry (12 months data from April 17 to March 2018)

> Australia: 41 sites
> New Zealand: 15 sites

<table>
<thead>
<tr>
<th>Domain</th>
<th>LMH</th>
<th>National</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-op cognitive assessment</td>
<td>95%</td>
<td>92%</td>
</tr>
<tr>
<td>Acute LOS</td>
<td>5.8 days</td>
<td>7 days</td>
</tr>
<tr>
<td>Nerve block</td>
<td>68%</td>
<td>80%</td>
</tr>
<tr>
<td>Surgery &lt;48Hours</td>
<td>90%</td>
<td>78%</td>
</tr>
<tr>
<td>Median time to surgery</td>
<td>21 hours</td>
<td>27.5 hours</td>
</tr>
<tr>
<td>30 day mortality</td>
<td>6.6%</td>
<td>11%</td>
</tr>
<tr>
<td>Bone protection med on discharge</td>
<td>95%</td>
<td>68%</td>
</tr>
</tbody>
</table>

NB: Pre-op assessment: Anaesthetics and Orthogeris
Initiatives in Orthogeriatrics

> 4 Strategies to improve process:
> 1: Direct admission process (End of Jan 2019)
> 2: Daily early consultant ward round to reduce unnecessary surgery delay and proactively reduce risk of delirium
> 2. **Fasting Clock**: Tool for nursing staff to review fasting status of patients
> 3. **DOAC protocol**
> 4. **Orientation**
Direct admission process

> All Orthopaedics admissions
> Only for medically stable patients (vital signs within the white zone)
> **NOF**: ED staff to complete
  - MR589 admission note with 4 hour plan,
  - Pre-op check list,
  - Fasting plan (fasting clock: fast from 2 am)
Hip Fracture Medical Pre-Op Checklist

Surname: _____________________________
First Name: __________________________
D.O.B. _______________ Sex: __________

TO BE COMPLETED BY ORTHOPAEDIC/ORTHOGERIATRIC RMO OR AFTER HOURS ADMITTING SURGICAL MEDICAL STAFF

COMPLETED BY: Name (block print): _____________________________
Designation (block print): _____________________________ Date: __________ Time: __________

PRE-OPERATIVE INVESTIGATIONS:

☐ ECG: _____________________________ ☐ CXR: _____________________________ ☐ X-Rays

BLOOD / FLUID / ELECTROLYTES CHECKED:

☐ Na: _______________ ☐ K: _______________ ☐ Urea: _______________
☐ Hb: _______________ ☐ Platelets: _______________ ☐ Creatinine: _______________
☐ Vitamin D + Calcium/Thyroid function test/LFTs Ordered ☐ Urinalysis checked
☐ Fluid balance reviewed and intravenous therapy prescribed ☐ Indwelling catheter
☐ Group and hold ordered

REVIEW OF MEDICATIONS:

☐ Hold anti-hypertensives except beta-blocker

☐ Antiplatelet: _____________________________ ☐ Indication: _____________________________

☐ Dual antiplatelet: _____________________________ ☐ Hold direct oral anticoagulant

☐ Apixaban/rivaroxaban drug level (include dose and time of last dose): Indication _____________________________

☐ Dabigatran: Indication _____________________________ ☐ Thrombin clotting time

☐ Warfarin INR: _____________________________ ☐ Indication: _____________________________

- Hold warfarin
- Give IV Vitamin K 5mg, check INR @6hr
- If repeat INR >1.5, give IV Vitamin K 3 mg and repeat INR in 6 hours

Contact on call Geriatrician to discuss management of medically unstable patient. Liaise with medical sub-specialty registrar for medical review for medically unstable patient. Interim Plan:
Fasting guidelines for emergency orthopaedic

General principle: Minimum fasting for solids for 6 hours and fluids for 2 hours prior to surgery recommended by the ANZCA and maximum of fasting period no longer than 12 hours.

On admission: Orthopaedics admitting staff will need to document a fasting plan. (Fast from 2 am as per fasting clock for nursing staff to follow protocol.)

- **Morning surgery:** Fast from 2 am for all orthopaedics patients including NOFs. NOF patients will have preoperative supplement and other planned orthopaedics surgery patients can have clear fluids up to 2 hours as per fasting clock.
- **Afternoon surgery:** Light breakfast and fast for solid at 6 am and can have clear fluids up to 2 hours prior to scheduled surgery.
Reduce variation in practice

DOAC protocol

**Factor Xa inhibitors (Apixaban and rivaroxaban)**
On admission, request **URGENT apixaban or rivaroxaban drug level** (include time of last dose and dosage) for 6 am (Handover to surgical cover), COAGS, CBE, EUC and LFT to assist surgical planning. Aim < 50 µg/L.

**Dabigatran:**
On admission, request **urgent thrombin clotting time** at 6 am, COAGS, CBE, EUC and LFT. Aim < 20 seconds.

Facilitate timely surgery
Does DOAC protocol work?

> 74 year old female from home admitted with left subcapital fracture NOF post fall on rivaroxaban with normal renal function
> Admitted on Sunday night
> Admission rivaroxaban at 6 am Monday: 56 microgm/L
> Repeat level at 12 pm Monday: 36 microgm/L
> **Surgery** on Monday at 3 pm (<24 hours)
> Otherwise, patient will be waiting for surgery at least 48 hours
Orientations

> Regular orientation to rotating staff (Orthopaedics, Orthogeriatrics)
> Informal and formal
> Enable and facilitate change: using patient story
Proactive care

- Timely review
- Early analgesia and surgery
- Reduce complications and physical disability
- Minimise delirium
- Value patient time
Conclusion

> **Proactive** Orthogeriatric service provides a 7 day shared care model

> Key driver for efficient service:

  - **Teamwork** and **data** (ANZHFR) to drive performance
  - **Leadership**
  - **Clinical champions**
Acknowledgement

> NALHN acute hip fracture operational committee
> Orthopaedics: Prof Edward Mah, Mr Paul Allcock
> Nursing: Tracy Morgan
> Emergency medicine: Dr Tariq Nehvi
> Anaesthetics: Dr Kym Osborne, Dr Richard Church
> Allied health: Alison Muirhead, Monique Adams
> All staff contributed to hip fracture care patients