Current issue

Depression, dementia, polypharmacy drug interactions and poor nutrition frequently remain unrecognised during the acute admission of the elderly person with acute orthopaedic injuries. Delirium can occur in as many as 60% of elderly patients with fractured neck of femur. Unrecognized complications of fractures or misdiagnosis can lead to potentially avoidable physical, psychological and social decline and hospital readmission. Protection against functional decline is imperative to maintaining quality of life and remaining in the family home. In rural areas where public transport and infrastructure are limited, a tyranny of distance means that this need is heightened. Previous international studies have demonstrated strong evidence that medical consultation of elderly patients with orthopaedic injuries, such as fractured neck of femur, improves patient outcomes.

Geriatric Conditions on admission (Intervention group n=52)

Inclusion criteria: all patients admitted to Northeast Health Wangaratta over the age of 70 with acute orthopaedic injuries from the August 2011 until January 2012.

Aim

To determine if a physician-led multidisciplinary team would improve patients’ modified Barthel score, surgical and medical complications, length of stay or discharge status compared to a non-physician led multidisciplinary team.

To determine prevalence of geriatric conditions, such as vitamin D deficiency and post-operative complications e.g. delirium.

Method

- Inclusion criteria: all patients admitted to Northeast Health Wangaratta over the age of 70 with acute orthopaedic injuries from August 2011 until January 2012.
- Intervention: physician led multidisciplinary team review of all acute orthopaedic admissions over age 70 during a 6 month period in 2011-2012.
- Multidisciplinary team included surgeons, gerontology nurse practitioners, physiotherapists and rehabilitation physicans.
- Internal quality audit documented Modified Barthel score, investigations, surgical and medical complications, length of stay and discharge status.
- Prospective audit compared with a retrospective audit - Patients in the intervention group were compared with an historical control group (multidisciplinary team with no physician) over a similar 6 month period in 2010-2011.

Pre-existing Conditions identified (Intervention group n=52)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>PVOD</td>
<td>13%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>15%</td>
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<tr>
<td>Dementia</td>
<td>15%</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>17%</td>
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<tr>
<td>CVD</td>
<td>17%</td>
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<tr>
<td>Renal disease</td>
<td>23%</td>
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<tr>
<td>COPD</td>
<td>23%</td>
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<tr>
<td>Cancer</td>
<td>36%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>42%</td>
</tr>
<tr>
<td>Incontinence</td>
<td>43%</td>
</tr>
</tbody>
</table>

Average Modified Barthel Scores (Intervention group n=52)

Pre-admission: 74.1

On Discharge: 55.2

Preadmission & Discharge Location (Intervention group n=52)

- Patients in the intervention group had on average 3.7 pre-existing medical conditions with hypertension being the most common.

Results

- 52 patients in the intervention group, 92 patients in the control group.
- The average age of patients was 84 years, 65% of patients were female.
- No differences between the groups in demographics, orthopaedic diagnoses or known co-morbidities on admission.
- Intervention group and control group had similar treatment and investigations to reduce the likelihood of immediate post-operative complications.

On admission:

- In both the intervention and control groups the majority had fractured necks of femur (#NOFs).
- The average pre-morbid modified Barthel score in intervention group was 74/100 (moderate-moderate dependency), which on discharge decreased to 55/100 (moderate dependency). Barthel scores were not recorded in control group histories.
- Patients in intervention group had on average 3.7 pre-existing medical conditions with hypertension being the most common.

In hospital – recognising post-operative complications:

- The most notable difference in groups was the increased diagnosis of post-op delirium in the intervention group (44% in intervention group, 10% in control group).
- 13% of intervention group received new diagnosis of Vitamin D deficiency. Control group did not have documented screening for Vitamin D deficiency.

Discharge:

- Intervention group: 46% of patients were discharged to higher level of care on discharge compared to pre-admission (control group data not recorded in histories).

Discussion

- Screening by the multidisciplinary team in the intervention group identified clinically significant vitamin D deficiency and functional decline.
- Importantly post-operative delirium was more readily recognised and treated in the intervention group. This has been shown in previous research to be of particular import in this age group; undiagnosed and misdiagnosed delirium increases morbidity and mortality in the geriatric population.
- The change in required level of care supported prior research, suggesting acute orthopaedic injuries have a significant effect on long term functioning in the elderly.

Conclusion

This project raised awareness of delirium and vitamin D deficiency in the acute elderly orthopaedic population. Multidisciplinary teams showed the potential to improve care through recognition of underdiagnosed post-operative complications such as delirium.

The next step is further integration with primary care including better communication with GPs and carers to ensure that vitamin D deficiency and functional decline identified with the Barthel's score is followed up.