Delirium in Post-acute and Long Term Care

Elizabeth Galik, PhD, CRNP, FAAN, FAANP
University of Maryland School of Nursing
Delirium

* Syndrome characterized by the acute onset of cerebral dysfunction with:
  * A change or fluctuation in baseline mental status
  * Inattention
  * Disorganized thinking or an altered level of consciousness
3.4%-10% LTC residents with delirium
20%-30.4% LTC residents with sub-syndromal delirium
1/3rd of LTC residents with dementia
5.5%-51% on admission to post acute care

(Boockvar, Signor, Ramaswamy et al., 2013, Boorsma, Joling, Frijters et al., 2012; McCusker, Col, Voyer et al., 2011; Dosa, Intrator, McNicoll et al., 2007; Kiely, Bergmann, Jones et al., 2004)
Impact of Delirium on PA/LTC

Resident

* Morbidity and Mortality
* Functional loss
* Cognitive deterioration
* Less likely to be discharged to the community

On the system

* More nursing time
* Increased risk of re-hospitalization
* Higher cost
* Impact on survey and quality indicators
Postacute facility disposition at discharge or 30 days post admission across delirium groups defined at postacute facility admission

<table>
<thead>
<tr>
<th>Disposition</th>
<th>Delirium (N=188)</th>
<th>Subsyndromal Delirium (N=246)</th>
<th>No Delirium</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Died in postacute care</td>
<td>7 (4)</td>
<td>6 (2)</td>
<td>0 (0)</td>
<td>.10</td>
</tr>
<tr>
<td>Rehospitalized while in postacute care</td>
<td>57 (30)</td>
<td>48 (20)</td>
<td>9 (13)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Discharged to the community</td>
<td>56 (30)</td>
<td>133 (54)</td>
<td>51 (73)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Remained in postacute care for 30 days</td>
<td>68 (36)</td>
<td>59 (24)</td>
<td>10 (14)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Outcomes of Older People Admitted to Postacute Facilities with Delirium

Prevalence of delirium as a function of nursing home deficiencies

Jones, Kiely, & Marcantonio (2010). JAMDA
Challenges Associated with Delirium in PA/LTC

1. Under-recognized
2. Lack of prevention
3. Inappropriate evaluation and management
1. Under-recognition
“She’s just not acting right.”
“He’s sleeping during the day and up and down at night.”
“She is just going downhill fast.”
“He’s more mixed up than usual.”

- Acute confusional state
- Mental status change
- Metabolic encephalopathy
Delirium is under-recognized

- Nurses identified delirium in the acute care setting 31% of the time (Inouye et al., 2001)
- Nurse recognition of delirium in LTC is 51% and for delirium symptoms ranges from 25%-66.7% Voyer, Richard, McCusker et al., (2010). JAMDA

- Risk Factors for under-recognition
  - Hypoactive “quiet” form
  - Resident age 80 or above
  - Delirium superimposed on dementia
Assessment of Delirium

* Keywords
* MDS
* Confusion Assessment Methods and other instruments
## Keywords Associated with Delirium Identified in Chart Review

<table>
<thead>
<tr>
<th>Chart-based review</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confusion</td>
<td>76 (95)</td>
</tr>
<tr>
<td>Disorientation</td>
<td>20 (25)</td>
</tr>
<tr>
<td>Altered mental status</td>
<td>13 (16)</td>
</tr>
<tr>
<td>Delirium</td>
<td>6 (7)</td>
</tr>
<tr>
<td>Agitation</td>
<td>4 (5)</td>
</tr>
<tr>
<td>Inappropriate behavior</td>
<td>3 (4)</td>
</tr>
<tr>
<td>Mental status change</td>
<td>1 (1)</td>
</tr>
<tr>
<td>Inattention</td>
<td>0</td>
</tr>
<tr>
<td>Hallucinations</td>
<td>0</td>
</tr>
<tr>
<td>Lethargy</td>
<td>0</td>
</tr>
</tbody>
</table>

Morandi, Solberg, Habermann et al., (2009). JAMDA
MDS Indicators for Delirium

* Easily distracted
* Altered perception or awareness of surroundings
* Disorganized speech
* Restless
* Lethargic
* Mental function varies
Assessment: So, how do I know when it’s Delirium?

Confusion Assessment Method

Assessment: Clock in the Box

Instructions

- Please read and do the following carefully:
- In the blue box on the next page:
- Draw a picture of a clock
- Put in all the numbers
- Set the time to ten after eleven.
Clock in the Box
Assessment: DOWB; MOYB

- Simple test of attention
- Requires no instruments
- Document number correct for each
Step 1

State patient’s name and ask patient to open eyes and look at speaker. Ask ‘Describe how you are feeling today’

If answers with short answer (<10 seconds), cue with second open ended question

If no response to verbal cue, physically stimulate patient by shaking shoulder
Modified RASS (cont.)

• Step 2

+4 – Combative; No attention; overtly combative, violent, immediate danger to staff
+3 - Very agitated; Very distractible; repeated calling or touch required to get or keep eye contact or attention.; cannot focus; pulls or removes tube(s) or catheter(s); aggressive; fights environment, not people
+2 - Slightly agitated; Easily distractible; rapidly loses attention; resists care or uncooperative; frequent non-purposeful movement
+1 – Restless; Slightly distractible; pays attention most of the time; anxious, but cooperative; movements not aggressive or vigorous
0 - Alert and calm; Pays attention; makes eye contact; aware of surroundings; responds immediately and appropriately to calling name and touch
-1 - Wakes easily; Slightly drowsy; eye contact>10 sec; not fully alert, but has sustained awakening; eye-opening/eye contact to voice >10 seconds
-2 - Wakes slowly; Very drowsy; pays attention some of the time; briefly awakens with eye contact to voice <10 seconds
-3 - Difficult to wake; Repeated calling or touch required to get or keep eye contact or attention; needs repeated stimuli (touch or voice) for attention, movement, or eye opening to voice (but no eye contact)
-4 - Can’t stay awake; Arousable but no attention; no response to voice, but movement or eye opening to physical stimulation
-5 – Unarousable; No response to voice or physical stimulation
Fluctuations of motor performance for those with hypoactive delirium (Tinetti and Trunk Control Test) Bellelli, Speciale, Morghen et al., (2011). JAMDA

Structured Assessment Process used with non-clinicians (digit span, delirium symptom interview, Memorial Delirium Assessment, CAM) Simon, Bergmann, Jones et al., (2006). JAMDA
2. Lack of Prevention

* Delirium prevention is more effective than treatment
Identify Delirium Risk Factors

Predisposing factors (vulnerability) - older age, male sex, sensory impairment, presence (and severity) of dementia, depression, functional dependence, dehydration, malnutrition, poor overall health, multiple medications, use of ETOH or benzos, metabolic abnormalities (hypernatremia, BUN/Creat ratio >17)

Precipitating factors – severe acute illness (infection or injury), 3 or more added medications, narcotics, use of physical restraint, bladder catheter, pain, surgery and/or procedures, intensive care unit admission, malnutrition, extremes in sensory experience, novel environment
Delirium Prevention Works

Reduce Incidence of Delirium by up to 40%

- Cognitive Stimulation
- Improve Sensory Input (dentures, glasses, hearing aids)
- Mobilize, Mobilize, Mobilize
- Adequate Hydration and Nutrition
- Sleep Hygiene
- Avoid Medications (particularly psychotropics)
Delirium Prevention Programs in PA/LTC

- Lack of RCTs outside of acute care settings
- Utilization of programs such as INTERACT
3. Overcoming Challenges with Evaluation and Management of Delirium
When symptoms of delirium were identified, 55 (69%) were referred to the physician or NP. An action or intervention occurred in all 55 residents.  
Morandi et al., (2009). JAMDA
### Actions Following Possible Recognition of Delirium in the Postacute Setting

<table>
<thead>
<tr>
<th>Action or Intervention</th>
<th>N=55</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pharmacological</strong></td>
<td>55 (100%)</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>16 (29%)</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>12 (22%)</td>
</tr>
<tr>
<td>Atypical Antipsychotics</td>
<td>8 (14%)</td>
</tr>
<tr>
<td><strong>Non-pharmacological</strong></td>
<td>11 (20%)</td>
</tr>
<tr>
<td>Behavioral Interventions</td>
<td>9 (16%)</td>
</tr>
<tr>
<td>Physical restraints</td>
<td>2 (4%)</td>
</tr>
<tr>
<td><strong>Assessment</strong></td>
<td>38 (69%)</td>
</tr>
<tr>
<td><strong>Transfer to ED</strong></td>
<td>19 (34%)</td>
</tr>
</tbody>
</table>

Morandi et al., (2009). JAMDA
Approach to the management of Delirium

Detect symptoms

- Confusion
- Acute onset
- Lack of attention
- Memory deficit
- Falls

Environmental triggers

- Light should be adequate (consider high lux 2000)
- Institute a nonpharmacological approach with close supervision, e.g., exercise

Restraint free

Investigate the causes

- Drugs
- Emotional (depression, psychosis)
- Low PO₂
- Ictal
- Retention of urine and feces
- Infection
- Undernutrition/dehydration
- Metabolic, e.g., hypothyroid, vitamin B12
- Subdural
- Anemia
- Pulmonary embolism
- Myocardial infarction
- Stroke

Understand resident needs

- Tolerate
- Anticipate
- Don’t Agitate

Manage with drugs as a last resort

Flaherty & Morley (2013). Delirium in the nursing home, JAMDA, 632-634
Future Work

* Improve attention testing
* Explore the impact of arousal and motor function
* Define how clinicians should test dementia superimposed on delirium using clinical information collected from family, medical record, eval of ADLs and IADLS.
* Testing interventions for delirium prevention and treatment specifically designed for PA/LTC