Delirium in the ICU: the latest evidence

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Workshop content

➤ Preventing delirium

*Risk factors*

➤ Detecting delirium

*Tools for successful diagnosis*

➤ Managing delirium

*Non-pharmacologic interventions*
What does delirium mean to you?
The Evidence

Clinical Practice Guidelines for the Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption in Adult Patients in the ICU

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Delirium

- It is an acute brain dysfunction
- 20-84% of patients experience delirium (Herling et al. 2018)
- Can be life-threatening
- Linked to poorer outcomes
- Independent predictor of mortality, ventilator days, hospitalisation & long-term cognitive impairment (Ely et al. 2004)
- Frequently overlooked, misdiagnosed, unrecognised (Patel et al. 2009)
Signs and symptoms (Ramoo et al. 2018)

- Inattention
- Disorientation
- Impaired memory
- Conscious level
- Emotional changes
- Perseveration

- Hallucinations
- Delusions
- Anxiety
- Agitation
- Restlessness
- Sleeplessness
Categorising Delirium

- Hyperactive
- Hypoactive
- Mixed
Is Delirium Preventable?

Yes

No
Risk Factors

Modifiable (Strong Evidence)

- Benzodiazepine use
- Blood transfusions

Moderate Evidence

- H/x Hypertension
- Neurological d/x
- Trauma
- Psychoactive meds

Non-modifiable (Strong Evidence)

- > Age
- Dementia
- Prior coma
- Pre-ICU surgery/trauma
- Higher APACHE/ASA scores

(Devlin et al. 2018)
Can we predict delirium?

There are validated tools capable of predicting delirium in ICU (Devlin et al. 2018)

Age, cognitive impairment, alcohol abuse, urea, admission type, MAP, Respiratory failure, med use

Think proactive not reactive
CAM-ICU

• Discussions between staff & patients/relatives may relieve distress

• Studies show delirious patients feel greater trust toward & encouragement from family members

• Early detection may benefit patients by fostering reassurance when frightening symptoms occur
What are the perceived barriers to using CAM-ICU?

Top
CAM-ICU

- Level of arousal may influence CAM-ICU (≥RASS -2)
- False-positive screening (rare)
- Burdensome
- Complex
- Difficulty with MDT
- Rapidly reversible delirium = similar to never having delirium
- Benefits of widespread delirium assessment far outweigh any potential disadvantages
Confusion Assessment Method for the ICU (CAM-ICU) Flowsheet

1. Acute Change or Fluctuating Course of Mental Status:
   - Is there an acute change from mental status baseline?  OR
   - Has the patient’s mental status fluctuated during the past 24 hours?
   \[
   \text{NO} \quad \rightarrow \quad \text{CAM-ICU negative NO DELIRIUM}
   \]
   \[
   \text{YES} \quad \rightarrow \quad \text{CAM-ICU negative NO DELIRIUM}
   \]

2. Inattention:
   - “Squeeze my hand when I say the letter ‘A.’”
   - Read the following sequence of letters:
     \text{SAVE AHAART or CASABLANCE or ABADBADAAY}
   - ERRORS: No squeeze with ‘A’ & Squeeze on letter other than ‘A’
   - If unable to complete Letters \(\rightarrow\) Pictures
   \[
   > 2 \text{ Errors} \quad \rightarrow \quad \text{CAM-ICU negative NO DELIRIUM}
   \]

3. Altered Level of Consciousness
   - Current RASS level
   \[
   \text{RASS} = \text{zero} \quad \rightarrow \quad \text{CAM-ICU positive DELIRIUM Present}
   \]

4. Disorganized Thinking:
   1. Will a stone float on water?
   2. Are there fish in the sea?
   3. Does one pound weigh more than two?
   4. Can you use a hammer to pound a nail?
   \[
   \text{Command: } \text{“Hold up this many fingers” (Hold up 2 fingers)}
   \text{“Now do the same thing with the other hand” (Do not demonstrate)}
   \text{OR } \text{“Add one more finger” (If patient unable to move both arms)}
   \]
   \[
   > 1 \text{ Error} \quad \rightarrow \quad \text{CAM-ICU negative NO DELIRIUM}
   \]
   \[
   0 - 1 \text{ Error} \quad \rightarrow \quad \text{CAM-ICU negative NO DELIRIUM}
   \]
# RASS score

**Richmond Agitation & Sedation Scale**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
<th>CAM-ICU</th>
</tr>
</thead>
<tbody>
<tr>
<td>+4</td>
<td>Combative</td>
<td>Violent, immediate danger to staff</td>
</tr>
<tr>
<td>+3</td>
<td>Very agitated</td>
<td>Pulls at or removes tubes, aggressive</td>
</tr>
<tr>
<td>+2</td>
<td>Agitated</td>
<td>Frequent non-purposeful movements, fights ventilator</td>
</tr>
<tr>
<td>+1</td>
<td>Restless</td>
<td>Anxious, apprehensive but movements not aggressive or vigorous</td>
</tr>
<tr>
<td>0</td>
<td>Alert &amp; calm</td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td>Drowsy</td>
<td>Not fully alert, sustained awakening to voice (eye opening &amp; contact &gt;10 secs)</td>
</tr>
<tr>
<td>-2</td>
<td>Light sedation</td>
<td>Briefly awakens to voice (eye opening &amp; contact &lt; 10 secs)</td>
</tr>
<tr>
<td>-3</td>
<td>Moderate sedation</td>
<td>Movement or eye-opening to voice (no eye contact)</td>
</tr>
<tr>
<td>-4</td>
<td>Deep sedation</td>
<td>No response to voice, but movement or eye opening to physical stimulation</td>
</tr>
<tr>
<td>-5</td>
<td>Un-rousable</td>
<td>No response to voice or physical stimulation</td>
</tr>
</tbody>
</table>

**CAM-ICU**

- RASS ≥ -2: Proceed to CAM-ICU assessment
- RASS < -2: STOP
- Recheck later

**Voice**

- RASS ≥ -2: Proceed to CAM-ICU assessment
- RASS < -2: STOP
- Recheck later

**Touch**

- RASS ≥ -2: Proceed to CAM-ICU assessment
- RASS < -2: STOP
- Recheck later
Pharmacology to prevent delirium?

Society of Intensive Care Medicine (2018) suggest not using Haloperidol, Dextor, or Ketamine to prevent delirium.

They also suggest not using Haloperidol to treat delirium.

So what do they suggest?
Exceptions do exist  

• Patients at risk of physical harm to themselves or others
• Short-term use of haloperidol
• Agitation precluding weaning/extubation?
• Suggest dextor for delirium

(Devlin et al. 2018)
A. Assessment prevention, & management of pain
B. Both spontaneous awakening/breathing trials
C. Choice of sedation & analgesia
D. Delirium assessment, prevention & management
E. Early mobility & exercise
F. Family engagement & empowerment

Delirium Prevention

What do you think are the non-pharmacological interventions for managing delirum?

Top
Managing Delirium

Use a multi-component, **Non-pharmacologic intervention**

- Reduce modifiable risk factors
- Improve cognition
- Optimise sleep
- Optimise mobility
- Optimise hearing
- Optimise vision
Delirium Top Tips

• Speak clearly, use fewer words, be visible
• Allow time to respond
• Don’t argue with or correct them
• Comfort them, safety
• Leave background radio/TV off
Research Required

- Family involvement
- Individual interventions of the non-pharmacological bundle
- Music therapy in reducing sedation
- Risk factors
- Impact on these involved
- Level of arousal affect on delirium
DELIRIUM IN THE ICU
Name one thing thing that you will do differently after today?

Top
References
Thank you for your time
Contact me at
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