The initiation alphabet of Rehabilitation in Intensive Care Unit

Desiree Cox
Practice Manager Life St
Dominic’s Rehabilitation Unit

Life Rehabilitation
Making life better
Assess, prevent & manage pain
- CPOT or BPS to assess pain, insure adequate pain control
- Use of regional anesthesia and nonopioid adjuncts
- Analgesia-based sedation techniques with fentanyl

Both SAT & SBT
- Daily linked SAT and SBT
- Multidisciplinary coordination of care
- Faster liberation from MV

Choice of sedation
- Targeted light sedation when sedation necessary
- Avoidance of benzodiazepines
- Dexmedetomidine if high delirium risk, cardiac surgery, MV weaning

Delirium monitoring & management
- Routine CAM-ICU or ICDSC assessments
- Nonpharmacologic intervention, including sleep hygiene
- Dexmedetomidine or antipsychotic if hyperactive symptoms

Early mobility & exercise
- Physical and occupational therapy assessment
- Coordinate activity with SAT or periods of no sedation
- Progress through range of motion, sitting, standing, walking, ADLs

Family engagement & empowerment
- Reorientation, provision of emotional and verbal support
- Cognitive stimulation, participation in mobilization
- Participation in multidisciplinary rounds
Development of critical care rehabilitation guidelines in clinical practice

- Restore lost function
- Improve quality of life on discharge
- Interventions: safe, timely and consistent
Development of critical care rehabilitation guidelines in clinical practice

The Guidelines for the Provision of Intensive Care Services (GPICS) (2015) recommend:

- Critical care units to provide rehabilitation, encompassing physical, functional, communication, social, spiritual, nutritional and psychological aspects of care using nationally agreed assessments and outcomes measures.
Development of critical care rehabilitation guidelines in clinical practice\(^1\)

- Critical care rehabilitation guidelines are needed that can act as reference for all members of the multi-disciplinary team.
Rehabilitation should start as early as clinically possible and include an individualised, structured rehabilitation programme (National Institute for Health and Clinical Excellence, 2009)
Rehabilitation should take into account physical needs as well as psychological needs and should address related symptoms, including delusional memories, anxiety, panic attacks, nightmare and depression.
Common rehabilitation challenges include:

- Lack / impaired memory of events
- Loss of time and perception
- No clarity regarding nightmares and hallucinations
- No explanations to the patient about what has happened

Improving recovery with critical care rehabilitation
Survivors of critical illness are left with significant morbidities which require prolonged physical therapy and rehabilitation.

Under utilisation of the rehabilitation program for patients in the ICU.

Physical therapy is recommended as one of the basic and essential requirements for ICU.
Mobilisation may include:

- Sitting on the bed
- Sitting on a chair
- Exercise to the limbs *(passive exercises)* whilst being mechanical ventilated, appears to improve the psychological framework of the patient and also facilitates progression of rehabilitation once they are extubated³
A multi-disciplinary approach involving:

• Nurses;
• Occupational Therapists;
• Physiotherapists;
• Dieticians;
• Speech Therapists; and
• Psychologist

are essential to provide holistic care and rehabilitation to patients in the ICU.
Early Rehabilitation in the Intensive Care Unit

Survivors of critical illness often experience new or worsening impairments of physical-, cognitive- and / or mental health, referred to as Post – Intensive Care Syndrome (PICS)
Evidence-based protocols should limit sedation and facilitate weaning from mechanical ventilation are advocated to assist with early rehabilitation.
Promising results have been obtained using the following three interventions:

- ICU diaries
- Early in-ICU psychological interventions
- Out-patient telephone-based coping skills intervention
Early rehabilitation interventions in the ICU may reduce physical and mental health complications frequently occurring in survivors of critical illness.
Potential benefits associated with early physical rehabilitation include improved muscle strength, physical function, and quality of life, and reduced healthcare costs and LOS.
Early ICU-based rehabilitation interventions are safe and feasible when conducted in the context of a multi-disciplinary team approach.
The importance of Early Rehabilitation and Mobility in ICU

- Neuromuscular weakness and impairments in physical functioning acquired during critical illness are important components of post-intensive care syndrome (PICS) 5.1-5.5
- Early rehabilitation and mobilisation are safe and reduce the physical complications of critical illness 5.6-5.11
The importance of Early Rehabilitation and Mobility in ICU

A multi-disciplinary change in the ICU culture to support early rehabilitation accompanied by selected resources, is essential to overcoming rehabilitation barriers. These include: deep sedation, inadequate ICU staffing and gaps in knowledge. 5.12-5.14
Early rehabilitation in the ICU is safe and benefits include:

- Improvement in muscle strength, functional mobility and quality of life
- Reduction of hospital costs via decreased ICU and hospital LOS
- A reduced duration of mechanical ventilation, and decreased hospital readmissions

The importance of Early Rehabilitation and Mobility in ICU

Life Rehabilitation

Making life better
Early physical and occupational therapy interventions were also associated with a greater likelihood of achieving independent function status, less ICU-acquired weakness, and unassisted walking distance at hospital discharge.
The importance of Early Rehabilitation and Mobility in ICU

Identify and address barriers:
• Deep sedation
• Accomplish a meaningful change in ICU culture
Discharge from the critical care unit is the start of an uncertain journey to recovery characterised by, among other problems:

- Weakness, loss of energy and physical difficulties, anxiety, depression, post-traumatic stress (PTS) phenomena and, for some, a loss of mental faculty (termed cognitive function)
Stroke management

- VTE risk management
- Swallowing screen protocol (dysphagia - keep NPO)
- Upright in bed to 45 degrees if stable
- Refer to Rehabilitation team:
  - Physiotherapist
  - Speech Therapist
  - Occupational Therapist
  - Dietician
Stroke management (continued)\(^7\)

- Staff to treat patient approaching from the affected hemiplegic side
- Start mobilisation in the bed or chair
- Early Foley’s catheter removal and early bladder management
- Stroke education material provided to patient and family
Activity and Functional Assessments

- Assess patient for risk of falling
- Mobilise patient (when appropriate and physically tolerated)
- Rehabilitation assessment as soon as possible after admission
Activities of Daily Living

- Eating
- Grooming
- Dressing
- Washing
- Toileting
Swallow assessment and nutrition

Observe and assist patient during meals:

• If dysphasia or abnormal swallowing is noted, consult a speech therapist
• Initiate appropriate diet and texture
• Educate the patient accordingly
Swallow assessment and nutrition

- Consider inserting a Oro-gastric / nasogastric feeding tube (do not insert within 24 hours post tPA)
- Monitor hydration status
- Monitor intake and output
Cognitive Assessments

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?
   - Yes ➔ CAM-ICU negative NO DELIRIUM
   - No ➔ Go to Inattention

2. Inattention:
   - “Squeeze my hand when I say the letter ‘A’.”
   - Read the following sequence of letters: SAVE A HAART or CASABLANCA or ABAABDADAAY ERRORS: No squeeze with ‘A’ & Squeeze on letter other than ‘A’
   - If unable to complete Letters → Pictures ➔ > 2 Errors
   - 0 - 2 Errors ➔ CAM-ICU negative NO DELIRIUM

3. Altered Level of Consciousness
   - Current RASS level
   - RASS = zero ➔ CAM-ICU positive DELIRIUM Present
   - RASS other than zero ➔ Go to Disorganized Thinking

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?
   - Command: “Hold up this many fingers” (Hold up 2 fingers)
   - “Now do the same thing with the other hand” (Do not demonstrate)
   - OR “Add one more finger” (If patient unable to move both arms)
   - > 1 Error ➔ CAM-ICU negative NO DELIRIUM
   - 0 - 1 Error ➔ CAM-ICU positive DELIRIUM Present

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<table>
<thead>
<tr>
<th>Instrument</th>
<th>Features Assessed</th>
<th>Time Period</th>
<th>Scoring</th>
<th>Assessor</th>
<th>Comparator</th>
<th>n</th>
<th>Results</th>
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</thead>
<tbody>
<tr>
<td>Confusion Assessment Method for the ICU</td>
<td>Acute changes or fluctuation in mental status, inattention, disorganized thinking, altered level of consciousness</td>
<td>Short moment in time assessment</td>
<td>Positive or negative research nurses</td>
<td>Psychiatric expert assessment with DSM-IV criteria</td>
<td>111</td>
<td>100 and 93% sensitivities, 98 and 100% specificities</td>
<td></td>
</tr>
<tr>
<td>Intensive Care Delirium Screening Checklist</td>
<td>Altered level of consciousness, inattention, disorientation, psychosis, altered psychomotor activity, inappropriate speech/mood, sleep disturbance, and symptom fluctuation</td>
<td>Assessment over nursing shift or day</td>
<td>0–8</td>
<td>Research team members completed checklist for 24-h periods</td>
<td>Psychiatric expert assessment with DSM-IV criteria</td>
<td>93</td>
<td>99% sensitivity and 64% specificity if ≥ 4 features</td>
</tr>
<tr>
<td>Cognitive Test for Delirium</td>
<td>Orientation, attention span, memory, comprehension and conceptual reasoning, and vigilance</td>
<td>Longer moment in time assessment</td>
<td>0–30</td>
<td>Psychologist technician</td>
<td>Psychiatric expert assessment with DSM-III criteria</td>
<td>103</td>
<td>100% sensitivity and 95% specificity if score ≥ 18</td>
</tr>
<tr>
<td>Abbreviated Cognitive Test for Delirium</td>
<td>Visual attention span, recognition memory</td>
<td>Short moment in time assessment</td>
<td>0–24</td>
<td>Psychologist technician</td>
<td>Psychiatric expert assessment with DSM-III criteria</td>
<td>100</td>
<td>95% sensitivity and 99% specificity if score ≤ 10</td>
</tr>
<tr>
<td>Delirium Detection Score</td>
<td>Agitation, anxiety, hallucination, orientation, seizures, tremor, paroxysmal sweating, altered sleep-wake rhythm</td>
<td>Longer moment in time assessment</td>
<td>0–56</td>
<td>Clinical physicians and nurses</td>
<td>Sedation-Agitation Scale and defined clinical assessment</td>
<td>1,073</td>
<td>69% sensitivity and 75% specificity if score ≥ 8</td>
</tr>
<tr>
<td>Neelon and Champagne Confusion Scale</td>
<td>Attention, command, orientation, appearance, motor, verbal, vital function, oxygen saturation, urinary continence</td>
<td>Short moment in time assessment</td>
<td>0–30</td>
<td>Clinical nurses</td>
<td>Psychiatric expert assessment with DSM-IV criteria</td>
<td>105</td>
<td>97% sensitivity and 93% specificity if score ≤ 24</td>
</tr>
<tr>
<td>Nursing Delirium Screening Scale</td>
<td>Disorientation, inappropriate behavior, inappropriate communication, hallucination, psychomotor retardation</td>
<td>Assessment over nursing shift or moment in time assessment</td>
<td>0–10</td>
<td>Research physicians and nurses</td>
<td>Psychiatric expert assessment with DSM-IV criteria</td>
<td>156</td>
<td>82% sensitivity and 83% specificity if score ≥ 2</td>
</tr>
</tbody>
</table>

Seven instruments have been validated to assess for delirium in critically ill patients. These instruments vary in the features assessed, time of assessment, scoring scale, and validation. The Society of Critical Care Medicine's Pain, Agitation, and Delirium guidelines recommend the Confusion Assessment Method for the Intensive Care Unit (ICU) or Intensive Care Delirium Screening Checklist for routine monitoring of delirium in the ICU.

*Assessed delirium versus dementia, depression, and schizophrenia and not delirium versus normal mental status or coma.

DSM = Diagnostic and Statistical Manual of Mental Disorders.
Continence:

- Avoid indwelling catheter
- Monitor patient for urinary incontinence or retention
- Initiate a bladder training program
Continence\(^7\) (continued):

- Monitor patient for constipation or bowel incontinence
- Implement a bowel training program for patients with constipation or bowel incontinence
Project in process – Measuring and cutting boxes
Project in process – Tearing of paper
Final product:
Final product in use:
Aqua therapy may still continue regardless of indwelling tubes/catheters
References:


   3.3 Rehabilitation after critical illness. NICE clinical guidelines 2009; No. 84.
References (continued):


References (continued):


References (continued):


7. Boehringer Ingelheim presentation, BI Ref No. 417/2015 (Aug 15). Acute Ischaemic Stroke In-Hospital Treatment
Life is an opportunity, benefit from it.
Life is beauty, admire it.
Life is bliss, taste it.
Life is a dream, realize it.
Life is a challenge, meet it.
Life is a duty, complete it.
Life is a game, play it.
Life is a promise, fulfill it.
Life is sorrow, overcome it.
Life is a song, sing it.
Life is a struggle, accept it.
Life is a tragedy, confront it.
Life is an adventure, dare it.
Life is luck, make it.
Life is too precious, do not destroy it.
Life is life, fight for it.

Mother Teresa