Nutrition and Delirium

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Abstract

Delirium is a common and serious complication in hospitalised older people. Poor nutrition and hydration are both risk factors for, and consequences of, delirium. This chapter will discuss the phenomenology of delirium and the role of nurses in recognising, preventing and managing this serious complication. It will also provide practical strategies to support nutrition and hydration in patients with, or at risk of, delirium.

Keywords

Delirium · Cognitive impairment · Prevention of delirium · Malnutrition · Mealtime care

Learning Outcomes

At the end of the chapter, and following further study, you will be able to:

- Describe the experience and consequences of delirium.
- Recognise common risk factors for delirium.
- Recognise how adequate nutrition and hydration can assist delirium prevention.
- Implement strategies to improve nutrition and enable mealtime care in patients with, or at risk of, delirium.

19.1 What Is Delirium?

Delirium is a distressing and serious acute neuropsychiatric syndrome which can complicate acute illness, surgery or injury. Delirium is common, affecting 8–17% older emergency department patients, 18–35% of older medical inpatients and 11–51% older surgical inpatients, up to 82% of intensive care patients and up to 75% patients at the end of life [1, 2]. The core diagnostic features are inattention and disturbance of consciousness, with an acute change in cognition (e.g. memory, orientation, language, reasoning or perceptions) due to a medical condition, medication and/or intoxicating substance [3]. Examples of these features and how they can be assessed are provided in Table 19.1. Structured tools to assess these features (e.g. the “4 A’s test” [4] or the Confusion Assessment Method [5]) improve recognition of delirium. This is important because delirium is frequently missed by clinical staff, as presenting symptoms can be subtle and variable [6].

Delirium often results in difficulties in understanding information provided and can include disturbing misperceptions and hallucinations. These experiences can result in fear and distress for the patient [7], which may be difficult to communicate due to language impairments. These features can lead to behaviours such as poor cooperation with instructions, agitation and aggression, which are characteristic of “hyperactive” delirium. This is understandably distressing to staff and

Table 19.1 Assessing clinical features of delirium

Disturbance of consciousness and inattention (observe during assessment)	Are they drowsy or hypervigilant? Do they have trouble following your questions or become easily distracted? Simple attention tests include the “months of the year backwards”
Change in cognition (use brief cognitive screening)	Disorientation: Do they know the day, time and place? Memory: Do they have trouble recalling recent events? Language: Are their answers very sparse, or do their ideas keep wandering off? Perceptions: Do they seem distracted by sounds or sights that you cannot see or hear?
Acute fluctuating course (take a collateral history)	Have people familiar with the patient (e.g. family members, general practitioner, nursing home staff or community services) noticed a recent change in thinking or behaviour?
Evidence of underlying medical condition, medications or intoxicant	Thorough history, examination and investigations targeting precipitating factors (see Table 19.2)

family trying to provide care and can result in the use of restraint or sedation, which carry risks of serious iatrogenic harm [8]. Delirium can also lead to apathy, disorientation, daytime somnolence and motor slowing (“hypoactive” delirium), which is commonly missed, increasing the risk of pressure injury, deconditioning, venous thromboembolism, aspiration pneumonia and other immobility-associated harm. Many patients fluctuate between hypoactive and hyperactive presentations. Both hypoactive and hyperactive delirium increase mortality by 2–3 times, increase the need for services after hospital discharge and are associated with increased future risk of dementia [9].

19.2 Who Is at Risk?

Douglas is a 77-year-old man admitted to your unit with a urinary tract infection and abdominal pain due to urinary retention. He has a range of medical conditions including depression, hypertension, diabetes and chronic kidney disease and is on eight medications. Douglas wears glasses to correct his poor vision and has bilateral hearing aids. His daughter mentions that Douglas has recently been having trouble with his memory and needs help with shopping and preparing meals and he became very confused when he was in hospital a few months ago. During your assessment, you identify that Douglas has recently lost weight without trying and has been eating and drinking less than usual. He also reports being more weak and tired than usual.

This case represents a typical older person presenting to hospital at risk of malnutrition (indicated by weight loss and reduced intake) and with a number of risk factors for developing delirium (Table 19.2) [1, 9–11]. These two conditions often go hand in hand. Both malnutrition and dehydration have been recognised as risk factors for developing delirium [12, 13], perhaps not surprisingly considering the high metabolic requirements of the brain and the need for reliable brain blood flow [14–16]. However, delirium also increases the risk of poor oral intake [17, 18], potentially creating a vicious circle [19]. Malnutrition should be screened at admission using a validated tool (e.g. malnutrition screening tool [MST] [20], nutrition risk screening [NRS 2002] [21], malnutrition universal screening tool [MUST] [22]) (Chap. 3). Screening should be repeated weekly, as the risk of developing malnutrition increases with longer hospital stays.

All hospital inpatients aged 65 and older, or with known cognitive impairment (e.g. dementia) or experiencing very serious illness or injury (including hip fracture and major operations), should be recognised as high risk for delirium [11, 23, 24]. They should receive routine screening using a validated delirium screening tool on admission to hospital and be rescreened whenever their condition or behaviour changes. If the screen is positive, a trained professional (e.g. doctor, nurse practitioner or occupational therapist) should assess them to formally confirm delirium, and their medical team must urgently investigate the underlying cause [23, 24] (Table 19.2).

Table 19.2 Delirium risk factors [1, 10]

Delirium is often multifactorial in its cause. Predisposing and precipitating factors for our case study are illustrated with an asterisk (*)	
Predisposing factors	<ul style="list-style-type: none">• Age older than 65 years*• Cognitive impairment (e.g. dementia) or previous delirium*• Frailty and functional dependency*• Sensory impairment*• Comorbidities (e.g. chronic or end-stage heart, lung or kidney disease)*• Multiple medications*• Previous alcohol misuse
Precipitating factors	<ul style="list-style-type: none">• Dehydration*• Medications, especially sedatives (e.g. benzodiazepines, anticholinergics, antipsychotics)• Infection*• Malnutrition*• Pain*• Hypoxia• Metabolic disturbances (e.g. hyponatraemia, hypernatraemia, hypercalcaemia)• Any serious illness (e.g. myocardial infarction, hip fracture) or major operation
Perpetuating factors	<ul style="list-style-type: none">• Restraints (e.g. indwelling catheter, intravenous lines, oxygen therapy)*• Sleep deprivation• Poor food and fluid intake*• Disorientating environment (e.g. no clock or window, unfamiliar routines, frequent bed moves)

Nurses are ideally placed to identify risk of malnutrition and delirium, and screening for these conditions should be integrated into standard nursing assessment, care planning and mealtime processes. Including validated screening tools within admission paperwork and daily care planning templates may support routine screening [18]. It is important that other members of the care team (doctors, allied health professionals) are also trained to identify malnutrition, poor intake and changing cognition, to ensure the whole team remain vigilant and cooperate to institute appropriate prevention and management strategies [23].

19.3 What Can Be Done to Prevent and Manage Delirium?

Douglas scores 2 on the 4 A's test which indicates cognitive impairment (but not delirium), and he is identified at risk of malnutrition according to the MST. He appears dehydrated. The doctor starts antibiotics and fluids through the intravenous catheter, inserts an indwelling catheter to relieve his urinary retention and prescribes low-dose oral opiates for his abdominal pain. His daughter is worried he will become very confused like last time he was in hospital and asks if there is anything you can do to protect him.

There are no drugs demonstrated to either prevent or treat delirium [24–26]. Multicomponent multidisciplinary prevention programs can reduce delirium by 30–50% in hospital settings [27, 28]. These programs focus on optimising nutrition and hydration, mobility and engagement in meaningful activities [29], as well as managing pain, managing sleep disturbance and reducing or eliminating inappropriate medications [30]. Nurses have the key role in delivering these fundamental cares, but they are often missed in busy complex acute wards [31, 32]. Structured, systematic programs can support ward teams, such as the well-established Hospital Elder Life Program [33] to implement multidisciplinary strategies that support delirium prevention. These programs require some investment but appear to be cost-effective [34]. The same principles are important for safe and patient-centred management of patients who have developed delirium, although evidence that multicomponent intervention reduces the duration or severity of delirium is lacking. The keys to managing delirium are identifying and reversing all medical causes (Table 19.2) and providing good fundamental care. Unfortunately, nurses also need to be aware that treatments can sometimes also perpetuate the delirium (Table 19.2). For example, in our case study, the intravenous therapy and indwelling catheter are restraints which can be distressing and reduce mobility, while opiates relieve pain but can be sedating. Constant review for the need for continuing such therapies is essential.

Poor food and fluid intake are important precipitating and perpetuating factors for delirium (Table 19.2). Maintaining food and fluid intake is a central strategy within delirium prevention programs [19, 24]. However, this can be challenging in people with cognitive impairment [35] and/or severe illness (which are important

delirium risk factors) and even more so in people with established delirium. Nurses should anticipate the assistance that patients with, or at risk of, delirium may require and factor these into their daily workflow planning (Table 19.3). Adequate mealtime preparation including the relief of pain and nausea, timely toileting and appropriate positioning may require coordinated assistance from other team members (e.g. medical staff, physiotherapist, patient support officer) in advance of meal delivery. Nurses need to be present on the ward during mealtimes, to provide encouragement, anticipate and instigate assistance and advocate for their patients by discouraging other team members from interrupting patients during their meals (except for urgent clinical interventions) [36]. Food and fluid intake should also be monitored and

Table 19.3 Optimising mealtime care for people with delirium

Maximise comfort	<p>Take your patient to the toilet before the meal arrives</p> <p>Make sure dentures are in and well fitting</p> <p>Provide analgesia or anti-nausea medications before meals as required, and avoid sedative medications before meals</p> <p>Ensure adequate lighting and put spectacles on</p> <p>Position upright, ideally sitting in a chair, with a clutter-free meal space</p> <p>Provide water or suitable liquids to moisten foods, especially if the patient has dry mouth or trouble swallowing</p> <p>Create a pleasant environment (e.g. soft music)</p>
Provide cues	<p>Orientate your patient: “Good morning! It’s a lovely spring day today. Here is your breakfast”</p> <p>Remove covers and wrappings to make it easy to see the meal and allow food aromas to stimulate appetite</p> <p>Some people may need verbal prompts or hands-on cues, e.g. cutlery placed in their hands, or prompts to reload their fork between mouthfuls</p> <p>Eating with someone else (family or other patients) can help as it provides social context and mirroring</p> <p>Families may be able to bring favourite food items in</p>
Maintain focus	<p>Minimise distractions (e.g. turn off the television)</p> <p>Minimise unnecessary interruptions during the meal</p> <p>It may help to serve one meal element at a time to reduce confusion (e.g. just put the main meal on the tray)</p> <p>Start with preferred and/or high-energy components for patients with fatigue or inattention even if that means ice cream first!</p> <p>Provide verbal encouragement, reassurance and verbal/physical prompts</p> <p>Talk about familiar topics</p>
Maximise independence	<p>Assist meal choices if needed (e.g. enquire about and document favourite foods where all team members can access the information)</p> <p>Adjust the height and position of the tray to optimise hand function, strength and reach</p> <p>Help set up if required, e.g. opening packets or containers and cutting foods into manageable pieces</p> <p>Order finger foods if the patient has trouble using cutlery</p> <p>Allow plenty of time for the patient to finish their meal</p> <p>Provide modified cutlery, plate guards and alternative cups (i.e. non-spill, those with handles or straws) where needed</p> <p>Provide straws where needed</p>
Monitor intake	<p>Take note of the amount eaten, the types of food preferred and the reasons for not eating and discuss with your clinical dietitian to try to tailor meals</p>

documented at every meal to allow early identification of poor intake in this high-risk group, as malnutrition screening tools do not accurately identify patients with poor intake [37]. It is common for people with delirium to miss meals because they are asleep or too unsettled or disoriented to complete the task of eating. It is important that ward staff have access to a variety of food and drinks available outside of set mealtimes to ensure that patients can catch up on missed meals once they are awake and feeling more settled (Chaps. 3–5).

Mealtimes also have important social and existential meaning [38] and serve as an orientating stimulus to help with delirium prevention. However, inflexible routines, eating alone and unfamiliar foods may detract from this. Patients value familiar routines and networks of support and encouragement from their health team as well as from their families and other patients [39]. Making opportunities for shared dining experiences and inviting family presence at mealtimes can help to normalise the mealtime experience and may improve intake [40, 41]. Volunteers and healthcare assistants may also have a role in mealtime assistance and improving the mealtime experience [42–44].

You have been monitoring Douglas' food and fluid intake and have observed that he has been eating and drinking poorly for the past 3 days. In particular, you've noticed that he is hard to wake up for his meals, preferring to sleep through his meals. When he is eating, he has trouble feeding himself. When you help him with his meal, you notice that he is slow to chew and swallow and often falls asleep sitting in the chair. He has consumed less than one third of his meals and still requires intravenous therapy to maintain his fluid status. You report your concerns to the doctor, who examines Douglas and confirms that he has hypoactive delirium. The doctor stops the opiates and rechecks his kidney function and electrolytes. You wonder if nasogastric tube feeding would help his recovery.

19.4 The Role of Enteral Feeding

Considering that maintaining adequate nutrition and hydration plays such an important role in preventing and treating delirium as well as other conditions, it may be appropriate to consider enteral feeding via a nasogastric tube if the patient is unable to eat and drink enough to meet their nutritional needs. Despite attempting to improve mealtime cares, the patient may not meet their needs because they are too drowsy or have developed a functional dysphagia, which is common in delirium [45, 46]. Enteral feeding can improve intake and possibly prevent poor clinical outcomes [47]. However, the risks of tube feeding and its placement must be weighed against the benefits of adequate nutrition. As an additional tether, it may perpetuate or cause delirium [48], and it may cause distress for patients and frustration for nursing staff if the patient repeatedly dislodges or removes the nasogastric tube. It is not appropriate to provide physical or chemical restraints to facilitate enteral feeding, as the deconditioning caused by immobility runs counter to the aims of nutrition therapy to maintain muscle mass [19].

Decision-making about enteral feeding for a patient with delirium is complex and must be individualised in line with patient goals and the prognosis of the underlying conditions (Chap. 21). It requires the involvement of the multidisciplinary team, including the dietitian, speech pathologist and medical staff, as well as the family or other appropriate decision-makers [19]. Appropriate positioning of the patient remains important to reduce the risk of aspiration, and the use of bolus rather than continuous feeds may be more appropriate, to reduce restraint utilisation and limitations to mobility. Strategies to reduce the risk of dislodgement include the use of fiddle blankets and other distracting activities. If it is safe, continuing to provide even small amounts of oral intake when the patient is more alert and able to sit upright will help promote swallow function and appetite and can provide pleasure and maintain meaningful routines. The feeding tube should be removed as soon as adequate oral intake can be re-established.

Through good nursing care and multidisciplinary teamwork, Douglas makes a good recovery despite his delirium, which resolves over time. As expected, he has lost significant muscle mass and strength and needs in-centre rehabilitation to regain function before going back to his home.

19.5 Post-Hospital Support

Delirium in the post-acute and rehabilitation setting is prevalent, persistent and associated with poor functional recovery [49]. This highlights the need for vigilance with delirium prevention and screening across the continuum of care in order to promote optimal post-hospital cognitive and functional recovery. This includes paying attention to the nutritional intake and status of patients on discharge from hospital, as ongoing nutritional decline in the community setting is common [50]. Engaging and supporting caregivers and family in discharge planning and ongoing nutritional care, meeting unmet needs by referring to community health and support services for practical assistance with shopping and meal preparation, providing oral nutrition supplements (if well accepted) and ensuring nutritional monitoring and follow-up in the community are key strategies to optimise recovery after hospitalisation [51, 52]. Discharge planning should include the patient, carers and other healthcare professionals, incorporating referrals to community health and support services where required, and should be documented clearly and received by community providers within 24 h of hospital discharge.

19.5.1 Summary and Main Points

- Delirium is a common complication especially in older inpatients. It causes distress to patients and their carers and has important negative consequences for health and healthcare needs.

- Dehydration and malnutrition are risk factors for delirium, along with age, frailty cognitive and sensory impairment and serious illness.
- Effective prevention programs can reduce delirium by 30–50% but require multiple integrated components, including supporting good nutrition and hydration.
- Nurses need to adapt their practice to support good nutrition and hydration for patients with cognitive impairment to meet their needs and ensure adequate intake.

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