



DELIRIUM

Malaysian Society of Geriatric Medicine
Position Statement



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OBJECTIVES

This position statement on delirium is intended for any healthcare professionals who may encounter patients with delirium in their clinical practice.

The goal of this position statement is to provide a concise and practical guide to the assessment, diagnosis and management of delirium, with specific attention to current challenges within the Malaysian healthcare setting. We hope that this position statement may serve as a reference for nursing and medical curriculum developers, heads of department, policy makers and hospital administrators.

This guideline only applies to the adult population (age 18 and over), and is not meant to be applicable to those receiving end-of-life care or who are intoxicated and/or withdrawing from drugs or alcohol.

EXECUTIVE SUMMARY

- Delirium, also called "acute confusional state", is a clinical syndrome characterised by disturbed cognitive function, perception or consciousness, that has an acute onset and fluctuating course.
- Delirium may result from a wide variety of structural or physiological insults.
- Risk factors for delirium can be divided into predisposing factors (pre-existing conditions) and precipitating factors (acute insults).
- Cognitive assessment should be performed on persons at risk using validated tools where available.
- It is mandatory to look for the predisposing and precipitating cause(s) once delirium is diagnosed.
- Delirium is an acute brain failure and must be handled as a medical emergency. Management of delirium is based on the following principles:
 - Prevent delirium by avoiding/eliminating precipitating factors
 - Recognise delirium
 - Treat delirium by resolving the precipitating factors
 - Support the person with delirium to prevent further physical and cognitive decline
 - Manage accompanying disruptive behaviours

- Family and carers should be involved in all aspects of delirium management and prevention.
- Pharmacological measures include:
 - Treatment of the precipitating cause(s) of delirium
 - As a last resort in managing distressing symptoms
- Physical restraints should only be used when there is reasonable belief that less restrictive measures have been determined to be ineffective. The rationale for restraint use must be documented. Patients should be monitored for the development of complications from restraining therapies. Orders for restraining therapy should be limited in duration to a 24-hour period, at which time a re-evaluation is required. Restraint must be discontinued at the earliest possible time.
- To minimise disruption of treatment or removal of devices by the patient:
 - Consider if the intervention / treatment / device is necessary or can be discontinued.
 - Consider alternative routes of administration.
 - Diversion of attention of the patient should be attempted.
- Patients who are admitted to the hospital require routine falls risk assessment irrespective of their delirium status. All intrinsic and extrinsic risk factors for falls should be identified and mitigated. Multifaceted interventions focusing on all the modifiable risk factors are recommended.

DEFINITION

Delirium, also called "acute confusional state", is a clinical syndrome characterised by disturbed cognitive function, perception or consciousness, that has an acute onset and fluctuating course.[1-4]

EPIDEMIOLOGY AND THE IMPACT OF DELIRIUM

The prevalence of delirium increases with age, most dramatically over the age of 65, and varies in different settings. The prevalence of delirium among patients aged 65 years and above admitted to medical wards at a large teaching hospital in Malaysia is 26.4%, and among those aged 85 years and above, the prevalence is 56%. Published estimates from other countries have suggested incidence rates of 6 to 56% among general hospital populations.[5,6] Delirium occurs in 15 to 53% of older patients postoperatively,[5] 70 to 87% of those in the intensive care [7] and up to 83% at the end of life.[8] Up to 60% of patients in nursing homes or post-acute care settings have delirium.[9,10] In 10-30% of older patients presenting to emergency departments, delirium is a symptom [5] that often heralds the presence of life-threatening conditions.

Delirium is associated with more hospital-acquired complications such as urinary incontinence, pressure sores, higher falls rate, and worse outcome measures such as longer hospitalisation. It is associated with higher levels of dependency after discharge, higher rates of institutionalisation, and higher mortality. Among hospitalised patients with delirium, the mortality rates range from 22-76%. The one year mortality rate associated with cases of delirium is 35-40%.[11-20]

Development of delirium increases the utilization of health care resources. A study showed that the 1-year health care cost after development of delirium was significantly higher.[21]

A study involving a three-year follow-up period, found that many individuals who first presented with delirium subsequently developed dementia.[22]

PATHOPHYSIOLOGY

Delirium may result from a wide variety of structural or physiological insults.

Explanation

It is hypothesised that delirium occurs as the result of reversible impairment of cerebral oxidative metabolism and multiple neurotransmitter abnormalities involving acetylcholine, dopamine, serotonin, gamma-aminobutyric acid, cortisol, beta-endorphin and melatonin.[23] Other proposed mechanisms include insults to the reticular formation and disruption of the blood brain barrier due to inflammatory cytokine release, stress reaction and structural damage. Although many neurotransmitters may be involved, acetylcholine deficiency and/or excess of dopamine are considered the most important. Electroencephalogram and neuroimaging studies have demonstrated predominantly right-sided dysfunction in the prefrontal cortex, thalamus, fusiform cortex, posterior parietal cortex, and basal ganglia.[24] Hypothalamic-pituitary-adrenal axis abnormalities have also been described in dementia and delirium.[25]

RISK FACTORS

Risk factors for delirium can be divided into predisposing factors (pre-existing conditions) and precipitating factors (acute insults).

Explanation

Those with more predisposing factors can develop delirium with just a minor insult, and those with less predisposing factors may develop delirium with major insults or multiple insults. For instance, Inouye et al. in 1998 found that dehydration doubles the risk of delirium whilst visual impairment, severe illness and dementia, each treble the risk. Among those with 3 to 4 risk factors, 83% developed delirium compared to 9% among those without any risk factor.[26]

Predisposing factors [26-29]

- Age 65 years or older
- Dementia and/or previous delirium
- Frailty
- Polypharmacy
- Visual impairment
- Hearing impairment
- Functional disability
- Alcohol abuse
- Depression

Precipitating Factors [30]

- Use of physical restraints
- Malnutrition
- Drugs
 - psychoactive drugs
 - anticonvulsants
 - sedatives and hypnotics
 - polypharmacy
- Use of bladder catheter
- Infection
- Stroke
- Seizures
- Hip fracture
- Surgery
- Physiological disturbances
 - Electrolytes derangement
 - Metabolic disturbances
 - Pain
 - Constipation
 - Urinary retention
 - Dehydration
- Change of environment (includes inter and intra ward moves)
- Any iatrogenic event

CLINICAL FEATURES OF DELIRIUM [31-32]

Acute onset	It occurs abruptly usually over a period of hours or days. It is important to establish that the symptoms are new phenomenon. Collateral history is imperative.
Fluctuating course	Symptoms and severity change over the course of the illness with presence of lucid intervals.
Inattention	A person with delirium is easily distractible and has difficulty to focus, sustain and shift attention, as well as to maintain conversation or follow commands.
Altered social behaviour	There is lability of mood or attitude with symptoms such as fear, paranoia, anxiety, depression, irritability, apathy, anger, euphoria and others. These may lead to poor co-operation and altered communication (e.g. abusive language).

Disorganised thinking	The speech may be disorganised or incoherent with an unclear or illogical flow of ideas. Thought processes may be slowed.
Altered perception	Delusions or hallucinations are often present.
Altered level of consciousness	There is disturbance of consciousness, with reduced clarity of awareness of the environment.
Altered sleep-wake cycle	Typically, there is daytime drowsiness, night time insomnia, fragmented sleep or sleep cycle reversal.
Altered activity	Hyperactivity (wandering, motor restlessness, falls risk) or/mixed with hypoactivity (drowsiness, reduced mobility and/or appetite).
Cognitive deficits	Deficits in cognition such as disorientation, memory deficits, and or language impairment may occur.

Delirium subtypes

Delirium subtypes were first described by Lipowski [33] relating to psychomotor activity or level of arousal of the person. They include '**hyperactive subtype**' characterised by: heightened arousal, restlessness, agitation and aggression and the '**hypoactive subtype**' characterised by: sleepiness, lack of interest in daily activities, and being quiet and withdrawn. Delirium without agitation occurs in >50% of those with delirium. The '**mixed form**' has alternating features of both. Hypoactive and mixed delirium can be more difficult to recognise.

DELIRIUM DETECTION/SCREENING TOOLS

Cognitive assessment should be performed on persons at risk using validated tools where available.

Explanation

Collaborative information from family or carers is imperative to help distinguish between dementia, delirium and delirium on a background of dementia. The performance of cognitive assessment on the patients admitted to hospital, who are at risk of delirium should be part of routine clinical practice, [31,32,34]

as many cases of delirium are undiagnosed.[35] A useful strategy to improve the rate of detection of delirium is to regard cognitive states as the 6th vital sign. A brief cognitive screen should be conducted at presentation and needs repeating if there is change in the patient's status. It should be performed to monitor the resolution of delirium once detected and before discharge.

A handful of bedside-screening tools have been validated to detect delirium.[36-38] The Confusion Assessment Method (CAM) is widely used and has a sensitivity of > 94% and specificity of > 90% in delirium detection in its source population. The Rapid Assessment Test for Delirium (4AT) is an emerging tool that is brief, allows for assessment of 'untestable' patients where cognitive testing or interview is not possible because of drowsiness or agitation. The 4AT has high sensitivity (87-100%) and specificity (70-84%) for delirium detection.[39-40] The tools are not comparable as they were validated in different populations.[41] Once abnormal cognition is detected, a detail assessment to determine the cause should be performed.

DIAGNOSIS

It is mandatory to look for the predisposing and precipitating cause(s) once delirium is diagnosed.

Explanation

The key diagnostic features of delirium are:

- An acute onset and fluctuating course
- Disturbance in attention
- Objective evidence of cognitive deficit
- Presence of precipitating factor(s)

Patients with confusional states are unable to provide an accurate history. Therefore, collateral history is crucial. Communication between staff from different disciplines is essential to avoid unnecessary repetition of information gathering.

A full physical examination should be performed, paying particular attention to the following areas:

- Neurological examination (including assessment of speech)
- Fever
- Nutritional and hydrational status
- Evidence of alcohol abuse or withdrawal
- Cognitive function using a standardised screening tool e.g. CAM, 4AT etc

Investigations should be guided by clinical assessment and the most probable cause(s):

- Full blood count
- Calcium
- Urea and electrolytes
- Liver function tests
- Glucose
- Thyroid function tests
- Chest X-ray
- Electrocardiogram
- Blood cultures
- Urinalysis
- Lumbar puncture if meningitis or encephalitis is suspected

Delirium precipitation is usually multifactorial and is usually due to causes outside of the central nervous system. Therefore head CT-scan is rarely necessary unless there are new focal neurological signs, head injury, fall on anticoagulants, or no cause can be found.

DIFFERENTIAL DIAGNOSES

- Dementia (sundowning)
- Psychiatric Illness, e.g. depression, mania, schizophrenia
- Pathological lesion in the brain
- Non-convulsive seizures

PREVENTION AND MANAGEMENT

Delirium is an acute brain failure and must be handled as a medical emergency.

Management of delirium is based on the following principles:

1. Prevent delirium by avoiding/eliminating precipitating factors
2. Recognise delirium
3. Treat delirium by resolving the precipitating factors
4. Support the person with delirium to prevent further physical and cognitive decline
5. Manage accompanying disruptive behaviours

Family and carers should be involved in all aspects of delirium management and prevention.

Explanation

Prevention and management strategies are basically the same. Risk factors and precipitants overlap and risk factors can become precipitants. Prevention is geared towards physical, environmental, cognitive and social aspects.[42,43]

Physical	Environmental	Cognitive / Social
<ul style="list-style-type: none"> ● Adequate hydration and nutrition ● Provide visual / hearing aids ● Adequate pain relief ● Avoid / treat constipation ● Encourage early mobilisation ● Avoid restraint ● Avoid urinary catheterisation ● Encourage a regular sleep pattern ● Avoid unnecessary sedation/ antipsychotic/ anticholinergic drugs ● Review all medication and minimise as far as is safely possible 	<ul style="list-style-type: none"> ● Communicate clearly with the patient (state who you are and what you wish to do) ● Good lighting ● Quiet environment ● Avoid unnecessary change of bed / ward ● Continuity of nursing and medical care (familiar personnel where possible) 	<ul style="list-style-type: none"> ● Encourage frequent visits by family and friends ● Promote orientation ● Do not argue with the individual ● Cognitively stimulating activity

A prospective, individual matching controlled clinical trial of multicomponent interventions by Inouye et.al, involving 852 medical ward patients aged 70 years and above found that the delirium rate was 9.9% in the intervention group compared to 15% in those receiving standard care. The length of delirium illness was also significantly shortened by nearly two months.[44] Marcantonio et.al, evaluated multimodal non-pharmacological intervention among 126 older patients admitted to an orthopaedic ward with hip fractures. Those randomised to intervention received proactive geriatric consultation with targeted multimodal interventions while the control group received usual care. Incidence rate and severity of delirium were significantly lower in intervention group compared to usual care group, with a relative risk reduction of 36%.[45] Note: These interventions should be tailored to the individual's needs and mostly amount to good basic care and so are not costly.

The prevailing idea is that "severe" delirium is associated with hyperactive, disturbed patients. However, the reality is that these patients have better outcomes than patients who are hypoactive.[46] Liptzin and Levkoff in 1999 reported increased duration of hospitalisation and increased mortality in hypoactive patients.[47] Therefore, nursing policy must be in place to ensure that patients with hypoactive delirium are properly observed, stimulated, adequately fed, hydrated, and provided with good continence care.

PHARMACOLOGICAL MANAGEMENT OF SEVERE SYMPTOMS IN DELIRIUM

Pharmacological measures include:

- **Treatment of the precipitating cause(s) of delirium**
- **As a last resort in managing distressing symptoms of delirium**

Explanation

Early treatment of the precipitating factors will speed resolution of delirium and help to lessen distress in the individual. By identifying behaviours and circumstances that precipitate distress / behavioural disturbance in the person with delirium, non-pharmacological strategies can be utilised to de-escalate the situation.[48] Note: Consider how you or the environment may be making the situation worse.

No medication is currently approved in the management of delirium. However, a few guidelines have suggested the use of pharmacological therapy when the individual's behaviour is either a danger to themselves or others.[49-56] Before prescribing any pharmacological therapy consider that sedating the individual may increase their distress, their risk of injury, falls,

incontinence, pressure sores, limit their oral intake leading to dehydration, poor nutrition, and constipation i.e. undermine the core principles of multi-component management of delirium and further prolong the episode of delirium, thereby increasing length of stay and mortality risk.

Principles on the use of pharmacological therapy in the management of behavioural disturbance in delirium:

1. Pharmacological therapy should only be considered in the delirious person with severe behavioural or emotional disturbance that might compromise their safety, the safety of others, or hinder essential medical treatment.
2. It is preferable to use only one drug, starting at the lowest possible dose and titrated by small increments if necessary and for the shortest possible duration. Prescriptions should be reviewed at least daily.
3. Use antipsychotic drugs with caution or not at all for persons with conditions such as those at risk of hypersensitivity to dopamine blockade, e.g. Parkinson's disease or Dementia with Lewy bodies.

Note: For patients with neuroleptic sensitivity, an atypical antipsychotic e.g. quetiapine may be used with the adjunct of benzodiazepines e.g. lorazepam if symptoms are not controlled.

Agents that may be used in the management of behavioural disturbance associated with delirium

If absolutely indicated then antipsychotic drugs are used for their anxiolytic properties rather than their antipsychotic properties in managing distress in a person with delirium. If used it should be in the lowest possible dose and for the shortest possible period of time. Low dose haloperidol may be effective in decreasing the degree and duration of delirium in postoperative patients compared to placebo based on small studies. This agent has the advantage of being available in both oral and parenteral form. While low dose haloperidol has comparable efficacy and side effects to atypical antipsychotics, high dose is associated with a higher rate of extrapyramidal side effects.[57]

Second generation/atypical antipsychotics (e.g. risperidone, quetiapine and olanzapine) have been used clinically to treat agitation in patients with delirium, with controlled trials showing efficacy at least comparable to haloperidol. There is no data available to demonstrate any advantage of one antipsychotic over another. Consideration on the choice of antipsychotic should be based on the treating clinician's familiarity and the availability of drugs.

Benzodiazepines have limited role in the treatment of delirium as it may worsen confusion and cause sedation. They are primarily used in the management of alcohol or drug withdrawal or when neuroleptic drugs are contraindicated.[58]

Note: ECG monitoring should be considered with all antipsychotics due to the risk of QTc prolongation and torsade de pointes. The risk increases with drug load and particularly with IV administration. Extreme caution is needed in frail older patients with cardiac problems or if they are on concomitant medication that might prolong the QTc.

Options for first line **oral** treatment (choose **one** of the following):

Drug	Starting dose	Maximum frequency	Max dose in 24 hrs	Notes
Antipsychotics: Choose one of the following (except in dementia with Lewy bodies)				
Haloperidol PO or	0.5mg BD	Maximum frequency is 2-hourly if necessary but not exceeding the maximum daily dose. Close monitoring required.	Hospital: 5mg Primary care: 3mg	<ul style="list-style-type: none"> Extrapyramidal side effects are common & increased if > 3mg in 24 hours. If > 2mg required in 24 hours, consider referral. May continue with haloperidol 0.5 - 1mg per day for 48 hours (in single or divided doses) then reassess.
Risperidone PO or	0.5mg BD		3mg	<ul style="list-style-type: none"> Orodispersible tablets available. May continue with risperidone 0.5 - 1mg per day (in divided doses) for 48 hours then reassess.
Olanzapine PO	2.5mg OD		15mg	<ul style="list-style-type: none"> Orodispersible tablets available. May continue with olanzapine 2.5 - 5mg per day (in single or divided doses) for 48 hours then reassess.

Drug	Starting dose	Maximum frequency	Max dose in 24 hrs	Notes
Second line: Benzodiazepines for patients with Parkinson's disease/ DLB/ benzodiazepine withdrawal/ severe heart failure/ cardiac arrhythmias/ cardiomyopathy				
Lorazepam PO	0.5mg OD	Maximum frequency is 2-hourly if necessary but not exceeding the maximum daily dose. Close monitoring required.	3mg	<ul style="list-style-type: none"> ● May cause respiratory suppression reversible with flumazenil. ● Lorazepam tablets can be given sublingually. ● May continue with lorazepam 1mg per day for 48 hours (in single or divided doses) then reassess.

In an emergency, when oral medication is refused:

Drug	IM dose	Maximum frequency	Max dose in 24 hrs	Notes
Antipsychotics:				
Haloperidol IM or	1 - 2mg BD	Maximum frequency is 2-hourly if necessary but not exceeding the maximum daily dose. Close monitoring required.	5mg	<ul style="list-style-type: none"> ● Can be given IV in hospital setting. ● ECG monitoring recommended. ● Extrapyramidal side effects are common.

Drug	IM dose	Maximum frequency	Max dose in 24 hrs	Notes
Benzodiazepines: Choose one of the following				
Lorazepam IM or	0.5 - 1mg BD	Maximum frequency is 2-hourly if necessary but not exceeding the maximum daily dose. Close monitoring required.	3mg	<ul style="list-style-type: none"> • May be given instead of or in addition to haloperidol if sedation is needed. • Can be given IV in hospital setting. • May cause respiratory suppression (reversible with Flumazenil).
Midazolam IM	1.25 - 2.5mg PRN		7.5mg	<ul style="list-style-type: none"> • If Lorazepam injection is unavailable, Midazolam is an alternative. • May cause respiratory suppression reversible with Flumazenil. • Flumazenil has a shorter half life and duration of action than Midazolam so patients may become re-sedated.

US FDA black box warning

Antipsychotic medications (e.g. Haloperidol (parenteral), Olanzapine, Quetiapine and Risperidone) have been associated with an increased risk of cardiovascular events and stroke in older patients with dementia.

The commencement of an antipsychotic should be accompanied by the following documentation:

- that non-pharmacological measures have been attempted and failed
- that the individual remains at risk of harming themselves or others
- the dosage of medication
- the mode of medication delivery
- the frequency
- the maximum daily dosage
- when the dosing and necessity for continued usage will be reviewed

The frequency of medical review and titration of the medication will vary according to the patient's clinical status, but at the very least should be once every 24 hours. A patient with significant agitation may require more frequent review. Nursing staff caring for patients on antipsychotic medication should regularly consult with the physician in-charge. Non-pharmacological management should be continued throughout.

PHYSICAL RESTRAINTS IN DELIRIUM

- **Physical restraint is not advisable in delirium management as it often aggravates the patient's emotional distress and disturbed behaviour. It may lead to severe debilitating consequences.**
- **Restraints should only be used when there is reasonable belief that less restrictive measures have been determined to be ineffective.**
- **If restraint is used, the risk of untoward treatment interference events must outweigh the physical, psychological, and ethical risks of their use. The rationale for restraint use must be documented in the clinical notes.**
- **Patients should be monitored for the development of complications from restraining therapies (at least every four hours), more frequently if the patient is agitated or if otherwise clinically indicated.**
- **Orders for restraining therapy should be limited in duration to a 24-hour period, at which time a re-evaluation is required. Restraint must be discontinued at the earliest possible time.**

Explanation

A physical restraint is defined as any device which limits a person's freedom to move voluntarily when applied to the body and may include hand mitts, soft ties, restraining vests, body belts, wheelchair bars, and bilateral bedrails. Available evidence suggests physical restraint does more harm than good in patients with delirium. When restraint is used, patients are likely to experience acute decline in function and would also be at risk of falls, incontinence, dehydration, skin breakdown, pressure ulcers, altered nutrition, injury, psychological distress, and disorganised behaviour. In tragic cases, death may result from asphyxiation, strangulation, entrapment, or cardiac arrest.[59-62] Restraint has also been linked to longer lengths of stay.

Good practices include the use of ultra-low beds. If these are not available, the medical team should consider nursing these patients on a mattress placed directly on the floor.

Nursing educational initiatives and innovative models of practice have been shown to be effective in implementing a restraint-free approach to patients with delirium.[62,63] This approach includes:

- continuous observation
- reorientation
- obtaining information from family and friends regarding the person's life, personal preferences (e.g. preferred name, favourite foods/drinks) and interests (e.g. music, hobbies)
- observing behaviour to obtain clues about patients' needs
- discontinuing and/or hiding medical monitoring devices or cannulae
- avoiding short-term memory questions to limit patient's agitation
- understanding patient's preferences, eg. to wear their own clothes, use their own pillows and blanket, put their family photos beside them

The ideal nurse to patient ratio for delirium care should be 1:1, but this may not be feasible for our current health care setting in a general ward. Involving family members or carers in patient's behavioural management would be a practical and effective way in delirium care.

MINIMIZING DISRUPTION OF TREATMENT OR REMOVAL OF DEVICES BY THE PATIENT

- **Consider if the intervention / treatment / device is necessary or can be discontinued.**
- **Consider alternative routes of administration.**
- **Diversion of attention of the patient should be attempted.**

Explanation

Before subjecting any patient to an invasive procedure (intravenous cannula insertion, urinary catheterisation, etc) consider if the intervention is really necessary or could be avoided. If it is necessary consider how you might alleviate the distress it is causing the patient. Strategies may include: regular explanation and reassurance, one-to-one care by family member/carer/nurse, having the patient nearer to the nurses' station for closer observation; very rarely low dose sedation may be necessary. Take the opportunity to review all other interventions that might be adding to the individual's distress. Treat the precipitant(s) of the delirium as quickly as possible to resolve delirium.

These interventions may be employed to minimise or reduce device removal by the patient:[64]

A. Disruption of any device

- Explain to the patient what the device is and what it is for. Allow them to feel it under supervision
- Reassess daily to determine whether it is medically possible to discontinue device
- Try alternative mode of therapy
- Diversion of attention of the patient from the device

B. Ventilator

- More secure anchoring of endotracheal tube
- Appropriate sedation and analgesia protocol

C. Nasogastric tube

- Review the need for nasogastric feeding. Involve speech therapists early where available and if at all possible restore oral feeding with or without modified diets and fluids.
- Review indication for nasogastric feeding. Consider benefits to quality of life and patient's preferences when recommending nasogastric feeding, e.g. in advanced dementia.
- Appropriate anchoring technique should be practised to avoid medical device related pressure injury.

- Consider whether a bridled nasogastric tube would be more appropriate.
- If restraints are needed, start with least restrictive e.g. one hand mitt on the non hemiparetic side in stroke patients. (Refer to the above statements on the use of physical restraints.)

D. Intravenous lines

- Review need for intravenous route
- Consider Hep-Lock and cover with bandage
- Taping, securement of IV line under gown, sleeves
- Keep IV line out of visual field
- Consider diversion using a brightly-coloured dummy cannula
- Shorten the duration intravenous fluid e.g. over 6 hours
- Consider alternative therapy: oral / overnight drugs, subcutaneous fluids

E. Bladder catheter

- Review need for catheterisation
- Consider intermittent catheterization if appropriate
- Proper securement, anchoring to leg

FALLS PREVENTION IN DELIRIUM

- **Patients who are admitted to the hospital require routine falls risk assessment irrespective of their delirium status.**
- **All intrinsic and extrinsic risk factors for falls should be identified and mitigated.**
- **Multifaceted interventions focusing on all the modifiable risk factors are recommended.**

Explanation

Patients with delirium are prone to falls. In-hospital falls among patients with delirium are multifactorial and share many similar risk factors. The falls prevention strategies in the hospital are generally applicable to patient with delirium. These include:

1. Creating a safer environment of care for all patients.
2. Identifying high-risk patients and their specific modifiable fall risk factors.
3. Modifying the risk factors by multifaceted interventions.
4. Ensuring availability of appropriate equipment, adequate staffing and ongoing staff education.
5. Minimising risk of injury for those who do fall.

Multifaceted interventions for falls prevention should be considered for patients with high risk. These interventions include:

1. Routine medication review avoiding hypnotic/sedative medications.
2. Proactive observation and assistance (e.g. early mobilization, regular assistance to use the toilet, falls alarms at bedside or at patient's chair).
3. Ensure walking aids and glasses are within reach.
4. Consider ultra-low beds or nursing on the floor if the patient is prone to wandering
5. Environmental modification focusing on flooring, lighting, clutter, signposting, footwear, personal mobility aids, etc.
6. The use of cot sides and restraints may need to be considered.

INFORMATION FOR PATIENT AND CARERS

Delirium can be a frightening experience for the individual, their family and their carers. It is important to recognise that some individuals will recall their delirious behaviour and be distressed by this after recovery from the episode of delirium. Information must be available for patients, their families and carers which explains the cause(s) of delirium, management strategies, possible protracted resolution, need for follow-up cognitive assessments, and potential for reduced physical and/or cognitive function upon recovery from the precipitating illness(es); and also emphasises the importance of advising any future health care professionals of this episode of delirium, which is a strong risk factor for future episodes of delirium.

CONSIDERATIONS FOR GOOD DELIRIUM CARE AND BEST PRACTICES

Consideration must be given to ensure the following:

- Early identification of patients at risk and implementation of preventive measures
- Patients with delirium will be everywhere in the hospital so every ward area needs expertise to recognise and skills to manage persons at risk of or who have developed delirium. These need to be part of mandatory training for all staff
- Adequate staffing to manage delirium
- Involvement of multidisciplinary team for holistic care
- Ensure the environment is suitable to manage delirium
- A specialised delirium unit with trained staff would be an ideal environment for patients with delirium.
- Delirium care should be incorporated into the basic training curriculum of all health care workers, and adherence to delirium care pathway should be considered an indicator for quality care.
- Regular audit should be undertaken to assess the adherence of a clinical care pathway rather than the prevalence of delirium. A low prevalence of delirium might be due to under detection, which does not reflect the quality of care.
- Information about delirium should be available for patients, their families and carers.

DISCHARGE AND FOLLOW-UP

Efforts should be made to prevent readmission through a multidisciplinary approach and an individualised discharge care plan. Delirium may take more than 12 months to resolve. [65,66] Hence, complete resolution of delirium should not be the criteria of discharge.

Patients with delirium may have previously undiagnosed dementia or are at an increased risk of developing dementia in the future. They will require follow-up post-discharge for further evaluation of their cognitive function, to determine whether their delirium fully resolves or a previously unrecognised dementia has been unmasked. Those patients who develop delirium and were not previously known to have cognitive impairment should not be diagnosed as having dementia.

CONCLUSION

Delirium is a common clinical condition which is frequently missed by health care workers. It leads to higher mortality rates, longer hospital stays, poorer functional and cognitive outcomes. Employment of preventive, early identification and proper management strategies can reduce the risk of delirium among hospitalised persons and promote better outcomes.

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