Guy's and St Thomas' NHS Foundation Trust

Clinical Guideline

The Prevention, Recognition and Management of Delirium in Adult In-patients

Summary

Delirium:

- is a neuropsychiatric syndrome characterised by acute onset of fluctuating cognition and inattention linked to triggering factors
- is very commonly encountered in hospital medicine
  - Complicating at least 10% of all medical admissions
  - 20-30% prevalence on medical wards
  - 15-53% of patients postoperatively
  - 70-87% of those in intensive care
- is a medical emergency independently associated with serious adverse outcomes
  - Increased mortality in older people - 35-40% at one year
  - Increased risk of institutional placement
  - Increased risk of in-hospital complications
- is preventable
  - Up to 1/3 of cases
- is treatable if identified and managed appropriately and urgently

Delirium is everybody's business. We all need to know how to prevent delirium and make sure that someone with suspected delirium receives rapid assessment and appropriate management.

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DELIRIUM IS A MEDICAL EMERGENCY
Follow the below guidelines and escalate to a senior colleague

1. RECOGNITION – Is your patient delirious?

Have they had a development or change in:

- Cognition/concentration
- Physical function
- Social function
- Appetite, sleep, mood
- Hallucinations
- Falls

2. DIAGNOSIS – Use CAM (Confusion Assessment Method) to diagnose hypoactive, hyperactive or mixed delirium:

- Acute onset, fluctuating course ***and***
- Inattention (distractible, can't concentrate)

and either

- Disorganised thinking (rambling/illogical ideas) ***or***
- Altered level of consciousness (hyper alert/drowsy)

- If CAM + the patient is delirious

3. INVESTIGATIONS – what is the cause?

Activate the Delirium Investigation Bundle on EPR for an order set of tests:

Common causes of delirium:

- **D**rugs (anticholinergics, benzodiazepines, alcohol withdrawal)/ **D**ehydration
- **E**lectrolyte disturbances
- **L**ots of pain
- **I**nfection/**I**nflammation (post surgery)
- **R**espiratory failure (hypoxia/hypercapnia)
- **I**mpaction of stool
- **U**rinary retention
- **M**etabolic disorder (liver/renal failure, hypoglycaemia)/**M**yocardial infarction

4 MANAGEMENT

- Give reassurance, speak calmly and orientate the patient
- Treat all reversible causes identified
- Ensure adequate nutrition, fluids, pain control and bowels and bladder open
- Use Behaviour Chart to monitor behaviour and guide management
- Discuss ongoing management with Multidisciplinary team +/- patient's family
- Provide the delirium information leaflet for the family and patient
- Document diagnosis of delirium in the notes and discharge summary
- Falls Prevention: complete risk assessment & interventions, ensure optimal patient location & appropriate level of observation
- **Drug management:** If distressed/risk to themselves or others and all other techniques failed can use sedation to:
    a) Relieve patient distress
    b) Prevent danger to self/others
    c) Carry out essential investigations

PRN Haloperidol 0.5-1mg, orally every 1-2 hours, daily max 5mg in elderly (IM 0.5-1mg 2 hourly, daily max 5mg in elderly)

CAUTION: Prolonged QTc of >440ms in men or >470ms in women, Lewy body dementia, Parkinson's disease/parkinsonism, seizures, recreational drug and alcohol intoxication/withdrawal. Benzodiazepines as first line.

Lorazepam 0.5 –1 mg oral/IM 1-2 hourly, max 4mg daily may be more suited for sedation for imaging or procedures as has a shorter half life. See Delirium Clinical Guideline for further information.

5. ESCALATION

If further assistance is needed after following steps 1-4 above, contact the Dementia and Delirium (DaD) team by submitting a **'Delirium Referral'** via EPR for advice or a consult. For urgent advice bleep the Dementia and Delirium CNS #1582. Out of hours contact the medical SNP #0162

1. Delirium Prevalence and Hospital Incidence

Delirium is a common neuropsychiatric condition that is also known by various other names including organic brain syndrome, intensive care psychosis and acute confusional state.[1] Patients with delirium can be found in all specialties of the hospital with delirium occurring in 10-20% of medical patients on admission and a further 10 to 30% developing delirium as an inpatient.[2] Delirium occurs in 15 to 53% of surgical patients postoperatively and in 70 to 87% in intensive care.[3]

2. Outcome and Prognosis

Patients with delirium have an increased length of stay, increased mortality and increased risk of institutional placement.[1,4] Hospital mortality rates of patients with delirium range from 6% to 18% and are twice that of matched controls.[4] There is a higher risk of hospital acquired complications such as pressure sores and falls. [5] The one-year mortality rate associated with cases of delirium is 35-40%.[4] Up to 60% of individuals suffer persistent cognitive impairment following delirium and they are also three times more likely to develop dementia.[1,4]

3. Predisposing and precipitating factors of delirium

3.1 At risk groups

A number of risk factors are associated with an increased probability of developing delirium, shown in Table 3.1. Those highlighted in bold have the greatest impact and when any of these risk factors is present, the person is at risk of delirium. When people first present to hospital, documented assessment should be carried out for: [6]

- Age 65 years or older
- Current hip fracture
- Cognitive impairment or dementia
- Severe illness (a condition deteriorating or at risk of deterioration) [6]

Table 3.1: Common risk factors: [1-4, 7]

Co-existing medical conditions	**Severe illness** **Current hip fracture** Significant co-morbidity Chronic renal or hepatic impairment History of stroke Infection with HIV	**Drugs**	Polypharmacy (>3 drugs) Treatment with multiple psychoactive drugs Alcohol/recreational drug dependency
Cognitive status	**Dementia** **Cognitive impairment** History of delirium Depression	**Functional status**	Functional dependence Immobility Low level of activity History of falls Incontinence
Demographics	**Age > 65 years old**	**Sensory Impairment**	Visual and hearing
Decreased oral intake	Dehydration Malnutrition	**Metabolic abnormalities**	Hepatic failure Renal failure Thiamine deficiency

3.2 Precipitating factors

The cause of delirium is almost invariably multi-factorial and there are numerous potential precipitants. These include any condition that can induce disordered body chemistry; any illness that compromises the body's circulation and oxygenation; any medication that affects the central nervous system; any infection when the patient is in a high-risk group or is severe. A careful assessment must be made to exclude all common causes. Delirium may be the only manifestation of severe disease (eg myocardial infarction) in an older person.

Table 3.2 Common precipitating factors: [1-4, 7]			
Environmental factors	Change of environment Loss of spectacles or hearing aid Inappropriate noise and lighting Immobility Sleep deprivation Catheters and lines Change of staff and ward Falls Physical restraint	**Drugs**	Alcohol or sedative withdrawal Sedative hypnotics Opioids Anticholinergics Antiparkinsonian drugs Antidepressants Anticonvulsants Corticosteroids Acute recreational drug toxicity or withdrawal
Fluid and electrolyte abnormality	Hypo/hypernatreamia Hypercalcaemia Renal failure Dehydration	**Infections**	Chest Urine (do urinalysis) Skin / ulcers Abdominal CNS
Neurological illness	Stroke Seizures Subdural haematoma	**Surgery**	Orthopaedic Vascular/cardiac Gastro-intestinal
Pain	Acute pain Acute on chronic pain	**Urinary and faecal retention**	Specifically examine to exclude, history is unreliable
Respiratory/ Cardiovascular	Hypoxia e.g. Pulmonary embolus, pneumonia Hypercapnia Cardiac failure Myocardial infarction Organ/tissue ischemia	**Endocrine/ metabolic**	Thiamine deficiency Hypo/hyperthyroidism Hypo/hyperglycaemia Liver failure

3.3 Memory aid for delirium precipitants – think DELIRIUM

Drugs (withdrawal/toxicity, anticholinergics)/**D**ehydration
Electrolyte imbalance
Level of pain
Infection/**I**nflammation (post surgery)
Respiratory failure (hypoxia, hypercapnia)
Impaction of faeces
Urinary retention
Metabolic disorder (liver/renal failure, hypoglycaemia)/**M**yocardial infarction

4.0 Clinical Features and Diagnosis of Delirium

4.1 Clinical features of delirium

The clinical indicators of delirium are shown in table 4.1. At presentation, people at risk should be assessed for recent (within hours or days) changes or fluctuations in behaviour.[6] These may be reported by the person at risk, or a carer or relative. Delirium is frequently missed by clinicians and therefore a high index of suspicion is required to detect cases.[8]

Table 4.1 Clinical Features of Delirium: [9]	
Altered cognitive function	Typically global or multiple deficits in cognition, including disorientation, memory deficits and language impairment.
Inattention	Difficulty focusing, sustaining, and shifting attention. Difficulty maintaining conversation or following commands.
Disorganised thinking	Manifested by disorganised or incoherent speech. Rambling or irrelevant conversation or an unclear or illogical flow of ideas.
Altered Perception	Delusions or hallucinations in about 30% of patients.
Altered physical function	Hyperactive: marked by agitation, restlessness, vigilance. Hypoactive: marked by lethargy, decreased mobility, reduced movement, reduced appetite.
Altered social behaviour	Common. Manifested by intermittent and labile change in mood or attitude with symptoms of fear, paranoia, anxiety, depression, irritability, apathy, anger or euphoria.
Altered level of consciousness	Clouding of consciousness, with reduced clarity of awareness of the environment and slow responses.
Altered sleep-wake cycle	Characteristic sleep-cycle disturbances. Typically daytime drowsiness, night time insomnia, fragmented sleep or complete sleep cycle reversal.
Acute onset	Occurs abruptly usually over a period of hours or days. Important to try to establish that the symptoms are a new phenomenon.
Fluctuating course	Symptoms tend to come and go or increase and decrease in Severity over a 24 hour period. There is often a characteristic lucid interval.

4.2 Delirium sub-types

There are three clinical subtypes of delirium: hyperactive (characterised by heightened arousal, restlessness, agitation and aggression); hypoactive (characterised by sleepiness, lack of interest in daily activities, and being quiet and withdrawn) or mixed (in which patients move between the two subtypes). Delirium without agitation occurs in >50% of patients with delirium. Hypoactive and mixed delirium can be more difficult to recognise.[10] If in doubt, ask for help from a healthcare professional experienced at managing delirium.

4.3 Diagnosis

In those patients with clinical indicators of delirium, diagnosis should be confirmed using the **Confusion Assessment Method (CAM).** CAM should be used by a person competent in identifying delirium.

Requires point 1 ***and*** 2 ***and either*** 3 ***or*** 4

1) **Acute onset and fluctuating course** (use collateral history and consider serial AMTS/MMSE) *and*
2) **Inattention** (distractible, can't focus, can't follow a conversation, playing with bedclothes, can't count backwards 20 to 1) *and either*
3) **Disorganised thinking** (rambling, illogical flow of ideas, switching of subjects)
4) **Altered level of consciousness** (vigilant, lethargic / drowsy, stupor, coma)

Memory aid mnemonic for CAM - think CA^{2}MS:

Delirium diagnosis requires **CA^2** *and either* **M** *or* **S**

Changeable course

Acute onset + **A**ttention poor

Muddled thinking

Shifting consciousness

4.4 Differential diagnosis

Common diagnoses that can be mistaken for delirium are dementia, depression, schizophrenia, dysphasia, hysteria/mania, non convulsive epilepsy. Your patient may have dementia, delirium or both. ***If uncertain treat for delirium first.***

4.5 History (usually including collateral history)

From carers, next of kin, relatives, nursing home staff, social worker, friends, GP. Establish that the confusion is a new phenomenon (Aids: usual function or Barthel score, usual mental/intellectual function, check old notes for previous AMTS/MMSE, previous history of confusion). Also check history of incontinence, full drug history, use of spectacles or hearing aids.

4.6 Physical examination

Check and document conscious level, temperature, signs of infection (lung, urine, skin, abdomen, CNS), neurological examination, rectal examination. Check for pressure sores and pain. AMTS or MMSE. A score of 7 or less on the AMT or a score of 24 or less on the MMSE is considered to be indicative of cognitive impairment requiring further investigation.

4.7 Helpful initial investigations

Pulse oximetry, urinalysis, FBC, CRP, renal profile, calcium, LFTs, glucose, blood cultures, arterial blood gas, ECG, CXR.

4.8 Documentation

Ensure that the diagnosis of delirium is documented in the patient's medical notes and document the treatment plan. Include the diagnosis in the patient's discharge letter/summary as well as the discharge AMTS/MMSE.

5. Delirium Prevention and Treatment

Management should be patient centred, giving patients the opportunity to make informed decisions about their health care and taking into account the individuals needs and wishes. Often patients with delirium lack capacity for some decisions. If this is the case, the code of practice detailed in Mental Capacity Act should be followed (see www.publicguardian.gov.uk or trust link http://gti/clinical/trust-wide-projects/safeguarding/vulnerable_adults/mentalcapacityact.aspx for more information). Good communication between members of the team caring for the patient is vital. Written communication should be clear and appropriately detailed. Family and carers should have the opportunity to be involved in treatment strategies.

5.1 Delirium prevention

Preventing delirium is the most effective strategy for reducing its frequency and complications.[3] Up to one third of cases have been shown to be preventable.[11] Patients found to be at risk of delirium as detailed above should be assessed for clinical factors that may contribute to delirium within 24 hours of admission.[6] Following the multi-component do's and don'ts intervention package listed in table 5.1 will provide a framework prevent delirium and interventions should be tailored suit individual's needs. Those highlighted in bold are specifically endorsed by NICE.

5.2 Delirium management

Delirium is a medical emergency and often associated with severe underlying illness. Rapid identification and treatment of underlying causes should be the first aim of management.[7] Provide symptomatic and supportive care until recovery by continuing to follow the do's and don'ts. Non-confrontational and empathic de-escalation techniques may be required in a distressed and agitated patient. Pay particular attention to re-orientation and re-assurance, often with the aid of familiar family and friends. A suitable calming and stable care environment is important. Continue to look for new and missed causes.

Using pharmacological treatment to prevent delirium, for example giving haloperidol preoperatively, has not been shown to reduce the incidence of delirium.[12] However there is evidence of it having a positive effect on the duration and severity of established delirium.[12] Pharmacological management should be reserved for patients whose symptoms of delirium would threaten their own safety or the safety of other persons or would result in the interruption of essential therapy.[3] **The common errors in managing delirium are to use antipsychotic medications in excessive doses, give them too late or overuse benzodiazepines.**[2] There is a role for regular low dose antipsychotics when as "prn" doses are required frequently. Specialist advice should be sought in this scenario.

5.1 The Do's and Don'ts in delirium care

ALL MEMBERS OF THE MDT	
DO's	**DON'Ts**
<u>Observe the patient:</u> High risk of falls (do Trust falls risk assessment). Patients at high falls risk should be observed at arm's length away from a nurse at all times. Consider using a bed close to the nursing station. <u>Environment and Communication:</u> Use calm speech and gentle manner. Be courteous and polite even if the patient isn't. Acknowledge their feelings and show concern. **Orientate patient frequently: who and where they are and what your role is.** Explain unfamiliar noises/equipment/personnel. **Provide easily visible clocks and calendars, good lighting and signage.** **Facilitate visits from friends and family.** Use familiar pictures/items around bed. **Use cognitively stimulating activities such as reminiscence (talking through past experiences)** **Optimise any sensory deficit (remove ear wax, provide hearing aids/spectacles).** **Hydrate patients, offer drinks when visiting.** **Consider nutrition by providing dentures, performing a MUST score and involving dietetics if necessary.** **Encourage early mobility, under supervision if required. Encourage all people, including those unable to walk, to carry out active range-of-motion exercises.** Use interventions that are least restrictive to the patient. Let patients wander within a safe environment. <u>Documentation:</u> Patient's capacity if absent and how you acted in the patient's best interest.	<u>Environment and Communication:</u> Don't insist on performing unnecessary tasks (washing/ dressing/ shaving etc). Don't argue and avoid commands: reasoning is usually impaired in delirium Create choices for the patient wherever possible *("would you like a cup of tea now or a little later?"*) Don't frequently change nurses, wards or bays. Don't use side rooms if possible. Don't expose patient to disturbances such as sudden noise or bright lights at night. **Don't prevent sleep at night: reduce loud bleeps/noises and bright lights.** Don't ignore Trust bedrail policy (intranet), avoid bedrails if patient is able and likely to climb over them. Don't physically restrain patients to the bed / chair. Wherever possible mobilise patient instead e.g. take for regular walks to toilet or for washing/shower. .

MEDICAL / NURSING STAFF	
DO's	**DON'Ts**
5.2 Management **Correct hypoxia (see oxygen prescription guidelines) and hypotension.** **Remain vigilant for infection (e.g. urinalysis, bloods, chest).** **Correct dehydration (may need SC/IV if oral intake poor).** **Monitor bowels and treat constipation.** **Identify (including non-verbal signs) and treat pain.** If delirium develops, follow a step by step approach to identify and treat the causes (see table 3.2). **Explain diagnosis of delirium to family.** Ensure diagnosis is documented clearly in the notes and EDL. Print delirium bundle from EPR Consider urgent psychiatric review especially if hallucinations or delusions are present. Consider security involvement Consider arm length observations at all times including contacting SNPs for extra staffing. Prescribing **Review appropriateness of all medications (anticholinergic medication ought to be stopped).** Ascertain use of non-prescription/recreational drugs Consider medication for patients at risk to self/others or with distress or to enable essential investigations as per attached guidance, with maximum dose in 24 hours also clearly documented. Consider regular low dose haloperidol to treat delirium (usually 1/52 or less) if the patient requires frequent doses of haloperidol (consensus).	Management Don't delay attendance – delirium has a high mortality. **Don't catheterise unnecessarily.** Don't use IV lines unnecessarily and follow trust guidance in use of IV cannulas. Don't order unnecessary tests (CT, EEG or frequent bloods). **Don't disturb patient's sleep with procedures and medication rounds if possible.** Don't use medications for delirium unless other interventions have failed. But if they have failed use drugs earlier rather than later. Don't use large amounts of antipsychotics, particularly in the elderly. General rule is use less more often. Don't give antipsychotics to patients with a prolonged QTc, with parkinsonism or with Lewy body dementia - use lorazepam instead.

6. Pharmacological Management of Delirium

Consider medications only after behavioural approaches (see do's and don'ts list)

Treatment Principles:

- Prefer oral route, review all medications every 24 hours
- Judge starting dose by age, body size and degree of agitation
- Give smallest dose 1-2 hourly until desired sedation achieved up to max daily dose, prescribe on prn section of the drug chart.
- Consider psychiatric review if frequent doses/daily max doses are reached

Special indications for Benzodiazepines

Yes

Indications for 1st line Benzodiazepines:
Parkinson's disease/parkinsonism, Lewy body dementia, seizures, prolonged QTc (>440ms in men, >470 in women), alcohol withdrawal (see separate protocol), GHB/GBL withdrawal/ intoxication and recreational drug intoxication (note often higher benzodiazepine doses required than those suggested below – consult clinical toxicology service). Prefer oral route.
Lorazepam 0.5 – 1 mg oral/IM 1-2 hourly, max 4mg daily

No

Patient takes oral medication

Yes

Oral treatment (write as prn medication)
Haloperidol[13]:
>65yrs: 0.5-1mg hourly, max 5mg in 24hrs

Younger adults >18yrs only:

2mg-5mg 1-2 hourly, daily max 20mg

Peak effect 4-6 hrs

No

IM treatment (write as prn medication)
Haloperidol IM:
>65 yrs: 0.5-1mg 2 hourly, daily max 5mg

Younger adults >18yrs only:

1mg to 3mg 1-2 hourly, daily max 10mg

Peak effect 20-40mins

Notes:

Check ECG for elongated QTc (>470ms fem/ >440 male) before and after starting haloperidol. If it is impractical to perform an ECG (e.g. patient agitation) use lorazepam until an ECG is possible.

Monitor sedated patients with respiratory rate, pulse oximetry, BP, Pulse and Temperature. Follow trust observation policy and charts. Monitor especially for respiratory depression and call doctor if respiratory rate <10.

Refer to BNF for drug information; be aware of adverse events in patients with long QT interval taking Haloperidol.

Acute dystonic reactions: More common with IM haloperidol and in antipsychotic naive patients. Treatment: Procyclidine 5mg po/im.

Combined oral/IM dosing: If combination of Haloperidol IM and oral is used, transfer sum of oral doses into IM dose by multiplying with 0.6, add to it all IM doses and ensure max dose of 12 mg is not exceeded in 24 hour period before calling for specialist advice.

Olanzapine 2.5 - 5 mg orally 2 hourly, daily max 20mg (10mg in elderly) can be used in patients with history of dystonia. Dispersible formulations available for enteral feeding tube use or those with dysphagia. Olanzapine may be better tolerated if antipsychotics are needed for longer time periods.

7. ECG Monitoring for Haloperidol – High dose risk

The summary of product characteristics for haloperidol recommended that all patients should have an ECG before and after initiation of haloperidol. Haloperidol causes corrected QT interval (QTc) prolongation which may lead to Torsade de Pointes and sudden death. This is usually not expected in doses suggested above in delirium.

The risk of increased QTc elongation is thought to be higher with parental administration and higher doses. Around 4% of patients administered >35mg in 24 hours of IV haloperidol may experience Torsade de Pointes.[14] All patients prescribed IV haloperidol should be on a cardiac monitor. Small doses, regularly, are preferable in delirium which should mean larger doses may be avoided.

The risk and benefit of prescribing haloperidol must be considered in patients who have risk factors for ventricular arrhythmias such as: cardiac disease, family history of sudden death and/or QT prolongation, uncorrected electrolyte disturbances, subarachnoid haemorrhage, starvation or alcohol abuse.

Concomitantly prescribing medicines that may also elongate the QTc should be avoided.

The normal QTc value for women is <470ms and <440ms in men. QTc's of over 500ms have a strong association with an increased risk of arrhythmias.

Any patient who as a QTc of over 500ms or has an increased QTc of 25% or greater than 20ms from base-line, should **not** be prescribed haloperidol.[15, 16] Where QTc intervals are greater than 440ms in men or 470ms in women but less than 500ms, a repeat ECG should be performed, the risk/benefit of prescribing haloperidol and a switch to lorazepam must be considered.

8. Documentation

Minimum Standards

1. Identification of at risk patients
2. Recognition of clinical indicators (including falls) in at risk patients
3. MMSE/AMTS in all patients over 65
4. Use of CAM in diagnosis
5. Document diagnosis of delirium in medical notes (print delirium bundle)
6. Active exclusion of common precipitants
7. Treatment plan
8. QTc prior to antipsychotics
9. Falls risk assessment and management strategy
10. Document delirium in EDL
11. Discharge MMSE/AMTS

9. Memory Aid Mnemonics

Memory aid mnemonic for CAM - think CA²MS

Delirium diagnosis requires **CA²** *and either* **M** *or* **S**
Changeable course
Acute onset + **A**ttention poor
Muddled thinking
Shifting consciousness

Memory aid for delirium precipitants – think DELIRIUM

Drugs (withdrawal/toxicity, anticholinergics)/**D**ehydration
Electrolyte imbalance
Level of pain
Infection/**I**nflammation (post surgery)
Respiratory failure (hypoxia, hypercapnia)
Impaction of faeces
Urine retention
Metabolic disorder (liver/renal failure, hypoglycaemia)/**M**yocardial infarction

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Appendix:

11. Delirium in Critical Illness [17]

11.1 Patient assessment

Critical care patients who are either severely agitated or delirious should have a clinical review either by the MDT or the analgesia, sedation and delirium (ASD) expert team.
The clinical review should include, where possible:-

- A repeat of the delirium screen, using CAM ICU
- A dialogue with the patient, their relatives and the MDT
- A summary of relevant history
- An assessment of pain control and whether history would indicate pain
- A review of all current medication, if possible stopping any that are deliriogenic or
- Re-starting / replacing any medications that the patients may be withdrawing from.

A specific patient plan will be devised and updated regularly. The clinical assessment and plan will be agreed with the nurse at the bedside, the MDT and where relevant the patient and their family.

11.2 Non Pharmacological Treatment of Delirium

Non pharmacological measures for the treatment of Delirium are extremely important and should be considered an essential aspect of delirium management. All plans must be discussed with nurse at bedside and agreed with the MDT.
Plans should be tailored to the needs of the patient. They will generally include:-

Daily Routine

Wherever possible early dialogue with the patient and their relatives should take place.

Morning: physiotherapy/ rehabilitation with as much interaction as possible

Lunch: REST (protected time) approximately 2 hours

Afternoon: rehabilitation and interaction with family.

Repetitive re-assurance of surroundings and their safety are very helpful

Introduce a notice board with photographs of family and home photographs. Plus patients name, date and time

There have been a number of publications showing benefit from interventions designed to improve the patient experience and minimise patient anxiety. These include:-

Patient cohorting: Agitated/delirious patients at quieter part of the critical care unit. If this is not possible then consideration what is happening in the door bed space: a patient in extremis may be very frightening when side by side to a delirious patient. Consider moving the delirious patient in these circumstances whenever possible.

Extra nursing/healthcare assistants should be considered when caring for patients who are so agitated/delirious that they could be either a danger to themselves or those caring for them.

Restoration of the day/night cycle
Restoration of the day/night cycle is imperative in the treatment of delirium in critical illness. Reduce lighting at night-time and minimising alarms wherever possible in agitated/delirious patients.

Registered mental health nurses for sectioned patients or those with considerable history of mental illness

Physical restraints: there are arguments for and against these but used sensitively they can be very effective (see mental capacity act for guidance on restraints)
http://gti/clinical/trust-wide-projects/safeguarding/vulnerable_adults/mentalcapacityact.aspx

11.3 Pharmacological measures in delirium

Night sedation
Agents that have evidence of benefit in critical illness include melatonin and dexmedetomidine. Given the vast difference in price, melatonin should be considered first.

Melatonin.
There is limited evidence to support its use however both cost and safety are favourable. The optimal dose remains to be determined. A starting dose of at least 4mg is recommended in most patients. This should be rapidly increased to 10mg if ineffective
Consider the addition of a hypnotic agent in patients with either alcohol or drug abuse problems.

Choice of antipsychotic drug in delirium

When to consider prescribing:-

Severe agitation
Anxiety
Combative
After psychiatry/neuropsychiatry/ASD/DAD review
If patient too delirious/agitated to effectively communicate

When to consider stopping

Prolonged QTc

- > 450ms men
- > 470ms women
- Daily ECG and QTc monitoring for all patients

Delirium/agitation resolved

A tapering of the anti-psychotic is advised in most cases (see later section). If QTc greater than 600 milliseconds or in ventricular tachycardia then immediately stop anti-psychotic

In severe agitation/delirium then consider continuing anti-psychotic up to a week after delirium/agitation resolution. If in critical care, seek advice from ASD, rest of hospital DAD team.

QUETIAPINE
First line in critical care at GSTT

- Dose: 12.5mg to 50mg BD, up to 200mg BD PO/NG
- Patient group:
  - First line in critical care
  - CAM-ICU +ve. Mixed and hyperactive delirious pts.
  - To use with caution: post MI/post cardiothoracic surgery
- Adverse effects: hypotension, QTc prolongation, drowsiness
- Extra CYP 3A4 metabolism /many interactions alfentanil, voriconazole, protease inhibitors

HALOPERIDOL

- Dose:
  - >65years: 0.5-1mg hourly, max 5mg in 24hrs PO/NG
  - Younger adults>18years only: 2-5mg 1-2hrly, daily max 30mg PO
- Parenteral formulation is unlicensed and can only be prescribed by a consultant intensivist.
- Patient group:
  - Severe agitation
  - Acute delirious psychosis
- Patients to AVOID:
  - Elderly patients (>80years)
  - Post MI
  - Post cardiothoracic surgery

OLANZAPINE
Dose po/ng 2.5mg to 10mg bd. Higher doses have been used in severe agitation/delirium
Patient group
Prolonged QTc on quetiapine/haloperidol
Patients taking medicines that have interactions with other drugs used in delirium

11.4 Stopping or reducing anti-psychotics and alpa-2 agonists

It is hoped that the majority of agents for agitation and delirium initiated in critical care will be stopped before discharge.

Generally, a patient should be CAM or CAM-ICU negative before stopping or decreasing any medicines for delirium or agitation.

If there is any uncertainty, then contact the DAD/ASD team for advice.

The most common medicines continued after discharge from critical care are quetiapine, olanzapine, haloperidol and clonidine

Quetiapine

Once patient is CAM negative and symptoms of agitation/delirium have resolved quetiapine should be reduced in increments of 12.5mg bd over 2 to 3 days.

The most dose of quetiapine in critical care is 50mg bd, thus the reduction is: -

50mg bd 2 to 3 days
37.5mg bd 2 to 3 days
25mg bd 2 to 3 days

Then either stop at this stage

Or reduce to
12.5mg po bd then stop or refer to DAD

Olanzapine

Olanzapine should be reduced in increment of 2.5mg daily every 2 to 3 days.

The most common dose is 10mg daily, thus: -
10mg daily 2 to 3 days
7.5 mg daily 2 to 3 days
5mg daily 2 to 3 days
2.5mg daily 2 to 3 days

Stop or refer to DAD

Haloperidol

Intravenous haloperidol is an intensivist only prescription in critical care. It should never be continued on discharge from ICU.

Oral/enteral haloperidol 5mg 4 to 6 hourly, reduced after 1 to 2 days to 2.5mg 6 hourly, 2.5mg 8 hourly 1 to 2 days then stop or refer to DAD.

Clonidine

Mostly prescribed for agitation or pain adjuvant in CAM/CAM ICU negative patients.
Most common dose is 50 micrograms po 6 hourly.

50 micrograms po 6hourly reduced after 2 to 3 days
25 micrograms po 6hourly reduced after 2 to 3 days
12.5 micrograms po 6 hourly reduced after 2 to 3 days.

Occasionally one may observe mild rebound tachycardia on clonidine withdrawal. This is normally mild and resolves over 12 hours. If troublesome for patient then re start at last dose and reduce over 4 to 6 days.

Severe Delirium

In cases of severe delirium for example after hypoxic brain injury, then anti-psychotics may be required for much longer. These cases are often jointly cared with input from neuropsychiatry or psychiatry. For advice either contact specialist team or DAD for advice

Long-term Anti-psychotic Therapy

In cases where anti-psychotics were prescribed for indications pre critical care admission and restarted or continued after discharge then seek DAD, psychiatric or neuropsychiatric advice before any adjustment to anti-psychotic

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