Risk Factors/Prevention ("DELIRIUM_A")

Things to Think About in Terms of Risk Factor (RF), Prevention (P), and Management (M) of Delirium

Deficits that can be corrected or accommodated: e.g. hearing (Portable amplifying devices), vision(glasses), dentures, oxygen, hydration, nutrition, metabolic imbalances, electrolytes, constipation, UA retention (RF,P,M)

Environmental factors: e.g. rest/sleep deprivation, stimulation control (avoid over and under stimulation), lighting, familiarity of surroundings, orientation (e.g. clock, pictures, reminders), implement non-pharmacological sleep protocol by the nurse instead of sleep aids (Warm milk or herbal tea, relaxation tapes or music, and back massage, Unit-wide noise reduction strategies and schedule adjustments to allow uninterrupted sleep) (RF,P,M)

Longevity/age>70 (RF)

Impaired functional status, general health status: early mobilization, PT/OT consults (RF,M);

Restraints, avoid, along with other tethers (foley, IV, ect) (RF,P,M)

Intellect/CNS function: e.g. dementia, stroke, depression (RF)

Uncomfortable; manage pain: scheduled tylenol (limit 3g/day), if needed use low dose opioid (e.g. 2.5mg oxycodone Q4 PRN. (RF,P,M)

Medications / anesthetic agents Avoid high risk medications in the elderly, especially benzodiazepines and monitor for drug withdrawal. (RF,P,M)

Acute stressors: surgery, infection, metabolic disorders, other acute illness (RF, M)

Diagnosis: Key Components

1: Acute Onset or Fluctuating Course
2: Inattention
3: Disorganized thinking
4: Altered Level of consciousness
There are several validated assessment tools you can use e.g. 4AT: http://www.the4at.com/

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3 types of Delirium:

Hyperactive: restless and/or agitated.
Hypoactive: lethargic and/or apathetic.
Mixed: both hyperactivity and hypoactivity

Differential Diagnosis: 3Ds

Feature	Delirium	Dementia	Depression
Onset	Acute (hours to days)	Insidious (months to years)	Acute or Insidious
Acuity	Acute	Chronic, progressive	Episodic
Course	Fluctuate hourly throughout the day (worse at night)	Stable throughout the day (Behavior problems may be worse at night). Progressive worsening	Relative stable. May be self-limiting, recurrent or chronic. (worse in Am)
Duration	Days to months	Years, most types of irreversible.	Variable
Consciousness	Reduced, fluctuates	Clear until late stages	Clear
Hallucination	Very common (usually visual)	No common until late stages (usually visual)	Uncommon (usually auditory)
Attention/ concentration	Impaired	Normal until late stages	May be disorganized

Some high risk medications to avoid:

1. Anticholinergics (*promethazine*, hyoscyamine)
2. Skeletal muscle relaxants. (*carisoprodol, methocarbamol)*
3. Older Antihistamines **(***diphenhydramine, hydroxyzine*)
4. Benzo-. and Non-benzodiazepine hypnotics **(***zolpidem, valium, xanax*)

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Treatment: Non-pharmacological options

1. Recognize and treat precipitating factors **(refer to "Delirium A" above**).
2.Review medications and eliminate unnecessary medication, renally dose meds (if patient has renal failure), and avoid high risk medications.

Treatment: Pharmacological options

1. Limit use of antipsychotics, use the lowest dose for the shortest duration. (starting doses listed below)
2..Antipsychotics are not indicated to treat hypoactive delirium.

----------**Increasing sedative effects**---------->

Haldo Risperidone Olanzapine Quetiapine

<----------**Worsening Extrapyramidal symptoms (EPS)**----------

Drug	**Starting Dose**
Haloperidol	0.5mg PO or IM; can repeat every 4h (PO) or every 60 min (IM)
Risperidone	0.5 mg BID
Olanzapine	2.5 mg daily
Quetiapine	12.5mg BID

Delirium impact on surgical outcomes;

1.Increased mortality (1 year mortality:40%)
2.Higher Complication rates (e.g. aspiration pneumonia, dehydration)
3. Enhanced Length of stay
4. Increased Costs of care ($160 billion/year)
5.Higher Readmission rates
6. More frequent Falls
7.Higher use of Bladder catheter
8.Cognitive decline
9. Poor patient satisfaction
10.Worse functional status leading to increased institutionalization rates.

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Postoperative Delirium

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Pre-op risk assessment

Delirium Risk Assessment: (Marcantonio et al.)	
Age ≥ 70	If YES: 1 point
Alcohol abuse	If YES: 1 point
Cognitive impairment: MMSE < 25/30 or Telephone Interview for Cognitive Status (TICS) score <30	If YES: 1 point
Electrolytes: Abnormal sodium, potassium or glucose * sodium, <130 or >150 mmol/L; potassium, <3.0 or >6.0mmol/L; and glucose, <60 or >300 mg/dL.	If YES: 1 point
Poor functional status=Specific Activity scale of Class IV. (means <2 mets (light intensity activity e.g Can't dress without stopping because of symptoms.) *1 MET* = the energy (oxygen) used by the body as you sit quietly, perhaps while talking on the phone or reading a book.	If Yes: 1 point
Type of surgery: is it either non-cardiac thoracic surgery or AAA repair?	If Yes: 1 point
Score: 0 = low 1-2 = medium ≥3 = high	
Delirium Risk ☐ Low (2%) ☐ Medium (11%) ☐ High (50%)	

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