Outline

- Dementia
  - classifying dementia as cortical versus subcortical
- Depression
  - Why is it more common in dementia
  - How do we diagnose depression in dementia
  - Management
Outline

- Delirium
  - Recognizing delirium
  - Why is delirium more common in dementia
    - Recognizing delirium in dementia
  - Risk factors
  - Prevention and management
  - cases
Dementia

- Cognitive decline
  - including memory and at least one other cognitive sphere
- Severe enough to interfere with functioning
- Decline from previous, not due to something else

- DSM V – *Major Neurocognitive Disorder*
# Dementia - types

<table>
<thead>
<tr>
<th></th>
<th>Cortical</th>
<th>Subcortical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Early difficulty</td>
<td>Less difficulty</td>
</tr>
<tr>
<td>Memory</td>
<td>Recall, recognition impaired</td>
<td>Recall impaired, recognition less so</td>
</tr>
<tr>
<td>calculation</td>
<td>Impaired</td>
<td>Less difficulty</td>
</tr>
<tr>
<td>visuospatial</td>
<td>Impaired</td>
<td>Impaired</td>
</tr>
<tr>
<td>Frontal systems</td>
<td>Some impairment</td>
<td>More pronounced impairment</td>
</tr>
<tr>
<td>Behavior/Personality</td>
<td>Unconcerned, lack of insight</td>
<td>apathy</td>
</tr>
<tr>
<td>mood</td>
<td>okay</td>
<td>depressed</td>
</tr>
<tr>
<td>mobility</td>
<td>Normal until later</td>
<td>Slowed, apraxic, stooped</td>
</tr>
<tr>
<td>Cortical</td>
<td>Subcortical</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>--------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Alzheimer’s</td>
<td>Vascular – small vessel ischemia</td>
<td></td>
</tr>
<tr>
<td>Mixed</td>
<td>Mixed</td>
<td></td>
</tr>
<tr>
<td>Lewy Body Dementia</td>
<td>Dementia of Parkinson’s Disease</td>
<td></td>
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<tr>
<td>Frontotemporal Dementia</td>
<td>Normal Pressure Hydrocephalus</td>
<td></td>
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<tr>
<td>Creutzfeld-Jacob Dementia</td>
<td>Huntington’s</td>
<td></td>
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<tr>
<td>Alcohol-related dementia</td>
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</table>
## Dementia

<table>
<thead>
<tr>
<th></th>
<th>Cortical</th>
<th>Subcortical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mood</td>
<td>Typically okay</td>
<td>Low mood/ depression</td>
</tr>
</tbody>
</table>
Depression
- **defined**

- At least 5 of the following are present, with at least one of the first two. The symptoms must be present most of the day, nearly daily, for at least two weeks:
  - Depressed mood
  - A marked diminished interest or pleasure in almost all activities
  - Significant weight loss/gain
  - Insomnia or hypersomnia (over-sleeping)
  - Agitation or retardation of thinking, memory, etc.
  - Fatigue or loss of energy
  - Impaired concentration and indecisiveness, or recurring thoughts of death or suicide
Depression

- **Reactive depressions** can have some or all of the above, but they are usually not as debilitating. Most people with reactive depression can continue their normal work and home duties.

- With the more serious “endogenous” depressions, people can become totally incapable of fulfilling normal life responsibilities.
Depression in the elderly

- 9% community dwelling
- 25% institutions
- Risk factors
  - females > males
  - Cardiovascular disease
  - Other comorbidities, social isolation
  - Family history less important
  - Chronic benzodiazepine use
Depression in the elderly

Late Life Depression

Baseline prevalence

+ Life events/losses/dependence

+ Subcortical vascular ischemia
Depression
- in dementia

- Alzheimer’s disease
  - Coexistence
    - Depression is a common disorder
  - Insight in early AD
    - Some patients do have some awareness of their declining function
    - Later, insight becomes more uniformly impaired, making reactive depression less likely, but endogenous depression may still coexist.
  - Catastrophic reactions
    - Generally short-lived
Depression in dementia

- Vascular dementia
  - Multi (cortical) infarct dementia
    - Depression is common after cortical stroke (~50%), especially Left hemisphere infarcts
    - Often insight of deficits is preserved → reactive depression

- Subcortical dementias
  - Depression is a common part of the symptom complex
Depression
- *in dementia*

- Subcortical /small vessel vascular dementia
  - Leukoaraiosis (CT) or white matter hyperintensity (MRI)
  - Accumulation of subcortical ischemia associated with
    - Vascular dementia
    - Vascular gait
    - Vascular depression
  - mechanism? Ischemia, interruption, disconnection, inflammation
Depression
- in dementia

- Having vascular disease and having evidence of subcortical ischemia are risk factors for cognitive impairment
- Cognitive impairment, especially subcortical, is a risk factor for depression.
- Depression exacerbates apparent cognitive deficits
“Vicious cycle” of vascular cognitive impairment and depression

- Vascular disease causes subcortical ischemia and cognitive impairment
- Vascular cognitive impairment is a risk factor for depression
- Subcortical ischemia makes depression more resistant to treatment
- Depression exacerbates the severity of cognitive deficits
Depression
- *in subcortical dementia*
  - Ischemic damage to frontostriatal brain regions (either from cerebrovascular disease or systemic hypotension)
    - executive dysfunction
    - psychomotor slowing
    - resistance to treatment
What about pseudo-dementia?

- “pseudodementia”
  - Presentation with cognitive symptoms such as loss of memory and vagueness, as well as prominent slowing of movement and reduced or slowed speech that is due to depression, not dementia
  - Reversible?
Depression - in dementia

- Pseudo dementia?
  - Although cognitive symptoms are seen to improve with treatment of depression...
  - On follow-up, most patients develop further cognitive decline over time, and are diagnosed with an irreversible dementia
Depression - *in dementia*

Pseudo dementia?

- Truly reversible causes of dementia are much more rare than previously thought
- Depression is less likely an *imitator* of dementia than a *predictor* of dementia
Depression - *in dementia*

Pseudo dementia?

- In most cases the dementia is real and likely to persist or progress despite the treatment of depression
- Patients with dementia should still be screened and treated for depression
- Successful treatment of depression may not reverse the dementia but may improve function and quality of life
Depression - *in dementia*

- When do we suspect depression in the evaluation of early cognitive decline?
  - Long response latency
  - Quick to give up
  - “I don’t know”
  - Impaired attention
  - Variable performance
  - Awareness of “deficit”
## Depression in dementia

<table>
<thead>
<tr>
<th>Sign/symptom</th>
<th>Dementia</th>
<th>Depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onset</td>
<td>Gradual; over months/years</td>
<td>Onset over weeks</td>
</tr>
<tr>
<td>Duration</td>
<td>Chronic</td>
<td>Acute or chronic</td>
</tr>
<tr>
<td>Memory</td>
<td>Recent memory impairment &gt; remote</td>
<td>Slower to recall; delayed responses to questions</td>
</tr>
<tr>
<td>Communication</td>
<td>Difficulty finding words</td>
<td>Slow speech and thought</td>
</tr>
<tr>
<td>Orientation</td>
<td>Impaired as disease progresses</td>
<td>Usually not impaired</td>
</tr>
<tr>
<td>Sleep-wake cycle</td>
<td>Day-night reversal</td>
<td>Early morning awakening</td>
</tr>
<tr>
<td>Appetite and activity</td>
<td>variable</td>
<td>variable</td>
</tr>
<tr>
<td>Insight into Δ in cognition</td>
<td>apathy</td>
<td>concern</td>
</tr>
</tbody>
</table>
Depression in the elderly

• Management
  – Addressing psychosocial factors
    • Functional decline and social supports
  – Antidepressant medications
    • SSRI, SNRI
    • Common causes of treatment failure
      – Suboptimal dosing
      – Inadequate trial duration
    • High risk of relapse
  – ECT, psychotherapy
Depression - in dementia

- Evidence for pharmacologic treatment of depression in dementia
  - Post stroke - good evidence
    Cochrane Database Syst Rev 2012 Nov 14;11.
  - Dementia – weaker evidence
    Nelson. JAGS 2011;59
Depression - in dementia

- Should antidepressants be discontinued in dementia? *Bergh. BMJ 2012;344*
  - Significant increase in depressive symptoms 6 months later

- Some evidence for reduction in symptoms of agitation in dementia with SSRI’s
  *Cochrane Database Syst Rev 2011 Feb 16;(2).*
Depression
- in dementia

- Nonpharmacological interventions - other than drugs, what else can we do?
  - Exercise
    - No clear evidence that exercise alleviates depressive symptoms in nursing home patients with dementia
    - AD patients with higher levels of activity have lower rates of depressive symptoms
Depression
- *in dementia*

- Nonpharmacological interventions - other than drugs, what else can we do?
  - Exercise
    - Significantly less decline in ADL score over 12 months *Rolland. JAGS 2007; 55:158-165*

→ Exercise is a good thing, but may not have a great effect on altering the symptoms of depression in dementia
Depression - in dementia

- Nonpharmacological interventions - other than drugs, what else can we do?
  - Music therapy – individualized preferences
    - Benefits on mood and behavior  
      - Guetin. Encephale 2009
  - Bright light therapy
    - Mixed results
Depression - in dementia

- Humor – weekly “Elderclowns” *Goodenough Int Psychogeriatr 2012*
  - No significant effect on depression
  - Significant reduction in agitation
Depression - in dementia

- Nursing guideline on depression in nursing home residents with dementia

Verkaik. In J Geriatr Psych 2011;26

- 9 nursing homes
- Training for CNA’s
  - Person centered approach to
    - Increasing pleasant activities
    - Decreasing unpleasant events
Depression
- *in dementia*

- Nursing guideline on depression in nursing home residents with dementia
  
  Verkaik. *In J Geriatr Psych 2011;26*

1. Collect data on life history, personality, preferred and dislike activities (resident and family)
2. Pleasant Activities Plan: preferred music, jokes, outings (garden, animals)
3. Plans integrated into daily care
Depression - in dementia

- Nursing guideline on depression
  Verkaik. In J Geriatr Psych 2011;26

- Significant reduction in severity of depressive symptoms

- Successful guideline introduction
  - 3 wards = successful
  - 4 wards = moderately successful
  - 2 wards = not successful
    - “needed support from management, involvement of non-CNA’s and nursing helpers.”
Depression
- in dementia

- Identifying, preventing, managing depression should be routine part of dementia care

→ Delirium
- in dementia

- Identifying, preventing, managing delirium should be routine part of dementia care
Delirium

- defined

- Acute confusion
  - New confusion in someone who had normal cognition before
  - Worsened confusion in someone who was forgetful or demented before
Delirium

Confusion Assessment Method

Inouye

- Acute onset & fluctuating course
- Inattention
- Disorganized thinking
- Change in level of consciousness
Delirium - defined

Acute onset and fluctuating course

➢ It’s important to know what their cognition was before
  ▪ Baseline memory screen
  ▪ The family can be quite helpful
Delirium - defined

Inattention

- Can she follow the thread of a conversation and answer appropriately?
- Able to stay on topic?
- Able to switch topics?
- Is he easily distracted by unimportant things?
Delirium
-defined
Testing Inattention
- Spelling WORLD backwards
- Serial subtractions
- Months/days backwards
- Count backwards from 10 to 1
Delirium - defined

Disorganized thinking

- talking off topic, trouble keeping track of the interview, easily confused.

- recurring thoughts might intrude, patients could be excessively absorbed with ordinary objects in the environment.
Delirium - defined
Disorganized thinking

- Disorientation
- Fear, irritability, apathy.
- Hallucinations, delusions
Delirium -defined
Disturbance in level of consciousness

- Hyperactivity:
  - restlessness, picking, trying to get out of bed, shouting.

- Hypoactivity:
  - lethargy, staring into space, falling asleep as you’re talking to them, sleeping all day, being difficult to arouse fully, answering very slowly or quietly.
Delirium - prevalence

- Very common
  - 8-9% prevalence in nursing homes
  - 15-60% hospitalized elderly

- Associated with increased morbidity and mortality
Prognosis
- after delirium

- increased risk of developing dementia or more rapid cognitive decline
- residual cognitive impairment up to 6 months
- increased risk of death
Prognosis
-after delirium

- increased risk of complications
  - pressure sores, falls, urinary incontinence, infections, poor nutrition
  - prolonged hospitalization
  - functional decline
Delirium
Why is delirium not always recognized?

- Delirium is less likely to be detected by health care providers in the setting of:
  - Age over 80
  - Impaired vision
  - Pre-existing cognitive impairment or dementia

Voyer et al. BMC Nursing 2008, 7:4
Why is delirium not always recognized?

Potentially complicating factors:

- depression
- sensory deprivation
  - hearing loss and cognitive assessment
  - visual loss and misperceptions/hallucinations
Why is delirium not always recognized?

- Dementia
  - Vascular dementia
  - Lewy Body Dementia
  - Any dementia, not previously recognized
    - Makes superimposed delirium more likely
<table>
<thead>
<tr>
<th></th>
<th>Delirium</th>
<th>Dementia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Onset:</strong></td>
<td>sudden (hrs-days)</td>
<td>gradual (mos to yrs)</td>
</tr>
<tr>
<td><strong>Duration:</strong></td>
<td>short (days-wks)</td>
<td>chronic</td>
</tr>
<tr>
<td><strong>Attention:</strong></td>
<td>impaired</td>
<td>usually intact</td>
</tr>
<tr>
<td><strong>LOC:</strong></td>
<td>↑ or ↓</td>
<td>usually unaffected</td>
</tr>
<tr>
<td><strong>Course:</strong></td>
<td>fluctuating</td>
<td>stable</td>
</tr>
<tr>
<td><strong>Thoughts:</strong></td>
<td>disorganized</td>
<td>impoverished</td>
</tr>
<tr>
<td><strong>Memory:</strong></td>
<td>impaired</td>
<td>impaired</td>
</tr>
</tbody>
</table>
Differentiating delirium from dementia

- Almost entirely derived from history, most easily from family member/caregiver.
  - *Before she got ill, say last month, did she have any trouble with her memory?*
    - Did she repeat questions/conversations
    - Did she forget names that she should know
    - Did she forget conversations, birthdays, outings...
    - When did you first notice this?
  - *Has there been a change recently, since she got ill?*
Baseline cognitive status

- Getting an idea of baseline cognitive status is invaluable for diagnosing, monitoring and managing delirium
  - MMSE if available
  - The history
Baseline cognitive status

- Patients with pre-existing cognitive impairment are at greater risk of developing delirium in-hospital and post-operatively
  - the risk of delirium should be discussed during the preoperative consent process.
  - The risk of delirium should be discussed when considering hospital transfers from nursing home.
Delirium and Dementia

- Not only does dementia raise the risk of developing delirium,
  But:
- Having an episode of delirium raises the risk of developing dementia, and of accelerated and long-term cognitive and functional decline in dementia.

_Fick JAGS 2002 50(10)_
Delirium and Dementia

- How does delirium potentially cause permanent cognitive decline?
  - Inflammatory mediators crossing into the CNS and causing cell death

- More common with age and dementia
  - Inflammatory system already relatively ramped up
  - Brain cholinergic neurons are involved in controlling neuroinflammation and neurotoxicity
    - Loss of cholinergic neurons in dementia
Risk factors and Causes

- Age: especially > 80 years
- Male
- Pre-existing cognitive impairment
  - A little forgetful → quite demented
- History of stroke or Parkinson’s disease
Risk factors and Causes

- impaired vision or hearing
- baseline impairment in ADL
- Multiple comorbidities/frailty
Risk factors and Causes

- multiple medications
  - benzodiazepines, other hypnotics and sedatives
  - Anticholinergic (e.g. gravol)
  - opioid/narcotic
  - Withdrawal
- ETOH abuse
Risk factors and Causes

- New acute medical problem
  - infection (bladder, lung)
  - CHF
  - metabolic disturbance
  - dehydration
  - Sepsis
  - Fever or hypothermia
  - Hypotension
- Exacerbation of chronic medical problem
Risk factors and Causes

- Surgery (esp. neuro, ortho, cardiovascular)
  - anaesthetic, meds, pain, change in environment
  - sleep deprivation
  - Immobilization (restraints, Foley, bedrest)
- Urinary retention
- Fecal impaction
Delirium is caused by Meds (meds, meds) Infections, CHF, Metabolic derangements, surgery

Delirium is associated Increased inflammatory Markers/cytokines

Dementia can result From delirium and Is a risk factor for Delirium.

An episode of delirium Can last much longer Than the precipitating event
Management of delirium

- Literature supports certain principles of prevention and management.
  - good evidence for prevention
  - Most evidence for management interventions in surgical patients, particularly orthopedics.

Management of delirium

Hospital Elder Life Program (HELP)

*Inouye et al., New England Journal of Medicine, 1999*

Intervention protocols for the management of 6 known delirium risk factors

- 852 patients, 70 years or older.

1. Cognitive impairment
   - frequent re-orientation (at least tid)
   - board with names of staff, the day’s schedule
2. Hearing impairment
   - removed wax, put hearing aids in.

3. Visual impairment
   - glasses
   - fluorescent tape on call bell
   - large illuminated telephone keypad
4. Sleep deprivation
   - sleep enhancement protocol
     - quiet hallways: silent pill crushers, vibrating beepers
     - rescheduling medications, vitals, etc to “while awake”.
   - Nonpharmacologic sleep protocol
     - at hs: warm drink (milk, herbal tea)
     - relaxation tapes or music, back rubs
Management of delirium
Inouye et al., New England Journal of Medicine, 1999

5. Dehydration
- encourage po intake of fluids
- early recognition and treatment

6. Immobility
- early mobilization, tid
- minimize use of catheters or restraints
Management of delirium

- These interventions resulted in significant reductions in number and duration of episodes of delirium (OR 0.6).

- Management of delirium starts with prevention
Management of delirium

Reducing Delirium After Hip Fracture: A Randomized Trial.

Geriatrics consultation on elderly orthopedic patients structured on 10 known risk factors.

- 1. Adequate CNS oxygen delivery
- 2. Fluid/electrolyte balance
3. Treatment of severe pain:
   a) Around-the-clock acetaminophen (1 gram four times daily). b) Break-through pain: low-dose subcutaneous morphine, avoid meperidine

4. Elimination of unnecessary meds:
   a) Discontinue/minimize benzodiazepines, anticholinergics, antihistamines
Management of Delirium
Post op Hip Fracture Marcantonio et al. 2001

5. Regulation of bowel/bladder function:
   a) Bowel movement by postoperative day 2 and every 48 hours
   b) d/c urinary catheter by postop day 2, screen for retention or incontinence
Management of Delirium
Post op Hip Fracture Marcantonio et al. 2001

- 6. Adequate nutritional intake:
  - a) Dentures, proper positioning for meals, assist as needed
  - b) Supplements: 1 can Ensure, 3 cans Ensure for poor oral intake
- 7. Early mobilization and rehabilitation
Management of Delirium

Post op Hip Fracture Marcantonio et al. 2001

- 8. Prevention, early detection, and treatment of major postoperative complications

- 9. Attention to environmental stimuli:
  - a) Use of glasses and hearing aids
  - b) Provision of clock and calendar
Management of Delirium

Post op Hip Fracture Marcantonio et al. 2001

10. Treatment of agitated delirium:
   a) Appropriate diagnostic workup
   b) For agitation: calm reassurance, family presence, and/or sitter
   c) For agitation, if absolutely necessary, low-dose haloperidol 0.25-0.5 mg every 4 hours as needed
Management of Delirium

Post op Hip Fracture Marcantonio et al. 2001

- Adherence to recommendations: 77%
- ↓ RR delirium: 0.64
- ↓ RR severe delirium 0.40
- No change in LOS

- In higher risk populations, management starts with prevention, and the principles of prevention and treatment are the same
Management of delirium

- Recognizing the diagnosis
  - Education of health care workers
  - Corroborated baseline history
  - Documented cognitive assessment
  - Noticing changes in status, including reduced level of consciousness
Management of delirium

- Work up for precipitants
  - Physical exam:
    - General medical – looking for underlying precipitants
    - Neuro exam
  - Blood work, cultures, xrays as indicated
Management of delirium

- Treat any associated medical problems
  
  BUT

- It is important to recognize that:
  - It can take longer for delirium to clear than it does to treat the associated infection, CHF, metabolic derangement, or “polypharmacy” issues.
Delirium management

nonpharmacologic measures

- Supportive measures
  - glasses and hearing aids
  - calming and reorientation
  - team approach
  - communication
  - involve family members and sitters
Delirium management
nonpharmacologic measures

- sleep protocols
  - uninterrupted sleep
  - nonpharmacologic measures at bedtime
  - out of bed during daytime
Delirium management
nonpharmacologic measures

- Supportive measures
  - Fluid and nutritional intake
  - Avoid physical restraints
    - including catheters, IV’s
  - Attention to bowels and bladder
  - Mobilize
Delirium management

nonpharmacologic measures

- In frail patients, there may be a cumulative effect of many vulnerabilities – small gains in several factors may yield impressive results overall.
Delirium management
review medications

- Pain control
  - minimize opioids/narcotics
  - avoid Demerol
  - Low dose morphine or dilaudid, if necessary.
  - regular dosing of regular tylenol can reduce the need for opioids.
Delirium management

review medications

- Sleeping pills
  - Avoid starting (or abruptly stopping) benzo’s or z-hypnotics
- Any anticholinergic med:
  - tricyclic antidepressants (TCA), antihistamines, bladder stabilizers
  - Gravol – very anticholinergic and best avoided.
- Dopaminergic agents, digoxin, seizure meds

- Bottom line -
  Any medication can be suspect, especially those with CNS effects
Delirium management

**Pharmacological measures**

- Verbal comfort/reassurance, sitter/family member are preferable to drug therapy.
- There are no drugs with proven indication to treat delirium.
Delirium management
Pharmacological measures

- There is a great potential for making things worse:
  - prolonging the delirium
  - converting to hypoactive delirium or stupor
  - increasing risk of falls/aspiration.

- medications may be indicated
  - if threat of harm to self or others
  - frightening hallucinations/delusions
Delirium management

Pharmacological measures

- Benzodiazepines generally fall in the category of making things worse
  - Except in withdrawal (ETOH or benzo)
  - For necessary sedation in the ICU
    - Dexmedetomidine – αadrenergic agonist – less deliriogenic alternative for sedation in the ICU
- People with real histories of an anxiety disorder
Delirium management

Pharmacological measures

Anti-psychotics

- Traditionally, haloperidol is used.
  - Helpful in control of agitation and psychotic symptoms.
  - No evidence that the cognitive abnormalities resolve any sooner
  - ? ?Haldol for prophylaxis
Delirium management

**Pharmacological measures**

- **Haloperidol**
  - Avoid in Lewy Body Dementia or Parkinson’s Disease
  - Low doses - to avoid prolonging confusion, converting to hypoactive, adverse effects, falls
  - Haldol 0.5 – 1 mg po (bid, q4h prn), 0.25-0.5 ($\leq 2$ mg) IM

Delirium management

**Pharmacological measures**

- Atypical antipsychotics
  - effects also only on noncognitive aspects (psychotic symptoms, agitation)
  - agitation versus sedation
  - No difference in efficacy compared to haloperidol
  - Side effect profile
    - re: EPS or QT prolongation
Case – Margaret and Bert

- 83 year old woman who lives with her husband
- She had a stroke a few years back, and her memory hasn’t been quite the same since.
- Bert takes care of paying the bills, lays out the pills for the both of them, keeps an eye to make sure the burners are turned off, and they do the shopping together.
• One Saturday, Margaret says she feels tired and wants to take a nap after lunch.

• She wakes up 30 minutes later, struggles to get off the couch, and rushes to the bathroom.

• She loses some urine on the way, and it soaks down the leg of her pants. She goes into the bedroom to change her pants. Bert finds she still smells of urine, and finds out that she only changed her pants, not her underwear.
Margaret seems confused and upset, and calls Bert “Richard” by mistake, which is their son’s name. She says “Richard, what are we having for lunch”, when in fact she and Bert have already had lunch. Bert reminds her they’ve already eaten, and she gets angry and argues with him.
• Although Margaret has had a less-than-perfect memory since her stroke, this is a big, sudden change. This is not the same Margaret as yesterday.

• This is DELIRIUM

• Margaret needs assessment for precipitants of delirium.
It turns out that Margaret has a bladder infection. She is sent home from the ER with a prescription for an antibiotic.

The doctor tells Bert that she may still have some confusion for a few days or even weeks, even after the antibiotic has started working on her bladder infection.
Case – Mrs. Duncan

- 83 year old lady with hypertension, hypothyroidism, GERD, and osteoarthritis of the knees and hips.
- She slipped on the curb taking out the garbage, and broke her hip. Fortunately her neighbour saw her on the driveway and called the ambulance. She underwent hip surgery successfully.
• On the doctors’ rounds she is quiet and appears to be sleeping. Everything seems to be on track; no problems are recorded in the medical record.

• However, a closer look shows that Mrs. Duncan is drowsing away most of the day, everyday. She occasionally wakes up and cries out, and her nurses have been assuming that she is in pain so are medicating her with opioids from the standing orders. She has been too sleepy to work with the physiotherapist.

• Sometimes at night she is quite restless and even agitated. Nursing has been giving her some analgesic to help get her to settle.
This is HYPOACTIVE DELIRIUM

- I would suspect overmedication but there could be another causative factor to account for her decreased level of consciousness and nocturnal agitation. She might have a metabolic abnormality, or an infection.

- Next day, the doctor orders blood work and a urinalysis. Examination finds a tender abdomen. Abdo x-ray shows constipation.

- Laxatives are given, opioid doses are reduced, regularly dosed acetaminophen is started.
• Next day she is a little more awake, but confused and scores 16/30 on the MMSE (no baseline available).

• The physio starts to work with her again.

• By the end of the week her MMSE is up to 26/30. She does have pain on starting to mobilize, which is treated with a low dose of hydromorphone.

• Mrs. Duncan’s delirium clears and she recovers sufficient mobility to return home with supports.
Case – Mrs. Roberts

- 83 year old woman with moderate stage dementia.
- Lived with daughter, who arranged for her mother to go to a nursing home as her care needs were increasing.
- There is a several week period of increased agitation after admission, where Mrs. Roberts is upset and wants to go home.
- She is prescribed a night time sedative and an antipsychotic during the day as she is scaring the other residents and has pushed a nurse who was trying to reorient her.
She seems to quiet down and settle in.

Her daughter visits and finds her quite drowsy several days in a row. She worries that she doesn’t seem to be eating much.

The following Monday, her daughter is quite upset as her mother doesn’t recognize her, and has undressed herself. Neither of these has ever happened before.
Nursing home staff take the daughter’s observations seriously, as she was Mrs. Roberts’ primary caregiver prior to admission.

The doctor sees her the next day, reduces the sedating meds, orders bloodwork which shows that she is dehydrated. They decide to try oral hydration first, and fluids are offered regularly several times each shift.
Mrs. Roberts becomes more alert, starts to eat and drink more on her own.

Her daughter visits on the weekend, and says her mother is much more back to herself. The daytime antipsychotic is completely discontinued and the nighttime sedative is further reduced with the plan to discontinue next week.
In summary

- Delirium is a common problem.
- It is strongly associated with many negative outcomes.
- Recognizing it requires an understanding of what delirium is and information about baseline functional and cognitive status:
  - Baseline is key to diagnosing and following delirium
  - When in doubt, ask the family
In summary

Common causes of delirium

1. MEDS
   - Infection
   - CHF
   - Metabolic
   - Something else
In summary

Management of delirium includes:

- Medication Review
- treating underlying medical conditions
- attention to sensory deficits
- consistency of the environment
- frequent reorientation
- involving family members
In summary

Management of delirium includes:

- mobilization
- avoiding iatrogenesis
- taking out unnecessary lines and catheters
- a team approach
In summary

Management of delirium includes:

- **Education for family**
  - Family members are often deeply distressed by their relative’s condition and behaviour.
  - Further episodes may be prevented by addressing risk factors such as medications and sensory impairment.
  - Cognition may continue to improve over the ensuing months, but may never reach baseline
In summary

Medications for agitation in delirium

- There is no clear evidence for the superiority of haloperidol versus the atypical antipsychotics in managing agitation or psychotic symptoms in delirium.
- Lower doses are almost always better.
In summary

- Depression is common in the context of dementia
  - Shared pathophysiology between depression and vascular dementia
  - “vascular depression” may be more difficult, but not impossible, to treat
In summary

- Treating depression in the context of dementia may improve:
  - performance on cognitive testing
  - Functional status
  - Quality of life

- But is unlikely to significantly alter the course of the dementia.
In Summary

- A comprehensive management approach to depression and delirium in dementia should include:
  - Education and recognition
  - Pharmacological management
  - Non-pharmacological modalities
    - Person-centered team approach to patient care
Questions?

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