Dementia Summary Notes

In patients with early, non-specific signs of cognitive impairment, suspect dementia as a diagnosis

- Dementia: chronic, insidious syndrome of cognitive impairment that affects one or more area of cognition and interferes with daily function or independence
  - Needs to be a significant decline from baseline
  - Major neurocognitive disorder under the DSM5
- Note: mild cognitive impairment is a normal sign of aging, it **does NOT** interfere with ADL's, dementia is not a normal sign of aging and does interfere with ADLs

6 Areas of Cognition
(PMS CAMEL)

- **P**erceptual **M**otor
- **S**ocial
- **C**omplex **A**ttention
- **M**emory
- **E**xecutive **F**unction

Instrumental Activities of Daily Living
(Death)

- **D**ressing
- **E**ating
- **A**mbulating
- **T**oileting
- **H**ygiene

Activities of Daily Living
(SHAFT)

- **S**hopping
- **H**ousekeeping
- **A**ccounting
- **F**ood Preparation
- **T**ravel

In patients with obvious cognitive impairment,

- **Select proper laboratory investigations and neuroimaging techniques to complement the history and physical findings and to distinguish between dementia, delirium, and depression**
- **Consider possible contributing causes, including mental health, alcohol or substance use problems, or delirium**

TABLE 142-1 Features of Delirium, Dementia, and Psychiatric Disorder

Characteristic	Delirium	Dementia	Psychiatric Disorder
Onset	Over days	Insidious	Sudden
Course over 24 h	Fluctuating	Stable	Stable
Consciousness	Reduced or hyperalert	Alert	Alert
Attention	Disordered	Normal	May be disordered
Cognition	Disordered	Impaired	May be impaired
Orientation	Impaired	Often impaired	May be impaired
Hallucinations	Visual and/or auditory	Often absent	Usually auditory
Delusions	Transient, poorly organized	Usually absent	Sustained
Movements	Asterixis, tremor may be present	Often absent	Absent

- Delirium
  - Progresses over a few days
  - Causes of delirium: DIMS
    - D: drugs (medications, supplements, alcohol and other substances, withdrawal)
    - I: infectious/inflammatory (usually UTI in the elderly)
    - M: metabolic (electrolyte disturbances
    - S: structural (strokes, intracranial hemorrhage), cardiac and respiratory problems that decrease perfusion)
- Depression
  - Geriatric Depression Scale can be useful: http://www.stanford.edu/~yesavage/GDS.html

Use validated tests of cognitive function and careful functional inquiry, as well as a careful history (including collateral history from family and caregivers if available) and physical examination, to make an early positive diagnosis.

- Diagnosis of dementia requires:
  - A significant decline from baseline in one of the cognitive domains
  - Interference with daily function
  - Not due to delirium or another medical or psychiatric cause
- Various options of cognitive testing
  - MMSE
  - MOCA
  - Clock drawing
  - Trail making test
- Ask about ADLs/IADLs
  - Trying to capture cognitive limitations

In patients with dementia, distinguish Alzheimer's disease from other dementias, as treatment and prognosis differ.

Vascular Dementia

- Only non-neurodegenerative type
- Refers to cognitive impairment due to cerebrovascular disease or impaired cerebral blood flow
  - Includes strokes, intracranial hemorrhages but also cerebral small vessel disease
- Presentation is varied
- There may be no history of stroke
  - Points to various other cerebrovascular diseases that impair blood flow
- Diagnosis requires diagnosis of dementia, along with neuroimaging findings or history of a stroke that would be considered significant enough to cause the impairments seen
  - Treatment
    - Modifying stroke risk via anticoagulation
    - Antihypertensives
    - Diabetes management
    - Statins
    - Considerations: cholinesterase inhibitors or memantine

Lewy Body Dementia

- Distinguishing features
  - Visual hallucinations
  - Parkinsonism
  - Cognitive fluctuations
  - Dysautonomia
  - Sleep disorders
- Diagnosis
  - Diagnosis of dementia and 2+ features of
    - Fluctuating cognition with pronounced variations in attention and alertness
    - Recurrent visual hallucinations that are typically well formed and detailed
    - REM sleep behavior disorder, which may precede cognitive decline
    - One or more spontaneous cardinal features of parkinsonism (bradykinesia, rest tremor, or rigidity
- Treatment
  - Environmental and behaviour modification

Parkinson Disease Dementia

- Dementia that develops in the setting of established Parkinson disease
- Treatment
  - Treatment for Parkinson
    - Consider: cholinesterase inhibitors or memantine

Frontotemporal Dementia

- One of the causes of early onset dementia
- Two subtypes
    - Behavioural changes
        - Diagnoses requires 3 of the following
            - Disinhibition
            - Apathy
            - Loss of empathy
            - Hyperorality
            - Compulsive behaviours
            - Dysexecutive neuropsychologic profile
            -
    - Aphasia
        - Includes deficits in word finding, usage, comprehension or sentence construction
        - Still relatively intact memory and other cognitive domains
        - Diagnosis requires all of:
            - The prominent feature is language difficulty
            - The language deficits impair activities of daily living
            - Aphasia is the main deficit at symptom onset and early in the course.
        - And they must not have:
            - Deficits better explained by other medical, structural or psychiatric disorders.
            - Prominent deficits in episodic or visual memory or visuoperceptual impairments
                - Behavioural disturbance at onset.

Alzheimer's Disease

- Neurodegenerative disease caused by accumulation of neurotoxic extracellular amyloid plaques and tau protein within neurofibrillary tangles
- Development is multifactorial
    - Acquired and genetic factors
    - Risk is increased with
        - Hypertension, smoking, diabetes, dyslipidemia, air pollutions, pesticides, long term use of benzodiazepines and anticholinergics
    - Risk is reduced in those who are physically active
- Classified by age of onset and family history
    - Typical
        - >65 years of age
    - Early onset
        - <65 years of age with no family history
    - Inherited
        - Often 40s-50s years of age with family history
- Cardinal symptoms
    - Memory impairment
    - Executive function and judgement
    - Impairment in other cognitive domains
    - Behavioural disturbance and neuropsychiatric symptoms
- Diagnosis
    - The diagnostic criteria for dementia are met - A significant decline from baseline in one of the cognitive domains, interference with daily function, and not due to delirium or another medical or psychiatric cause.

Alzheimer's Disease continued…

- Diagnosis continued
  - As well as, insidious onset and gradual progression of impairment in at least two cognitive domains, and
  - Either
    - Evidence of a causative Alzheimer disease genetic mutation from family history or genetic testing, OR
    - All three of:
      - Clear evidence of decline in memory and learning and at least one other cognitive domain.
      - Steadily progressive, gradual decline in cognition, without extended plateaus.
      - No evidence of mixed etiology (ie, absence of other neurodegenerative disorders or cerebrovascular disease, or another neurological, mental, or systemic disease or condition likely contributing to cognitive decline).
- Treatment
  - Cholinesterase inhibitors
    - Donepezil, galantamine, rivastigmine
  - NMDA receptor antagonist
    - Memantine
    - Can be added for moderate to advanced dementia

In patients with dementia who exhibit worsening function, look for other diagnoses (i.e., don't assume the dementia is worsening). These diagnoses may include depression, infection, concurrent medical illness, substance use, etc.

- Rule out other causes of cognitive decline
  - i.e. delirium, assess for substance use, depression

When disclosing the diagnosis of dementia

1. Do so compassionately
2. Respect the patient's right to autonomy, confidentiality, and safety

In patients with dementia, assess competency to involve them in decision making, as appropriate to the situation

- Capacity: patient's ability to make an informed decision about an issue
- Competence: legal term referring to whether an individual has a legal right to make decisions for themselves
- Capacity assessment
  - Does the patient have the ability to
    - Understand a situation and the options
    - Express a choice
    - Appreciate the potential consequences of that choice
    - Provide some level of reasoning to support their decisions

In following patients diagnosed with dementia:

1. **Assess function and cognitive impairment on an ongoing basis.**
2. **Assist with and plan for appropriate interventions (e.g., deal with medication issues, behavioural disturbance management, safety issues, caregiver issues, comprehensive care plans, advanced care planning, driving safety, placement) in the context of disease progression**
3. **Manage comorbidities, including mental health problems based on the goals of care**
4. **Review pharmacotherapy (e.g. side effects, drug interaction, polypharmacy)**

- Patients should be seen at least annually
- Have good advanced care planning with patient and family
  - Ideally this happens early in the disease process while the patient is able to participate fully in the decision
  - Patients and family should be aware of the neurologic outcomes after cardiac arrest and similar events requiring resuscitation/intensive care can be poor
    - They should be encouraged to explore goals of care appropriate to their situation
    - These should be revisited intermittently
- Polypharmacy and side effects can be an issue for elderly patients
  - Discontinue non-essential medications and use caution when prescribing neuroleptics

Assess the needs of and supports for caregivers of patients with dementia

- Caring for patients with dementia can be challenging
- Provide supports to care givers
- Some online resources
  - https://alzheimer.ca
  - https://www.alz.org
  - https://dementiafriends.ca/
- Consider OT assessment, daily home care visits, long term care

In patients with early-onset dementia, consider genetic testing

- Three genes identified as having strong link to early development of Alzheimer's
- Amyloid precursor protein (APP)
  - Note: those with trisomy 21 have an additional copy of APP
    - Likely to develop Alzheimer's before age 50
- Presenilin 1 (PSEN1)
- Presenilin 2 (PSEN2)
- Important to fully understand risks and benefits of testing and consent should be documented
- Note: association between late onset Alzheimer's and gene APOEε4
  - Testing not recommended
    - Predictive value not great, clinical use limited

Report patients with dementia to the appropriate authorities if you suspect they should not be driving.

- Use cognitive scoring tools to assess level of impairment
- Severe impairment is an absolute contraindication to driving.
- Moderate impairment presents a high risk and driving should be seriously discouraged. If a patient or family insists that they continue driving further assessment must be completed.
- Mild impairment presents some additional risk from the general population but is not a contraindication to driving. If there is any concern or doubt, further assessment is recommended.
- Patients with mild or moderate impairment that continue to drive are at risk of deteriorating driving skills and have increasing risk with time. They should be followed closely for further cognitive decline. This means reassessment by the clinician at least every 6 to 12 months, sooner if a decline is suspected.
- Another helpful tool: Driving and Dementia Toolkit from Regional Geriatric Program of Eastern Ontario