Overview of approach to Dementia in Primary Care

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Learning Objectives

The learner will be to

- Differentiate between memory changes relating to normal aging, MCI and dementia.
- Appreciate its impact on individual, caregivers and society
- Describe the approach to assessment of dementia.
- Demonstrate knowledge of the common causes of dementia and how they differ from Alzheimer’s Disease.
- Understand approach to management of Dementia

Differentiating between normal aging, MCI and Dementia
What are Normal Age-related Changes?

- Rate of information processing ↑
- Acquisition performance (learning) ↑
- Early retrieval of new information ↓
- Delayed recall (forgetting) ↔
- Distractibility ↑
- Self reported memory loss ↑

Mild Cognitive Impairment

- Memory complaint
- Objective memory impairment
- Normal general cognitive function
- Intact activities of daily living
- 10-20% per year progress to dementia
- At 10 years 20% NOT demented
Definition of Dementia (DSM IV)

The diagnostic criteria include the presence of:

- memory impairment plus at least one other of the following features: aphasia, apraxia, agnosia or executive dysfunction
- associated with a decline from previous cognitive functioning and
- functional impairment (this differentiates dementia from MCI), usually affecting IADLs (Instrumental Activities of Daily Living)
- It's important that other causes of worsening cognition are considered before making a diagnosis of dementia. Depression and delirium are important differentials to consider.

Epidemiology of Dementia

- A new case worldwide every 7 seconds.
- A new case in Canada every 4 minutes (100,000 new cases per year), the prevalence will increase from now (450,000) to 750,000 by 2025.
- 3rd most expensive disease in the Canadian Healthcare System.
- 1 in 4 Canadians has a family member with dementia.
- 1 in 2 Canadians knows someone with dementia.
- Ontario has 100,000 demented drivers.
- It is estimated that by 2016 Ontario will spend $27.3 billion on dementia care compared to $3.8 billion in 1991.

Dementia: The Silent Epidemic
Changing Demographics of Dementia

Societal Impact of Dementia

The annual societal cost of care in 1998 per individual with Alzheimer's disease was estimated to be:

- $36,794 for severe disease
- $25,724 for moderate disease
- $16,054 for mild to moderate disease
- $9,451 for mild disease

Severity of AD in Community and LTC
Early Detection of Dementia

Why Try to Make an Early Diagnosis of Dementia?

- Helps family understand and make sense of the changes they have seen
- Early link of patient and family with informal and formal supports
- To prepare patient and family for the future course of the illness
- With mild dementia possibility of involving the patient in advanced care planning e.g., POA, living wills etc.
- Opportunity to modify risk factors e.g., DM, BP etc.
- Impact of non-pharmacological therapies probably greater e.g., cognitive and physical exercise
- Cholinesterase Inhibitors can delay symptomatic progression of dementia

Alzheimer’s Society 10 Warning Signs for Caregivers

1. Memory loss that affects day-to-day function
2. Difficulty performing familiar tasks
3. Problems with language
4. Disorientation of time and place
5. Poor or decreased judgment
6. Problems with abstract thinking
7. Misplacing things
8. Changes in mood and behaviour
9. Changes in personality
10. Loss of initiative
What arouses our suspicion for dementia?

- Family reports concerns re memory or function or behavior
- Change in personality, appearance or behavior
- Missed appointments
- New problems with medication compliance
- Forget to bring in their medications and can’t tell you what they’re taking
- Presence of risk factors (family history, vascular risk factors, previous head injury or stroke)

Estimating the risk for dementia

- Vascular risk factors:
  - Hypertension
  - Diabetes
  - Smoking
  - Hyperlipidemia
  - Atrial fibrillation
  - Hyperhomocysteinemia
  - Obesity

- Other risk factors:
  - Age (over 65)
  - Head injury
  - Family history
    - 1 parent = 2x risk
    - 2 parents = 10x risk
  - Apo E4 status
  - Lower education level

Impact of Dementia

Adapted from: Canadian Consensus Conference on Dementia, Patterson et al. Canadian Journal of Neurological Science 2001: 28: Suppl. 1 S3-S16.
Impact of Early AD

Alzheimer Disease and Behavioural Changes

Stage

Mild

- Memory Loss
- Behaviour
- Mood Swings
- Personality Changes
- Problems with Functions & Judgement

Impact of Moderate AD

Alzheimer Disease and Behavioural Changes

Stage

Mild Moderate

- Memory Loss
- Behaviour
- Mood Swings
- Personality Changes
- Problems with Functions & Judgement

Impact of Late AD

Alzheimer Disease and Behavioural Changes

Stage

Mild Moderate Severe

- Memory Loss
- Behaviour
- Mood Swings
- Personality Changes
- Problems with Functions & Judgement

- Incontinence
- Urinary & Bowel Problems
- Depression
- Unable to perform ADL
- Greater Care Required
- Placement in LTC
Progression of ADL loss in Alzheimer Dementia

Impact on Caregivers

- Mismatch between capacity and expectations
- Mismatch in present and past roles of individual
- Failure of individual affected to recognize or appreciate issues
- Behaviors and actions that challenge historical relationships
- Guilt of caregiver regarding need for help

AD Caregiver Time by Disease Severity

Hux et al., CMAJ, 1998.
Nursing Home Placement in AD

- Predictors of nursing home placement in AD include:
  - Worsening dementia
  - Cognitive impairment
  - Functional impairment
  - Troublesome behaviours
  - Increased caregiver burden
- Despite the burden, most families prefer to care for patients at home as long as possible
- Nursing home care is the largest component of direct AD healthcare costs


Impact on Formal Caregivers

- MD’s typically underestimate caseload by 50%
- MDs less likely be comfortable re issues of non-AD, driving, co-morbidities, BPSD and accessing community supports
- Formal Caregivers report behaviors such as aggression, calling out and disruptive behavior typically less well tolerated

Assessing for Dementia
Diagnosis of AD

Progressive decline in cognition and/or function:

1. History from patient and reliable informant
2. Mental and functional status assessments
3. Physical examination
4. Laboratory tests

- Onset & Duration
- Examples of symptoms
- Psychiatric factors
- Family history
- Neurological examination
- Rule out Depression/Delirium

Cognitive and Functional Activities Assessment

- Rule out:
  - Advanced drug effects
  - Neurological disease
  - Metabolic or systemic illness
  - CBC, TSH, electrolytes, glucose, albumin, CT or MRI in specific cases

Alzheimer’s disease

1. Disclose diagnosis to patient and family, and inform about the disease
2. If mild-to-moderate severity, initiate therapy as per treatment guidelines
3. Educate and support both patients and caregivers; refer families to support organizations

Other dementia

Assess further or refer

Examples of Office Cognitive Assessment Tools

Possible Dementia

- Dementia Quick Screen
- Folstein MMSE
- Montreal Cognitive Assessment (MOCA)
- Clock
- Trail Test

Physical Findings and Dementia

- Findings in Dementia
  - Neurological Findings
    - Periventricular lesions
    - Cortical atrophy
    - Tumors, lesions, calcification
    - Vascular disease, ischemic injury
    - Meningeal signs
    - Intracranial hypertension
    - Area II localized
- Associated Pathology
  - Cerebral amyloidosis
  - Corticosteroids
  - Stroke
  - Brain tumor
  - Intracranial hypertension
  - Seizures
In assessing a patient with dementia, it is critical to determine the impact on functional abilities. Typically the first functional areas affected are the instrumental ADLs (IADLs) – mnemonic: SHAFT
- S Shopping
- H Housework
- A Accounting
- F Food preparation
- T Transportation

Other areas of function affected early include driving, medication management, using the telephone and doing laundry.

### Investigations

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<th>All</th>
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<tr>
<td>HB and CBC</td>
<td>Serum B12</td>
<td>MRI</td>
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<td>Electrolytes</td>
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<td>SPECT or PET</td>
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<td>TSH</td>
<td>CT Scan</td>
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Clarfield criteria for CT:

- age < 70
- new onset dementia, < 1 year
- atypical presentation
- rapid unexplained deterioration
- unexplained focal signs, symptoms
- head injury
- incontinence, gait ataxia
- need for reassurance of patient, family


Atrophy in Alzheimer’s disease

Atrophy of the brain in AD: Medial temporal lobes are affected first and most severely

SPECT scan of normal control vs AD
Differential Diagnosis

Differential Diagnosis Considerations
- Depression
- Delirium
- Drug side effects
- Decompensated Chronic Disease
- B12 Deficiency
- Thyroid Dysfunction
- Hypercalcemia
- Tumour/Subdural
- Normal Pressure Hydrocephalus

Differentiating Depression and Dementia
Differentiating Delirium and Dementia

Common type of Dementia
- Alzheimer Disease 40-50%
- Mixed AD/Vascular Dementia 15-20%
- Lewy Body Dementia (+/- AD) 10-20%
- Frontotemporal Dementia (+/- AD) 5-10%
- Vascular Dementia 5-10%
- Normal Pressure Hydrocephalus
- Other 5%
- **Reversible <5%

Red Flags
- Visual hallucinations – (detailed / recurrent).
- Pronounced fluctuation in cognition over hrs/days.
- Parkinsonism (especially rigidity) / bradykinesia.
- Executive function worse than memory.
- Neuroleptic sensitivity.
- Unexplained falls / loss of consciousness.

**THINK OF:** **Lewy Body Dementia**
Red Flags
- Cognitive decline within 3 months of CVA / TIA.
- Focal neurological symptoms.
- Abrupt onset / stepwise decline.
- Previous CVA or TIA.
- Executive function worse than memory.

THINK OF: Vascular dementia
mixed AD / vascular

Red Flags
- Behavioral changes: disinhibition / apathy.
- Impulsivity / poor judgment.
- Self neglect / socially inappropriate.
- Executive function worse than memory.
- Language problems.

THINK OF: Frontotemporal Dementia

Red Flags
- Abnormal gait
- Incontinence early in course of dementia
- Rapidly progressing dementia

THINK OF: Normal Pressure Hydrocephalus (NPH)
Physician role in Managing Dementia

• careful assessment, identification of all contributory factors and probable diagnosis
• communicating the findings and diagnosis and discussing probable natural history and treatment options

Disclosure of Diagnosis

• The process of diagnostic disclosure for persons with cognitive impairment or dementia must begin as soon as the possibility of cognitive impairment is suspected. (Level 3, Grade A: 88%)  
• Both the diagnosis of dementia and the disclosure of the diagnosis must be considered processes that provide opportunities for education and discussion. (Level 3, Grade A: 100%)  
• The potential for adverse psychological consequences must be assessed and addressed through education of the patient and family/caregivers. (Level 3, Grade B: 100%)  
• Once a diagnosis is established, this must be disclosed to the patient and their family/caregivers in a manner that is consistent with the expressed wishes of the patient. (Level 3, Grade B: 89%)  
• Follow-up plans must be made and discussed at the time of diagnostic disclosure. (Level 3, Grade A: 97%)
Physicians role in Managing Dementia

- careful assessment, identification of all contributory factors and probable diagnosis
- communicating the findings and diagnosis and discussing probable natural history and treatment options
- responding to common questions and concerns

Common Questions and Concerns

- What "type and severity of dementia" is present?
- What is the prognosis and timeline?
- What are typical symptoms of disease we can expect as it progresses?
- Are other members of family going to develop similar problems?
- What prescription medications or over-the-counter (including herbal or experimental) remedies may be useful?
- What restrictions should be placed on the patient’s current activities or lifestyle?
  - Finances
  - Power of Attorney
  - Driving
  - Need for LTC

Physicians role in Managing Dementia

- careful assessment, identification of all contributory factors and probable diagnosis
- communicating the findings and diagnosis and discussing probable natural history and treatment options
- responding to common questions and concerns
- optimizing of cognitive, medical and functional status and reduction of ongoing risk factors.
Optimizing of cognitive, medical and functional status and reduction of ongoing risk factors

- Common co-morbid medical conditions to review include: cardiovascular disease, pulmonary disease, hypertension, DM, renal insufficiency, arthritis, and diminution of vision/hearing.
- Review and rationalize medication usage.
- There is good evidence for following in terms reducing ongoing risk of stroke and possibly dementia:
  - Treat systolic hypertension (>160mm) in older individuals.
  - ASA and statin medications following myocardial infarction; antithrombotic treatment for non-valvular atrial fibrillation; and correction of carotid artery stenosis >60%.
- Insufficient evidence that treatment of type 2 diabetes, hyperlipidemia and hyperhomocysteinemia reduces the risk of dementia.
- There is good evidence to avoid the use of estrogens for purpose of reducing the risk of dementia.
- High dose vitamin E (≥400 units/day) should not be recommended.

Physicians role in Managing Dementia

- Careful assessment, identification of all contributory factors and probable diagnosis.
- Communicating the findings and diagnosis and discussing probable natural history and treatment options.
- Responding to common questions and concerns.
- Optimizing of cognitive, medical and functional status and reduction of ongoing risk factors.
- An anticipatory care plan sensitive to ethico-legal issues that includes monitoring, mobilization of patient and caregiver supports and adjustment of strategies.

Care of the patient with Dementia (I)

- Inform and teach the patient, family and caregivers about the nature and progression of the disease.
- Refer to Alzheimer’s society.
- Review Driving.
- Advice re Power of attorney.
- Genetic testing?
- Discuss future plans and availability of community supports.
Caregiver Supports

The clinician should:

• enquire about caregiver information and support needs;
• provide education to patients and families about dementia; and,
• assist in recruiting other family members and formal community services to share the caregiving role.
• It is important that the clinician enquire about disruptive behaviors and the effect they are having on the caregiver.
• If available suggest referral of patients to services such as
  • Alzheimer Society (http://alzheimerontario.org/),
  • First-Link Program (www.alzheimerott.org/first_link),
  • Community Care Access Center,
  • Community Support Services such as meals on wheels, friendly visitor programs, volunteer drivers,
  • Respite and Day Care Programs.

Care of the patient with Dementia (II)

• Maintain high level of activity (exercise programs, daily activities).
• Nutrition. Check for weight loss and nutritional indices (B12, albumin)
• Encourage personal and social functions as much as possible
• Actively treat gerovascular risk factors: atrial fibrillation, hypertension, hyperlipidemia and diabetes (consider ECASA 81-325 mgm)
• Consider AChEI therapy
• Establish patient/caregiver expectations re: therapy, goals, and target symptoms for monitoring (can also keep diary).

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• an anticipatory care plan sensitive to ethico-legal issues that includes monitoring, mobilization of patient and caregiver supports and adjustment of strategies
• Use of ACEI's and Memantine
Benefits of AChEIs?

• AChEIs are “symptomatic” drugs (control symptoms but do not affect the progression of the disease).
• The risk of no treatment is 100% progression.
• Side effects are usually mild & self-limited (tell patients to consult again if not resolved within 1/52).
  • GI: nausea, vomiting, diarrhea, bloating, anorexia.
  • Muscle cramps, fatigue, dizziness, incontinence.
  • Sleep disturbance: insomnia, nightmares.
• Cholinergic effects may affect asthma, ulcers, bradycardia / heart block (do ECG if cardiovascular history / risk factors).

What’s the Bottom Line re ACEI’s?

• Current evidence suggests the three Cholinesterase Inhibitors used in Canada have similar efficacy at maximum recommended doses.
• However, the need for single dosing, and shorter titration favors initial use of Donepezil at this point in AD and VD. In AD+CVI balance in favor of Galantamine.
• Some evidence to suggest may be worth switching ACEI if non-responder or adverse effects.

Switching ACEI’s

• Patients can be switched from one cholinesterase inhibitor to another. A decision to make a switch is based on the judgment of the prescribing physician and the patient about the relative benefits and risks of making a change in the patient’s pharmacotherapy. If adverse effect suggest use one with different mode of action.
  • If non-gi side-effects switch donepezil or galantamine with rivastigmine.
  • If gi side-effect switch to donepezil.
  • If sleep disturbance use other than donepezil.
• Remember rule of 5 half-life’s re wash out ie 2 wks for donepezil and 2 days for galantamine or rivastigmine.
Memantine/Donepezil in Advanced AD: Summary

Memantine/donepezil-treated patients demonstrated benefits in:

- Cognition, as shown by improvement in scores on the SIB scale versus placebo/donepezil
- Activities of daily living, as shown by a slower decline on the ADCS-ADL scale versus placebo/donepezil
- Global function, as shown by a clinician’s assessment of change reflected by a slower decline in CIBIC-plus scores versus placebo/donepezil
- Behaviour, as shown by improvements on the NPI total score versus placebo/donepezil

The memantine/donepezil combination was safe and well tolerated in this patient cohort. Data suggest that a memantine/CHEI combination may be useful in patients with advanced AD.

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- Memantine has conditional approval for use in moderate to severe dementia in combination with ACEI or in isolation. Some preliminary evidence for role in VD.

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- Some evidence to suggest may be worth switching ACEI if non-responder or adverse effects
- Memantine has conditional approval for use in moderate to severe dementia in combination with ACEI or in isolation. Some preliminary evidence for role in VD.
- Vascular/Mixed Dementia:
  - Treat all vascular risk factors
  - Vascular - CSIs-some evidence
  - Mixed: modest evidence in favor of galantamine
Physicians role in Managing Dementia

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- communicating the findings and diagnosis and discussing probable natural history and treatment options
- responding to common questions and concerns
- optimizing of cognitive, medical and functional status and reduction of ongoing risk factors.
- an anticipatory care plan sensitive to ethico-legal issues that includes monitoring, mobilization of patient and caregiver supports and adjustment of strategies
- Use of ACEI’s
- collaboration with other health providers and community agencies

Ongoing Management and Treatment of Dementia

Ensure that caregivers are well supported and connected with local Alzheimer Society.
Consider the possibility of delirium when there is a sudden decline in function or new problem.
Consider using the P.I.E.C.E.S. framework to evaluate new behavior problems
Physical (discomfort, drugs, delirium, pain)
Intellectual (aphasia, amnesia, apraxia, agnosia, etc)
Emotional (anxiety, depression)
Capacities (expectations matching remaining capacities?)
Environment (too noisy, agitating, perceived as hostile?)
Social-cultural (likes/dislikes, past traumas reactivated?)
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- an anticipatory care plan sensitive to ethico-legal issues that includes monitoring, mobilization of patient and caregiver supports and adjustment of strategies
- Use of ACEI’s
- collaboration with other health providers and community agencies
- identification of psychiatric co-morbidities
- monitoring for and anticipating common issues and concerns (driving, delirium, disruptive behaviors, sleep disruption etc)

Recommendations re Driving and Dementia *

- Clinicians should counsel persons with a progressive dementia (and their families) that giving up driving will be an inevitable consequence of their disease.
- No single brief cognitive test (e.g., MMSE) or combination of brief cognitive tests has sufficient sensitivity or specificity to be used as a sole determinant of driving ability.
- Abnormalities on cognitive tests such as the MMSE, clock drawing, and Trails B should result in further in-depth testing of driving ability.
- Driving is contraindicated in persons who, for cognitive reasons, have an inability to independently perform multiple IADLs (e.g., medication management, banking, shopping, telephone use) or any of the basic ADLs (e.g., toileting, dressing).
- For persons deemed safe to drive, reassessment of their ability to drive should take place every 6 to 12 months or sooner if indicated.

* Third Consensus Conference on Detection and Treatment of Dementia 2005

Common Issues: Disruptive behaviours

- Disruptive behaviors or behavioral and psychological symptom of dementia (BPSD) are a common feature in the management of dementia.
- The management of BPSD should begin with appropriate assessments, diagnosis, and identification of target symptoms and consideration of safety of the patient, their caregiver and others in their environment.
- Non-pharmacological treatments should be initiated first.
- Pharmacological interventions for BPSD should be initiated at the lowest doses, titrated slowly and monitored for effectiveness and safety.
  - Risperidone and olanzapine can be used for severe agitation, aggression and psychosis.
  - Benzodiazepines should be used only for short periods in situations where alcohol or benzodiazepines withdrawal is present.
  - SSRIs can be used for the treatment of severe depression.
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- an anticipatory care plan sensitive to ethico-legal issues that includes monitoring, mobilization of patient and caregiver supports and adjustment of strategies
- Use of ACEI’s
- collaboration with other health providers and community agencies
- identification of psychiatric co-morbidities
- monitoring for and anticipating common issues and concerns (driving, delirium, disruptive behaviors, sleep disruption etc)
- consultation with specialist services as needed

Reasons to Consider Referral

- Continuing uncertainty about diagnosis
- Request by patient or family for another opinion
- Presence of significant depression, especially if there is no response to treatment
- Problems with or failure of treatment with new medications specific for Alzheimer’s disease
- Need for additional help in managing the patient (e.g. behavioral problems) or supporting the caregiver (e.g. home care programs, Alzheimer Society)
- When indicated for genetic counselling
- For entry into clinical research trial