Dementia – the A,B,Cs

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Presented by: ***Ontario's Geriatric Steering Committee***

Implications for Practice

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Why is Dementia Care Critical?
(Understanding System Level impacts)

- 750,00 people with dementia in Canada and growing rapidly
- 90% of community-dwelling persons with dementia have 2 or more chronic diseases (e.g. CHF, DM, COPD) !!!!
  - high users of health care
- ICES and CIHI have demonstrated Dementia is the #1 driver of ALC (up to 1 million of 3 million ALC days per year across Canada)
  - Likely by destabilizing the control of other chronic diseases (Dementia Domino Effect)
- People with dementia are more likely to be tipped into delirium, have prolonged delirium and not recover to baseline (ALC, Long Lengths of stay)

Benefits of Early Diagnosis of Dementia

Social

- Social/financial planning
- Early caregiver education
- Safety: compliance, driving, cooking
- Advance directives planning
- Right/Need to know

Medical

- Reversible cause/component
- Risk factor treatment
- Compliance strategies
- Treatment of other diseases
- Drug treatment
- Crisis avoidance

Step 1: Screening

- Dichotomous
  - No problem vs. problem

- Approaches
  - Gestalt / impression (more severe cases)
  - Screening Tools (MOCA) for more subtle manifestations

Common Causes

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A daunting list of possibilities

THE ddx of DEMENTIA

D DEGENERATIVE DISORDERS
- Alzheimer's
- Picks
- Huntington's
- Diffuse Lewy Body Disease
- Parkinson's
- PSP
- Frontotemporal Dementia

E EMOTIONAL / Psychiatric
- Depression, Schizophrenia

M METABOLIC
- hepatic/renal failure, hypo/hyper Ca or Na

E ENDOCRINE
- Hypo/hyperthyroid, Hypo/hyperglycemia

N NUTRITIONAL DEFICIENCY
- B12, Folate, Thiamine (ex alcoholics)

T TOXICITY / TUMOUR / TRAUMA
- meds, meds, meds, meds, meds, meds, ...
- trauma +/- subdural, primary or metastatic tumour
- NPH (normal pressure hydrocephalous)
  - TRIAD - dementia, gait ataxia, urinary incontinence

I INFECTIONS
- chest, urine, CNS, HIV, Neurosyphilis, Jakob Creutzfeldt...

A ALCOHOL / Wernicke-Korsakoff

S STROKE
- Vascular Dementia due to cortical or subcortical

Assessment

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Step 2: Diagnosis

Those who have screened positive for cognitive impairment then need a diagnostic evaluation to determine the cause(s) of the cognitive impairment

RGPEO diagnostic Flow Chart

- Is the patient cognitively changing?
  - May decide not to investigate stable longstanding cognitive deficits
- Determine if the patient is depressed or delirious.
  - If history suggests an underlying dementia would inform family of the possibility and link them to the Alzheimer Society so they can learn about dementia but would defer the final diagnosis for 2 – 3 months until the patient has recovered from the depression / delirium
  - Refer to Modules on Depression and Delirium

RGPEO Dementia Assessment Tool

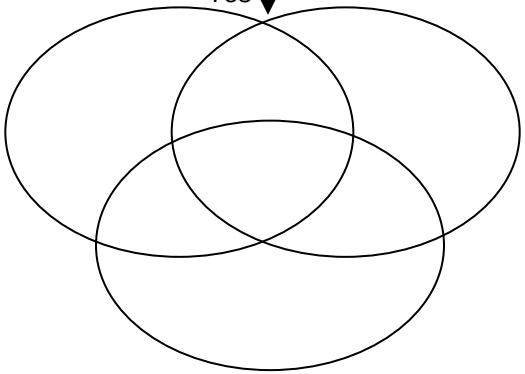
Patient's Name: _____

DOB:_____

Is the person Cognitively Declining?

No

Yes



CIRCLE POSITIVE FINDINGS

Depression

M – Persistent low **M**ood

S – New **S**leep disturbance
I – decreased **I**nterest
G – **G**uilty thoughts (multiple Regrets)
E – decreased **E**nergy
C – decreased **C**oncentration (decreased focus)
A – decrease in **A**ppetite
P – **P**hysical complaints, **P**sychomotor change
(hypoactive vs. Hyperactive – agitated)
S – **S**uicidal ideation (active vs. passive)

Somatization

Increased alcohol use

Dementia vs. mild cognitive impairment (MCI)

1. Amnesia
2. Aphasia, apraxia, agnosia, executive dysfunction (SHAFT)
3. ProgressiveImpacts on function
4. Impact on function

MCI
(Does not meet all 4 criteria)

Dementia
(Meets all of criteria 1 – 4)

Delirium

Fluctuation (hourly and unpredictable), Hallucinations, Drowsiness, Sudden onset, slow mentation

Lewy-Body vs. Parkinson's Dementia

Parkinsonism, hallucination, fluctuation, decreased visuospatial

Normal Pressure Hydrocephalus

Brain, bladder, Balance

Alzheimer

Progressive decreased short-term memory

Decreased word-finding

Decreased insight

Vascular

Arterial disease

Neuro imagine

Risk factors

Mixed

Frontotemporal

Behaviour – frontal lobe

Language – semantic dementia, primary progressive aphasia

Other

1. CJD +++ rapid with balance and swallowing change
2. Brain Injury

Dementia

- Employ the DSM criteria – look for a deficit in each of the following categories (**5 As** + function + progression) base on history, physical examination, cognitive testing:
  1. **A**mnesia
  2. **A**phasia, **A**praxia, **A**gnosia, **A**nd Executive dysfunction
  3. Progressive
  4. Impacts on social and / or occupational functioning

If do not meet the above criteria and cognitive testing demonstrates at most one domain effected then may have **Mild Cognitive Impairment (MCI)** - In MCI follow for emergence of Dementia (10 – 15% per year, higher risk with Amnestic MCI)

Amnesia

- If family look at you quizzically when you are asking questions about memory ("mom remembers things from 20 years ago so I do not see why you are asking about memory"), stop and inform them that you interested in short-term memory for things that happened an hour or day ago. Inform them that with memory problems that progress, the initial problem is "putting new memories in" (encoding – more true of Alzheimer's) while old memories are stable and retained.

Amnesia

- Look for changes from baseline
  - Repeating questions or stories
  - Losing items (keys, purse …)
  - Forgetting details of important events
  - Trouble recalling names
  - Mixing up relatives and friends
  - Increased use of compensatory strategies (lists, calendars, memory cues)

Aphasia (expressive)

- Ask if patient has word finding problems ('words on the tip of their tongue')
  - Word searching
  - Mixing up languages
  - Losing last language learned first
  - Patterns
    - Sudden loss then stable or improving suggests stroke, bleed
    - Progressive word –finding problems (more frequent and more severe / noticeable) suggests Alzheimer's
    - Severe and more pronounced than memory problems suggests stroke, bleed, Semantic Dementia, Primary Progressive Aphasia
- Later develop reading and writing difficulty

Apraxia

- Difficulty executing a motor task despite intact motor and sensory function
  - May notice during dressing post examination
  - On exam can ask patient to show how to:
    - Comb hair
    - Brush teeth
    - Cut paper with a scissor
  - Sometimes difficult to differentiate from executive dysfunction (use of stove, TV, remote…)

Agnosia

- Difficulty identifying objects despite an intact sensory function
  - Difficulty recognizing family members or close friends
    - Differentiate this from difficulty recalling names. In agnosias they cannot recall the person's role in their life.

And Executive Dysfunction

- Instrumental Activities of daily Living (IADLs) – change from baseline due to cognition
  - S Shopping
  - H Housekeeping / Hobbies
  - A Accounting / finances
  - F Food preparation
  - T Telephone / Tool use
    Transportation (Driving)

And Executive Dysfunction

- ADLs (lose after IADLs)
  - D Dressing
  - E Eating
  - A Ambulation
  - T Transfers
  - H Hygiene

Basic Physical Examination

- Rule out more pressing illnesses that require immediate attention
  - Pneumonia, CHF, masses suggesting cancer, hypotension etc.

- Physical examination findings that are most helpful in determining the type of dementia
  - Signs of stroke
  - Signs of parkinsonism

Basic Investigations

- Bloodwork
  - CBC, electrolytes, BUN/Cr, glucose
  - TSH, B-12, LFTs Calcium, & albumen
- CT Head
- Other investigations determined by history and physical examination

Management

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Step 3: Treatment / Management

- Specific Drug Treatment (selection of drug) depends on the TYPE of Dementia

RGPEO Dementia Assessment Tool

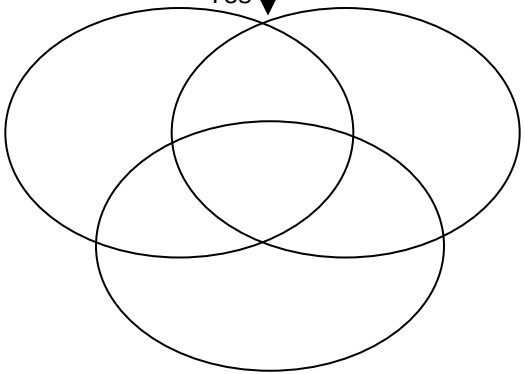
Patient's Name: _____

DOB:_____

Is the person Cognitively Declining?

No

Yes



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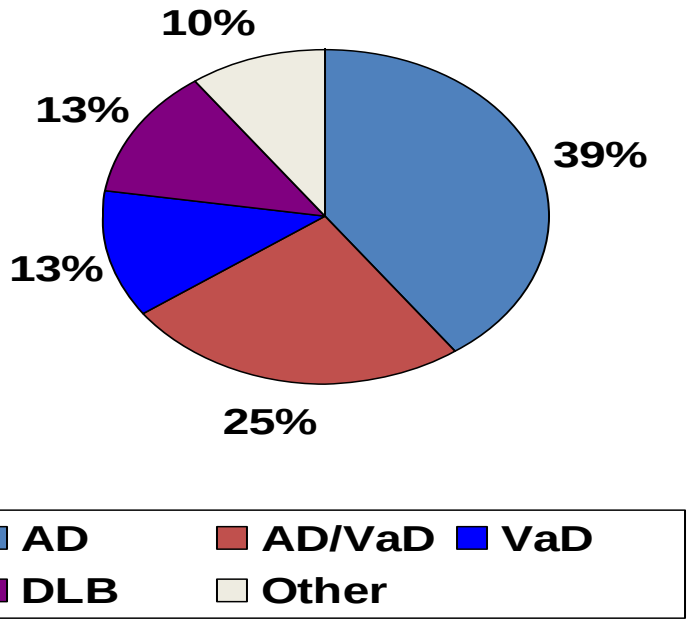
Specific Drug Treatment (selection of drug) depends on the TYPE of Dementia

- Alzheimer disease
- Mixed Alzheimer-Vascular dementia
- Vascular Dementia
- Dementia with Lewy Bodies
- Other



Alzheimer dementia

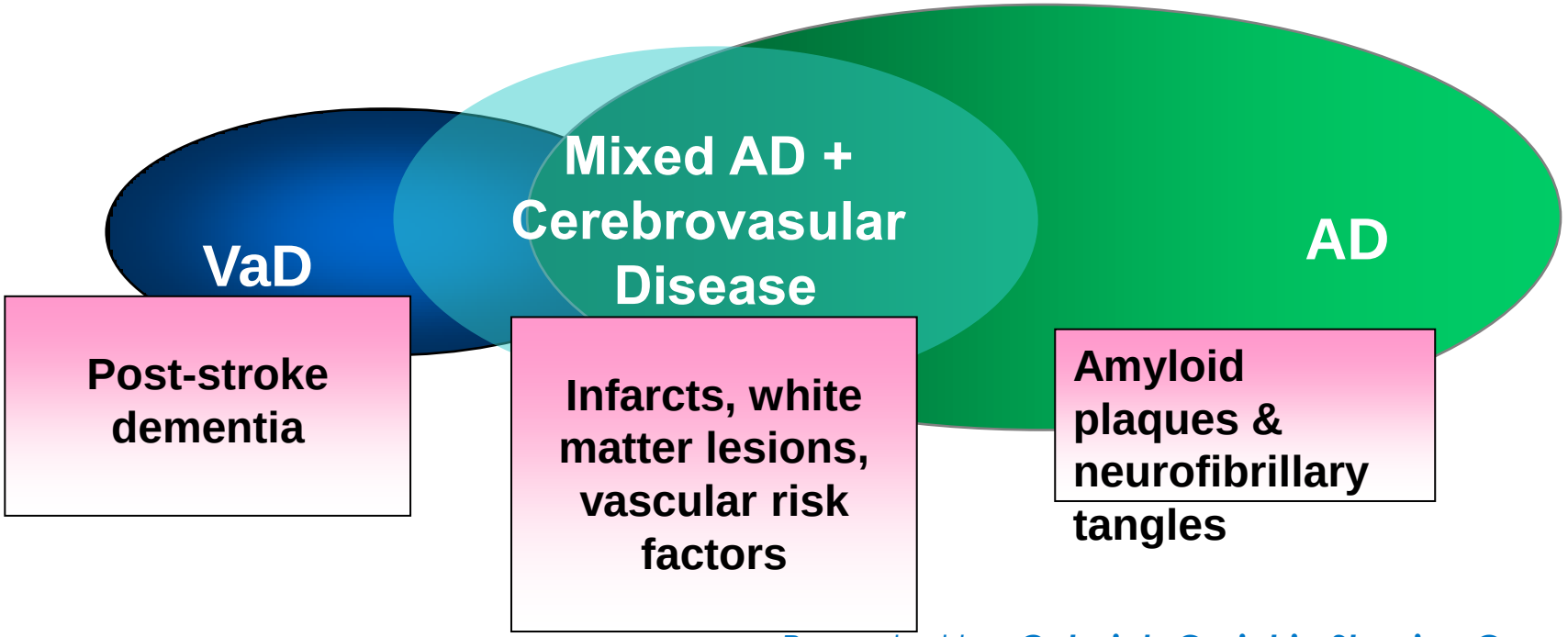
- Progressive short-term memory loss
  - Encoding problem so cues do not help
- MAY present with progressively more frequent / noticeable word-finding changes. When present this is highly suggestive of Alzheimer's dementia
- Limited insight – not fully aware of presence of memory loss and impact on function

Vascular (Stroke) Dementia

- 3 levels of evidence
  - Strokes seen on a CT Scan or MRI of the brain and no evidence of other types of dementia
  - Established arterial disease (stroke, carotid stenosis, Coronary Artery Disease, Renal Artery Stenosis, Peripheral Arterial Disease) – consider the arterial tree as a single organ. If these are present will treat vascular risk factors
  - Vascular risk factors.
    - Smoking, hypertension (high blood pressure), high cholesterol, diabetes, Atrial Fibrillation ….

Vascular (VaD) and Mixed Alzheimer's/ Vascular Dementia (AD/VaD)

The Continuum of Vascular Dementia and Alzheimer's Disease



Lewy Body Dementia

- McKeith et al. neurology 1996; 47: 1113-1124
  - Dementia occurring at the same time as mild parkinsonian features (tremor, rigidity, slow movement, decreased balance)
  - Looks like Delirium but in Lewy Body dementia the following symptoms are long-standing and in delirium they are sudden onset and short duration
    - **Long-standing Hallucinations** (visual, auditory)
    - **Long-standing Fluctuation** (cognition, attention, alertness)

- Supportive features
  - Vivid nightmares due to changes in REM sleep (lack of muscle paralysis – kick, punch and run in sleep)
  - Neuroleptic / antipsychotic (haldol, olanzepine, respiridone) sensitivity (become parkinsonian – stiff and slow)
  - Cognitive profile (memory responds to cuing, early executive dysfunction, early visuospatial dysfunction – driving skills)

Parkinson's Dementia

- Common in patients who have passed through the 5 – 10 year 'honeymoon period' (motor symptoms only) of Parkinson's disease

- Similar cognitive profile to Lewy body Disease
  - memory responds to cuing, early executive dysfunction, early visuospatial dysfunction (driving skills)

- Emre et al. Clinical diagnostic criteria for dementia associated with Parkinson's disease.
  - Movement Disorders 2007; 22(12): 1689-1707

Frontotemporal Lobar Degeneration

Behavioural type

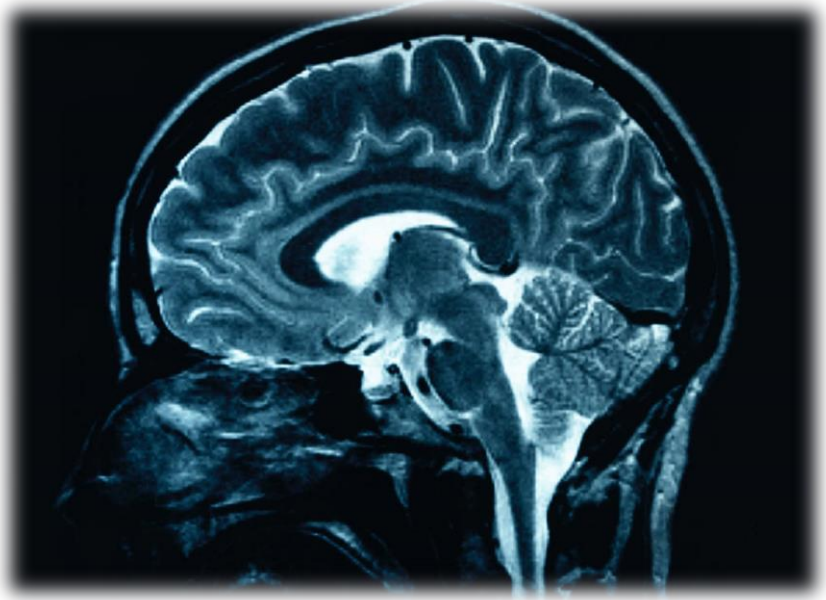
- Classic Frontal Lobe dementia with early loss of executive function
  - **S**hopping
  - **H**ousework
  - **A**ccounting & Bank
  - **F**ood Preparation / Following Medications
  - **T**ransportation (Tool use)
- Earlier onset (50s and 60s)
- Presenting symptoms can be positive (impulsiveness, anger control problems) or negative (withdrawal – looks depressed). More commonly referred to Psychiatry.
- Test well (MMSE 30/30) but function more poorly than screens (that do not test executive function well) would suggest
  - Neuropsychology helpful in diagnosis

Frontotemporal Lobar Degeneration

- Language types
  - Semantic dementia
  - PPA: Primary (non-fluent) Progressive Aphasia
- Severe early "expressive aphasia" (cannot speak because cannot find words) with no obvious cause on neuroimaging (CT / MRI Brain)
  - Test poorly (MMSE 5/30 - because testing is language based) but function much better than test results would predict
    - Neuropsychology and Speech-language Pathology helpful in diagnosis

Normal Pressure Hydrocephalous (NPH)

- **3Bs** – **B**rain (cognition), **B**alance (falls), **B**ladder (incontinence)
- Enlargement of fluid filled spaces (ventricles) in brain on CT scan or MRI
- Diagnosis with CSF Flow study (inject radioactive material into spinal fluid) or LP drain (drain spinal fluid) ..need to admit to hospital for these tests



Drugs for Dementia

- Cholinesterase Inhibitors
  - Donepezil (Aricept)
  - Rivastigmine (Exelon)
  - Reminyl (Galantamine)

  - Side-effects
    - 5% Nausea, vomiting, diarrhoea
    - More rarely; loss of appetite and weight loss (and low BP), leg cramps, insomnia, syncope, overstimulation (agitation, insomnia), "wetness" (runny nose, wet eyes, urinary incontinence)

- Memantine **(Ebixa)**

  - Side-effects
    - Dizziness
    - Confusion
    - Cost Not covered by Ontario Drug Benefits (ODB). Costs $107 per month. Covered by most private insurance companies

Step 1: Is disease progressing?

- The most common positive effect of Alzheimer drugs is to slow or temporarily halt progression
- If patient / family do not see evidence of progression before you have initiated therapy then you need to carefully consider whether or not to try the drugs
- Ask yourself what effect you will monitor for.

Step 2: Make certain it is safe

- Cholinesterase Inhibitors (CIs)
  - MD should do an ECG to make certain this class of drugs will not slow or stop the heart resulting in falls and loss of consciousness
  - Gastrointestinal (GI) sensitivity
    - History of nausea on other medications (the "glass stomach")
    - On other medications that can cause nausea (digoxin, narcotics, sulpha, antibiotics, Iron)
  - Leg cramps
    - Reaction to Cholinesterase Inhibitors is not predictable
  - Appetite
  - Sleep

Step 3: Match the drug to the type of dementia

- Alzheimer
  - Cholinesterase Inhibitor (e.g. Exelon, Aricept, Galantamine) +/- Memantine (in place of Cholinesterase Inhibitor or if continue to progress on Cholinesterase Inhibitor)
- Vascular
  - Usual vascular risk factor modification (lower Blood Pressure, lower Cholesterol, stop smoking optimize diabetes) + ASA (aspirin) / Ticlid / Plavix / Coumadin
- Lewy Body
  - Exelon, Aricept, Galantamine
- Parkinson's
  - Exelon, Aricept
- Frontotemporal
  - Avoid Cholinesterase Inhibitor
  - SSRI Antidepressants (Celexa, Zoloft etc), Trazadone in behavioural variant
- NPH
  - Shunt Surgery
  - Follow for emergence of Alzheimer's Dementia

Step 4: Follow-up of effectiveness of drugs

- Have realistic expectations (and relay these to the family and patient before starting the medication)
  - We are not expecting improvement
  - The response is moderate and slow
    - 3 months for cholinesterase inhibitors
    - 5 – 6 months for memantine

<u>4 Types of Responses</u>

1. Negative Side Effects (ask if they are serious enough to stop the medication).
2. No effect
3. Positive effective
    1. Slowing of Progression (25 – 50% ??)
        1. Consider increased dose (if no side effects)
        2. Consider adding 2nd class (e.g. memantine)
    2. Temporarily stopping progression – "super response" (1 - 5% ??)
        1. Monitor and when progression resumes [1] rule out depression or delirium, [2] consider adding 2nd class

Key Learnings

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Dementia CARE >>> Medications

Avoid the 'Dementia Domino Effect'

- Cognition is required to allow patients to safely manage their chronic medical conditions.
- When people develop dementia they are more prone to loss of control of chronic medical conditions (e.g. Diabetes, Heart Failure, COPD, Coronary Artery Disease, Renal Disease ….) … when these spiral out of control they may lead to an avoidable hospitalization
  - often with a very slowly resolving delirium which prolongs the hospitalization.

(Drugs are only PART of the CARE)

Triple Therapy In Dementia

Prevent the Preventable

- Lifestyle changes
- Antihypertensive
- Antidiabetic
- Antiplatelet
- Antilipemics
- Anticoagulants
- Antidepressant

Treat the Treatable

- A trial with a cholinesterase inhibitor
- A trial with memantine

Care for the Caregivers

- Referral to Alzheimer Society
- Home support
- Respite
- Recognize and change caregiver burden/stress/ depression

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Improve your care of Persons with Dementia

To access a free fully open access CME journal that provides useful information to help optimize care of Persons with Dementia go to www.geriatricsjournal.ca

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Thank you!