Early Cognitive Dysfunction in the Elderly: Screening and Assessment

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Faculty/Presenter Disclosure

• Faculty: Dr. Bill Dalziel

• Relationships with commercial interests:
  – Grants/Research Support: Nil
  – Speakers Bureau/Honoraria: Nil
  – Consulting Fees: Nil
  – Other: Nil
The first senior moment.
The Silent Epidemic is **NOT SO SILENT**

**The facts …**

- A new case in Canada every 4 minutes (100,000 new cases per year)

- Now (450,000) to 750,000 by 2025

- 3rd most expensive disease in the Canadian Healthcare System (2040: all current healthcare budget)

- 1 in 4 Canadians has a family member affected by the disease and half of all Canadians know someone diagnosed with Dementia
• What % of 65+ patients have cognitive impairment?
How many 65+ patients in your practice have dementia or MCI (Mild Cognitive Impairment)?

<table>
<thead>
<tr>
<th>Condition</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Dementia</td>
<td>11%</td>
</tr>
<tr>
<td>MCI</td>
<td>16%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>27%</strong></td>
</tr>
</tbody>
</table>
How many 80+ patients in your practice have dementia or MCI (Mild Cognitive Impairment)?

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<td>25%</td>
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TOTAL 41%
A Typical GP Practice (65+ = 400-500)

- Prevalence 11% N = 40 to 55
- Incidence 2% per year N = 8-10

<table>
<thead>
<tr>
<th>Not Diagnosed 50%</th>
<th>Diagnosed not treated 25%</th>
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<tr>
<td></td>
<td>Diagnosed and treated 25%</td>
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</table>
LACK OF RECOGNITION

How is dementia currently “recognized”?

...A Sentinel Event

OR

...Normalization Fails
Dementia Early Warning Symptoms (ABC concerns)

For Caregivers:

- Difficulty performing familiar tasks
- Problems with language
- Disorientation of time and place
- Poor and decreased judgment
- Problems with abstract thinking
- Misplacing things
- Changes in mood and behavior
- Changes in personality
- Loss of initiative
- Memory loss affecting day-to-day function
Dementia Early Warning Symptoms

For Professionals:

- Frequent phone calls/appointments – missing/wrong day
- Poor historian, vague, seems “off”, repetitive questions or stories
- Poor compliance meds/instructions
- Appearance/mood/personality/behaviour
- Word-finding/Decreased social interaction
- Subacute change in function without clear explanation/frequent visits to ER
- Confusion - surgery/illness/meds
- Weight loss/dwindles/ “failure to thrive”
- Driving – accident/problems/tickets/family concerns
- Head-turning sign (turning to caregiver for answer)
Part 1-Baseline of Cognitive Screens (prior to screenings)
Results of Memory Quick Screens and Full Cognitive Assessments

Results of Dementia Quick Screen (DQS) on Residents with no Diagnosis of Dementia or MCI

- N = 41 Residents
- 71% Positive (Abnormal) DQS (30 Residents)
- 17% Residents who refused DQS (6 Residents)
- 12% Negative (Normal) DQS (5 Residents)

Results of Full Cognitive Assessment on Residents with Positive DQS

- N = 32 Residents (30 Positive DQS and 2 Pre-Dx MCI)
- 47% Dementia (15 Residents)
- 28% Normal Assessment (9 Residents)
- 25% MCI (8 Residents)

- Preliminary diagnosis made by Geriatrician's review of assessments
- Formal Diagnosis to be made/confirmed by Residents' Physician
- 2 Residents with Dx MCI now progressed to Dementia category
High Risk Screening

OR

CASE FINDING

? WHY ?

Earlier Recognition → So What
Why should we do Dementia Screening?

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
- AChEI treatment
- Crisis avoidance

POSITIVE BRAIN HEALTH
How to Avoid Getting Dementia

1. Recognize and treat ALL VRFs (vascular risk factors)
2. Go play outside: Exercise: walking and pumping
3. Stay in school…and keep learning
4. Wear a helmet
5. Eat like your Italian Momma
How to Avoid Getting Dementia

6. Go find a nice girl or boy (and get married)
7. I love to cook with wine and SOMETIMES I even put it in the food.
8. Don’t smoke or roll in the grass.
9. Go play with your friends.
10. Don’t Worry…Be Happy
What % of dementia diagnosed is diagnosed in the early/mild stage?
Stage of Dementia At Time of Diagnosis – 55% are Moderate/Severe

First Symptom to Dx = 2.5 years
Case Study: Mrs. Green

A 80 year old female with BP 165/85 and no family history of dementia

Question #1: Do you screen this type of patient already?

Question #2: Is her risk of dementia
1. <10%
2. 10-20%
3. 20-30%
4. Over 30%
Dementia Risk Calculator

<table>
<thead>
<tr>
<th>Age</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 65</td>
<td>1%</td>
</tr>
<tr>
<td>65</td>
<td>2%</td>
</tr>
<tr>
<td>70</td>
<td>4%</td>
</tr>
<tr>
<td>75</td>
<td>8%</td>
</tr>
<tr>
<td>80</td>
<td>16%</td>
</tr>
<tr>
<td>85</td>
<td>32%</td>
</tr>
</tbody>
</table>

- Risk Doubles every 5 years of Age
- Each additional vascular risk factor approximately doubles the risk
- Positive family history doubles the risk

Overall risk = age risk _____% x family hx risk multiplier___ x vascular risk multiplier ___ = ___%
Question #3:

- In a busy office/clinic/ ER Hospital situation what screening “tests” could you use?
Dementia Quick Screen

- 3 item recall (0-1 correct: OR 3.1)
- Animals in 1 minute (<15: OR 20.2)
- Clock drawing (abnormal: OR 24)
Mrs. G’s DQS is Positive:

- 6 animals in 1 minute
- 1/3 recall
- Abnormal clock (hands to 10 & 11)
So What’s Next?

1. Dementia Quick Screen +ve

OR

2. Caregiver or patient concerns

Patient/caregiver interview

? What are the key questions?
Visit 1 – Dementia Assessment Toolkit
Does The Patient Have Dementia?

**Description of Problems** (Informant info critical)

______________________________
______________________________

Onset: ________________________________

Progression: Gradual ❑ or Abrupt ❑

1. Is the patient’s memory worse than 1 year ago? ❑ Yes ❑ No

2. Has there been an effect on functional activities? ❑ Yes ❑ No
   Which ADL - ________________________________

3. Has there been any psychobehavioural changes? ❑ Yes ❑ No
   ❑ Apathy ❑ Disinhibition
   ❑ Anxiety ❑ Irritability
   ❑ Depression ❑ Hallucinations
# ABC Checklist for Cognitive Problems

*(if Memory Quickscreen Abnormal)*

<table>
<thead>
<tr>
<th></th>
<th>OK</th>
<th>A Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ADLs</td>
<td>□</td>
<td>Shopping</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transportation</td>
</tr>
<tr>
<td>2. Behaviour</td>
<td>□</td>
<td>Apathy/↓ Initiative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>↓ Alertness/“tuned in”</td>
</tr>
<tr>
<td>3. Cognition</td>
<td>□</td>
<td>Repetition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Meds compliance</td>
</tr>
</tbody>
</table>
Dementia Assessment Guide
<table>
<thead>
<tr>
<th>Red Flags:</th>
<th>Think of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Cognitive decline within 3 months of CVA/TIA, previous CVA/TIA</td>
<td>- Vascular Dementia (VAD)</td>
</tr>
<tr>
<td>- Focal neurological symptoms/Signs/Abrupt onset/stepwise decline</td>
<td>- Mixed AD/VAD</td>
</tr>
<tr>
<td>- Visual hallucinations – (detailed/recurrent)</td>
<td>Lewy Body Dementia</td>
</tr>
<tr>
<td>- Pronounced fluctuation in cognition over hours/days</td>
<td></td>
</tr>
<tr>
<td>- Parkinsonism (especially rigidity) / bradykinesia</td>
<td></td>
</tr>
<tr>
<td>- Behavioural changes: disinhibition / apathy</td>
<td>Frontotemporal Dementia</td>
</tr>
<tr>
<td>- Impulsivity / poor judgment / self-neglect / socially inappropriate</td>
<td></td>
</tr>
<tr>
<td>- Abnormal gait</td>
<td>Normal Pressure</td>
</tr>
<tr>
<td>- Incontinence early in course of dementia</td>
<td>Hydrocephalus (NPH)</td>
</tr>
</tbody>
</table>
**MMSE**

- 30-point scale

- Focus on memory/orientation (16/30 points) - good for AD, poor for non-Alzheimer’s dementias

- Poor at upper end at discrimination between normal (especially highly educated) and MCI

- Poor with those < grade 5 education (cut off = 20 for 80 y/o, 19 for 85 y/o)
MoCA

- 30-point scale

- Available free of charge in multiple languages at [www.mocatest.org](http://www.mocatest.org)

- **Comprehensive:** Many more domains than MMSE (good for AD and non AD)

- **Minor:** adjustment for education (add 1 point if ≤ grade 12) **IS WRONG**

- MCI = MOCA < 26?

- Using a cut-off score < 26 provides sensitivity of 80%, and specificity of 91% to distinguish MCI from normal

- Much better discrimination between
  
<table>
<thead>
<tr>
<th>Normal</th>
<th>vs</th>
<th>MCI</th>
<th>and</th>
<th>Dementia</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 26</td>
<td></td>
<td>&lt; 26</td>
<td></td>
<td>&lt; 26</td>
</tr>
<tr>
<td>(usually 21-25)</td>
<td></td>
<td>(usually &lt; 20)</td>
<td></td>
<td>(function affected)</td>
</tr>
</tbody>
</table>
How To Decide if an Elderly Person Can Stay at Home: The Interval of Need Concept
Interval of Need
= How long can a person be left alone

Interval of Support = Informal & Formal
# A Decrease in Interval-of-Need Means an Increase in Caregiver Stress

<table>
<thead>
<tr>
<th>Interval of Need</th>
<th>AD Stage (MMSE)</th>
<th>Functional Loss</th>
<th>Behaviour Problems</th>
<th>Formal Services</th>
<th>Caregiver Situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 7 days</td>
<td>MCI</td>
<td>None</td>
<td>0</td>
<td>0 to +</td>
<td>0 - Away</td>
</tr>
<tr>
<td>2 to 7 days</td>
<td>Mild (23 to 28)</td>
<td>Some iADLs</td>
<td>0 to +</td>
<td>+ to ++</td>
<td>Alone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Shopping)</td>
<td></td>
<td>0 to +</td>
<td>With CG</td>
</tr>
<tr>
<td>12 to 48 hours</td>
<td>Mild-Mod (18 to 22)</td>
<td>Most iADLs</td>
<td>0 to ++</td>
<td>++ to +++</td>
<td>Alone, live in or</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0 to ++</td>
<td>Frequent visits</td>
</tr>
<tr>
<td>4 to 12 hours</td>
<td>Moderate (14 to 18)</td>
<td>All iADLs, Some pADLs</td>
<td>0 to ++</td>
<td>+ to +++</td>
<td>Needs live-in CG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Some pADLs)</td>
<td></td>
<td></td>
<td>Spouse or child</td>
</tr>
<tr>
<td>2 to 4 hours</td>
<td>Mod-Sev (10 to 13)</td>
<td>Most pADLs</td>
<td>+ to +++</td>
<td>+ to +++ with respite</td>
<td>Live-in CG, usually spouse</td>
</tr>
<tr>
<td>&lt;2 hour</td>
<td>Severe (&lt;10)</td>
<td>Most pADLs incl. mobility or feeding</td>
<td>+ to ++++</td>
<td>+ to ++++ with respite</td>
<td>Devoted spouse CG</td>
</tr>
</tbody>
</table>
whatever happened to our sexual relations?

I don’t know. I don’t even think we got a Christmas card from them this year.
Case History: Mrs. Green

- Husband admits he has seen some forgetfulness, slowly worsening over the past year and has observed some irritability and apathy.
- He has not observed any problems in shopping, cooking, cleaning, banking, driving etc.

1. DOES SHE HAVE EARLY DEMENTIA?

2. WHAT WOULD YOU DO NEXT?
MCI vs Dementia

- MCI = cognitive changes but no functional changes
- Dementia = cognitive change **CAUSING** functional changes.

(Not scores on tests)
Mrs. Green: COG $\Delta \rightarrow$ NO F$n \Delta$

No the patient does NOT have dementia. Mrs. Green has Mild Cognitive Impairment (MCI).

- Rx VRFs
- Lifestyle
- Yearly F/U (15%)
I Year Later

- Mrs. G. had shown increasing forgetfulness and repetitiveness. Her husband has seen some problems with banking, shopping and cooking. Her MMSE is now 21, MOCA 18.
- What is the diagnosis?
- What should be done next?
Causes that must be ruled out

- Delirium
- Depression
- Alcohol
- Hypothyroid
- Drug side effects (including OTC/herbals)
- Significant hearing/vision problem
- Recent head injury/fall
- Poorly controlled medical conditions
Examination/Lab/CT

1. Neuro/CVS focus
2. CBC, electrolytes, blood sugar, calcium, TSH, creatinine, B12
3. CT for “other” reason
Investigations

- Lab normal CBC, electrolytes, Cr, Ca, BS, TSH, B12

- CT: 1 old lacune and moderate PVWM changes
Mrs. Green has:

- Mild mixed AD with CVD (cerebrovascular disease) or mixed AD/VAD
Triple Therapy In Dementia

Prevent the Preventable
- Lifestyle changes
- Antihypertensive
- Antidiabetic
- Antiplatelet
- Antilipemics
- Anticoagulants
- Antidepressant

Treat the Treatable
- A trial in all patients with a cholinesterase inhibitor
- A trial with Ebixa in mod-severe disease

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