# IDENTIFYING AND MANAGING MEMORY PROBLEMS

## *How to Use this Toolkit*

This toolkit provides information to be used by family physicians to assess for dementia in the primary care setting. The toolkit contains:

- Introduction
- Flowchart for Assessments
- Brief Screening Tool
- Key Informant Questionnaire
- Mini-Mental Status Exam Tool
- Physical Examination Tool
- Treatment & Follow-up Plan
- Information about medications, referral sources, & patient education sources.

## *Introduction*

Distinguishing normal age-related memory complaints from true dementia and distinguishing the type of dementia involves determining the quality of the memory loss and any associated functional or behavioural changes.

## *When to Refer?*

Most cases of dementia can be managed in primary care. Indications for referral include:

- Uncertainty about diagnosis or if there are atypical features
- If the patient is young
- If there is a rapid course
- Failure of appropriate medications
- If you require assistance with managing behaviours

## Geriatric Mental Health Services

**Trillium Health Centre**
**Phone:** 905-848-7596
**Fax:** 905-848-7602

***Services Offered:*** Assessments and case management for those at risk of hospitalization; assessments in home or long-term care facility in Mississauga for those unable or unwilling to come to clinics.

***Referral Criteria:*** Over age 65 years (those under age 65 years may be considered based on symptoms/issues). Referral by physician only. Clients living outside of Mississauga and Southwest Etobicoke accepted if the referring physician is affiliated with Trillium.

***How to Refer:*** Fax a completed referral form to the above number.

## *Definitions*

***Mild cognitive impairment (MCI)*** is an age-related change in memory without functional loss. This is often noted by the patient, but not by an observer such as family member.

***Dementia*** is a syndrome of cognitive impairment resulting in functional loss and behaviour change and is to be distinguished from depression and delirium. It includes aphasia (problems in naming and comprehension), apraxia (problems in performing tasks such as combing hair or dressing), agnosia (problems in recognizing familiar objects such as a pen or watch) and disturbance in executive functioning (planning and organization).

***Depression*** may present with the patient complaining of memory loss and difficulty concentrating, but also includes apathy, loss of appetite, poor energy, sleep disturbance, psychomotor agitation and anxiety. Depression can co-exist with dementia.

***Delirium*** is an acute confused state of rapid onset, characterized by poor attention, concentration, disorganized thoughts, and a fluctuating course. The physical exam and lab investigations often reveal evidence of infection, adverse drug effects or metabolic derangement.

## *References*

Alberta Medical Association. Guideline for cognitive impairment: is this dementia? Symptoms to diagnosis. January 2002.
Gauthier, Serge. Screening for dementia: how and why? *The Canadian Alzheimer Disease Review* Oct 2002: 18-20
Dalziel W. Assessment of dementia: diagnostic challenges and toolkit. September 2002

*This toolkit has been developed by Dr. W. Bakker, Dr. S. Egier, Dr. C. Hewitt, Dr. B. Hickey, Dr. J. Kingston, and Dr. G. Morningstar in the Department of Family Practice at Trillium Health Centre, September 2003 with assistance from Dr. Richard Shulman.*

*These recommendations have been developed to assist clinical decision-making by family physicians in conjunction with their patients.*

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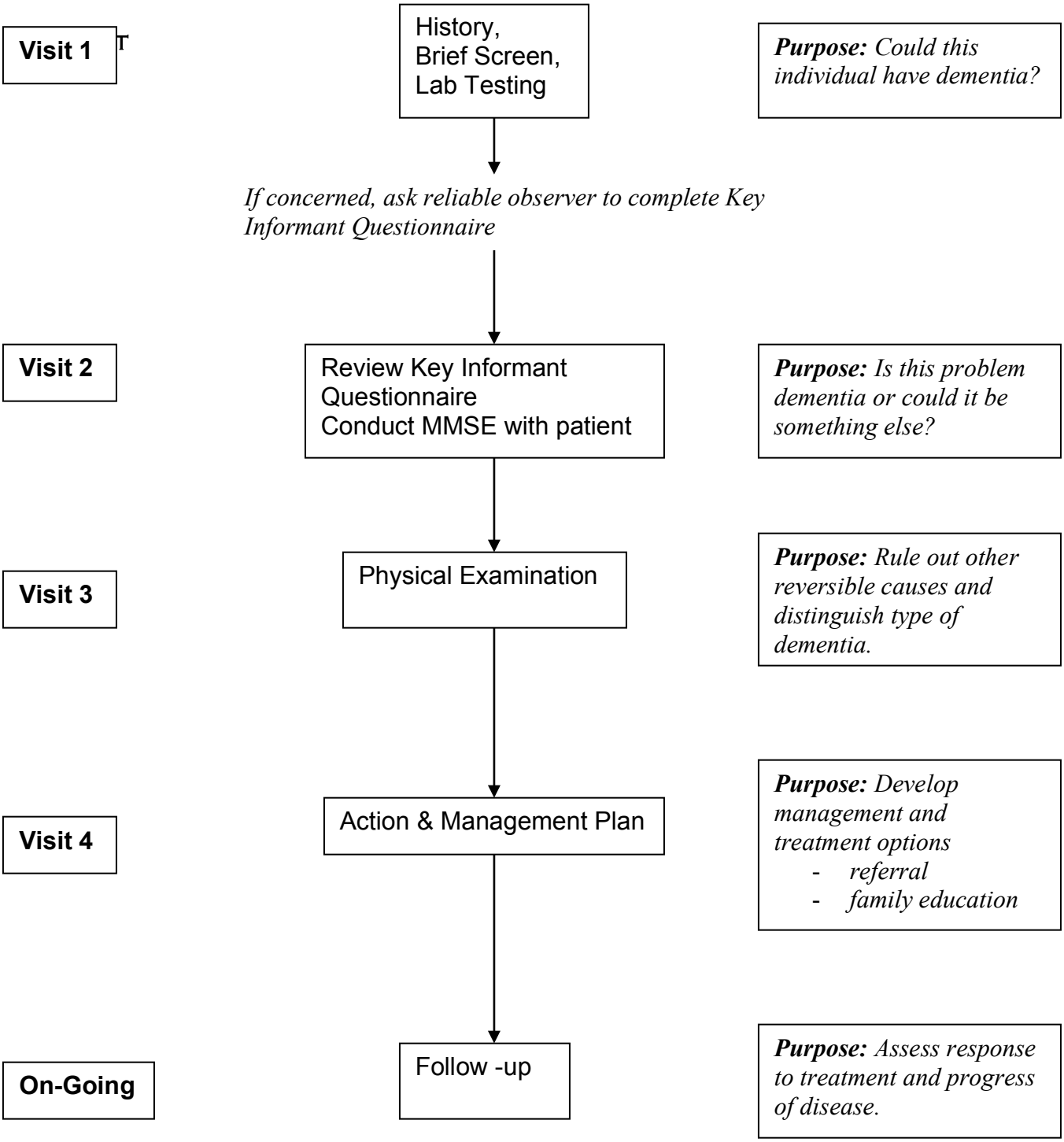
## ***Assessment Flowchart***

*This is an outline of how to use the tools in primary care practices when a patient presents with memory problems.*

*Family physicians may want to divide diagnostic work into phases that can be carried out in separate visits.*



# IDENTIFYING AND MANAGING MEMORY PROBLEMS

## *Brief Screening Tool*

**Date:** _____
**Patient Name**: _____
**Family History of Dementia**: ☐ Yes ☐ No _____
**Birthdate / Current Age**: _____/_____
**Level of Education:** _____
**Key Informant Name & Relation to Patient**: _____
**Key Informant Contact Number:** _____

***Description of Cognitive Problems:***

1) ***Describe:*** problems, onset, progression, associated issues, language deficiencies (e.g. vagueness of language, lack of detail, no descriptive quality to language)

_____
_____
_____
_____

***Ask patient:***

1) Do you have any concerns about forgetfulness or your memory? ☐ Yes ☐ No
2) **Orientation:** Ask patient the current year, month, day, season.

_____

3) **Recall:** Name three objects and ask patient to repeat them.

_____

4) **Clock Test:** Ask patient to draw a clock, put in the numbers and set the time at 10 minutes past 11 o'clock.

_____

5) **Recall:** Ask patient to repeat objects from Question 3.

_____

***Ask key informant (caregiver/friend/family member):***

6) Have you noticed observable decline in the patient's ability to:
   1. remember things that happened recently? ☐ Yes ☐ No
   2. use the telephone? ☐ Yes ☐ No
   3. travel? ☐ Yes ☐ No
   4. use medications correctly? ☐ Yes ☐ No
   5. handle finances? ☐ Yes ☐ No
   6. take care of personal hygiene? ☐ Yes ☐ No

***Is there any indication of?***

- Delirium ☐ Yes ☐ No
- Depression ☐ Yes ☐ No
- Hypothyroidism ☐ Yes ☐ No
- Substance abuse ☐ Yes ☐ No
- Medication side effects ☐ Yes ☐ No
- Significant hearing vision problem ☐ Yes ☐ No
- Recent fall or head injury ☐ Yes ☐ No

**Preliminary Diagnosis (circle most appropriate answer):**
*Cognition Normal* *Minimal Cognitive Impairment* *Dementia*

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## MINI-COG

*Note:* A clock should not be within the patient's view when administering this test.

1. Make sure you have the patient's attention. Instruct the patient to listen carefully to and remember 3 unrelated words and then to repeat the words back to you, so you will know they heard the words correctly.
2. Instruct the patient to draw the face of a clock, either on a blank sheet of paper or on a sheet with the clock circle already drawn on it. After the patient puts the numbers on the clock face, ask him or her to draw the hands of the clock to read a specific time (11:10 or 8:20 are most commonly used and are more sensitive than some others).

   These steps can be repeated, but no additional instructions should be given. If the patient cannot complete the CDT within 3 minutes, move on to the next step.
3. Ask the patient to repeat the 3 previously presented words (See step 1).

***Scoring***

Recall

A score of 0 to 3 is given for the recall test. A point is given for each recalled word after the CDT distracter.

Clock Drawing Test (CDT)

A score of 0 or 2 is given for the CDT test. Two points are given for a normal CDT. No points are given for an abnormal CDT.

For a normal CDT, all numbers must be depicted, in the correct sequence and position, and the hands must readably display the requested time.

Mini-Cog Score

To obtain the mini-cog score, add the recall and CDT scores

0-2 indicates positive screen for dementia.

3-5 indicates negative screen for dementia.

References: Borson S, Scanlan JM, Brush M, et al. The Mini-Cog: a cognitive "vital signs" measure for dementia screening in multi-lingual elderly. *Int J Geriatr Psychiatry* 2000; 15(11):1021-27; Borson S, Scanlan JM, Chen P, et al. The Mini-Cog as a screen for dementia: validation in a population-based sample. *J Am Geriatr Soc* 2003; 51(10):1451-4; Borson S, Scanlan JM, Wantanabe J, et al. Improving identification of cognitive impairment in primary care. *Int J Geriatr Psychiatry* 2006; 21(4):349-55.

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## Physical Examination Tool

(A general physical examination should be performed.)

Age: Living Arrangements:
ETOH Use: Smoking Status:
Exercise Regime: Dietary Intake:
Review of Systems:

Current Medications:
BP: P: Wt: Ht:

***Consider:***

**1) Risk Factors for Vascular Disease:**
   a. Hypertension, diabetes, hyperlipidemia, atrial fibrillation, ischemic heart disease, smoking.

**2) Other Causes of Memory Impairment:**
   a. Depression, delirium, thyroid disease, B vitamin deficiencies, ETOH, drug adverse effects, vision& hearing loss, head injury.

**3) Red Flags to make you consider a diagnosis other than Alzheimer's Dementia:**
   a. *Mixed or Vascular Dementia* – recent CVA or TIA, stepwise decline, localizing neurological signs
   *b. Lewy Body Dementia* – Parkinsonian features (particularly falls), fluctuating cognition, hallucinations, executive function (planning, organizing) worse than memory
   *c. Fronto-Temporal Dementia* – personality changes – impulsivity, disinhibition, self-neglect, socially inappropriate
   *d. Normal Pressure Hydrocephalus* – disturbed gait, incontinence
   *e. Jakob-Creutzfeld* – rapid progression, myoclonus

**1. Localizing Neurological Signs:**

**a.** Power / Symmetry_____ **d.** Tone _____
**b.** Reflexes _____ **e.** Babinski _____
**c.** Cerebellar _____ **f.** Tremor /Myoclonus__

**2. Cardiovascular:**

**a.** Blood pressure: Lying _____ Standing _____ **d.** Heart Rate _____
**b.** Congestive heart failure _____ **e.** Atrial Fibrillation _____
**c.** Peripheral Vascular Disease _____ **f.** Carotid bruits _____

**3. Gait Abnormality**

Ataxia _____ Parkinsonian Features (falls)_____

**Suggested tests (if not recently done):**

- Glucose, BUN, Creatinine, Electrolytes
- CBC
- TSH
- Liver function test
- ECG if history of CVD/risk factors or considering AchEI therapy
- Calcium
- B12/VDRL

**Consider CT Scan if :**

- Under age 60
- Recent heard trauma / seizure
- ? Vascular or mixed dementia
- NPH (incontinence, abnormal gait)
- History of cancer / bleeding disorder
- Atypical presentation
- Sudden onset / rapid progression
- Neurological symptoms / signs

# IDENTIFYING AND MANAGING MEMORY PROBLEMS

## *Action & Management Tool*

*Use this tool to guide you in the next steps to discussing the diagnosis, and planning for treatment and management.*

### Disclosure

1. Discuss diagnosis and general prognosis for with the patient and caregiver. ***Average survival for Alzheimer's Disease is approximately 10 years with a range of 2-20 years from onset of memory loss.***
   ***Longterm care institutional placement expected < 1 year.***
2. Discuss risk of superimposed delirium / depression and the effect of other illness, surgery, anesthesia.

### Treatment

1. Review concurrent medical problems *(Review /revise other medication use; treat risk factors to modify progression of disease)*
2. Refer patient to CCAC and other resources (*See Management Resources*)
3. Consider pharmacologic intervention *(see Fact Page on Medications)*
4. Consider nutrition issues: Consider multi-vitamin and mineral supplements. High calorie, nutrient rich foods will assist in weight maintenance (BMI 22-27). Altering the eating environment may reduce distractions and increase social interaction. Creative feeding strategies include altering food texture (thickeners, finger foods), serving one food at a time, and providing continuous access to food. Review effects of medications (e.g. dry mouth, constipation, nausea, decrease in appetite.

### Safety Planning

1. Driving: Mandatory reporting to Ministry of Transportation (416-235-1773) required for patients with clinical dementia. For patients with early Alzheimer's but whose functional impairment is not sufficient for dementia, use DriveABLE to evaluate driving competency (located in North York 416-498-6429). _____
2. Medication compliance: _____
3. Falls (Mobility assessments through Walking Mobility Clinics 905-804-1015): _____
4. Wandering:_____
5. Cooking, use of appliances: _____
6. Ability to live alone: _____

### Behaviour

1. Agitation: _____
2. Aggression:_____
3. Apathy: _____

### Legal Issues

1. Discuss Power of Attorney (for financial & personal care): _____
2. Discuss Will:_____
3. Discuss Capacity if patient felt to be capable: _____
   (Capacity Assessment Office, Ministry of Attorney General – 416-327-6683)
4. Discuss Advance Directives:_____

### Care Giver Burden

1. Discuss & assess stress, depression.
2. Consider respite care and long term care placement (contact CCAC).

# IDENTIFYING AND MANAGING MEMORY PROBLEMS

## *Key Informant Questionnaire*

*This can be sent home with the caregiver or other reliable witness to obtaining information which will be important to establishing a diagnosis and making future comparisons.*

*This should be reviewed at the next office visit and a copy returned to the caregiver to provide input at follow-up visits.*

| | **Baseline**<br>**Date:** | **Follow-up in 3 months**<br>**Date:** | **Follow-up in 6 months**<br>**Date:** | **Follow-up in 12 months**<br>**Date:** |
|---|---|---|---|---|
| **1.** ***Cognition*** | | | | |
| ***Does your relative have problems:*** | | | | |
| • Remember names and events? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| • Finds appropriate words? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| • Keeps track of time? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| • Stay aware of their environment? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| • Follow instructions? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| • Stay tuned in and focused? | | | | |
| **2.** ***Social Interactiveness*** | | | | |
| • Does your relative show little interest in usual hobbies/leisure activities (e.g. playing cards/sewing, knitting) | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| • Does your relative have difficulties participating in conversation? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| **3.** ***Function*** | | | | |
| ***Does your relative have problems:*** | | | | |
| o Bathing and grooming themselves? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| o Dressing themselves appropriately? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| o Preparing snacks/meals? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| o Handling the mail? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| o Shopping? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| o Using the telephone? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| o Handling money/finances? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| o Using appliance? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| o Driving or using public transportation? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| **4.** ***Behaviour*** | | | | |
| ***Does your relative display signs of:*** | | | | |
| o Apathy, lack of interest and/or withdrawal ? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| o Anxiety and/or nervousness? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| o Irritability and/or anger | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| o Depression, sadness, and/or emotional outbursts? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| o Hallucinations, delusions, and/or paranoia? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| o Lack of motivation to compete tasks? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| o Is your relative likely to wander? | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No | ☐ Yes ☐ No |
| **5.** ***Caregiver Burden*** | ***Poor*** ***Good***<br>1 2 3 4 5 | ***Poor*** ***Good***<br>1 2 3 4 5 | ***Poor*** ***Good***<br>1 2 3 4 5 | ***Poor*** ***Good***<br>1 2 3 4 5 |
| • Level of caregiver (your) frustration/worry. | | | | |
| • Level of caregiver (your) feelings of isolation. | ***Low*** ***High***<br>1 2 3 4 5 | ***Low*** ***High***<br>1 2 3 4 5 | ***Low*** ***High***<br>1 2 3 4 5 | ***Low*** ***High***<br>1 2 3 4 5 |
| • Level of caregiver (your) energy | | | | |
| • Level of caregiver (your) stress | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 | 1 2 3 4 5 |

# IDENTIFYING AND MANAGING MEMORY PROBLEMS
## *Facts on Medications*

### Role of Aceltylcholine

Acetylcholine (ACh) is an important neurtransmitter in areas of the brain involved in memory formation (e.g. hippocampus, cerebral cortex, and amygdala)

Loss of ACh occurs early in Alzheimer's disease (AD) and correlates with memory impairment.

### Treatment Approach

Enhancement of ACh function may significantly reduce the severity of cognitive loss. The only proven method to enhance ACh function is the prevention of its breakdown by drug inhibition of cholinesterase enzymes needed to biodegrade ACh in the synaptic cleft between nerve cells. Three cholinesterase inhibitors (ChEI) are available in Canada.

- Aricept® (donepezil hydrochloride) – available since August 1997
- Exelon® (rivastigmine) - available since April 2000
- Reminyl® (galantamine) - available since September 2001

All three are indicated for the treatment of Alzheimer's disease in mild to moderate severity.

All three are available under the Ontario Drug Benefit plan (ODB) for those over age 65 scoring between 10 and 26 on the mini-mental state exam (MMSE).

| | **Donepezil (Aricept®)** | **Rivastigmine (Exelon®)** | **Galantamine (Reminyl®)** |
|---|---|---|---|
| **Mechanism of Action** | Sole mechanism of action: acetyl cholinesterase inhibitor (AchEI) | Dual mechanism of action; non-selective inhibitor of both AchEI and butyryl cholinesterase (BuChE) | Dual mode of action: AchEI and stimulation of pre-synaptic nicotinic receptors, which may increase release of Ach. |
| **Half-Life** | 70 hours with hepatic metabolism via CYP 2D6 and 3A4. | Short half-life of 1.5 hours necessitates twice-a-day dosing. Non-CYP metabolism. | 6-8 hours, with hepatic metabolism via CYP 2D6 and 3A4. |
| **Interactions** | Minimal concern for interactions due to dual pathways and lack of inhibition of CYP enzymes.<br><br>Caution with use with other CYP 2D6 drugs such as some beta blockers | | Minimal concern for interactions due to dual pathways and lack of inhibition of CYP enzymes.<br><br>Caution with use with other CYP 2D6 drugs such as some beta blockers. |
| **Therapeutic Dose** | Once-a-day dosing of 5 mg for 4 weeks then increases to 1 0 mg/day. | Therapeutic dose range of 6 to 12 mg/d. Dosing starts at 1.5 mg BID for 4 weeks, then increases to 3 mg BID for 4 weeks, and then may increase to 4.5 mg BID for 4 weeks, and then may increase to 6 mg BID. | Start with 4 mg BID, for 4 weeks, then increase to initial target maintenance dose of 8 mg BID. Maximum recommended dose: 12 mg BID, if clinically appropriate. |
| **ODB Codes** (MMSE required for each prescription) | 347 for first 3-month trial, 348 for subsequent therapy | 347 for first 3-month trial, 348 for subsequent therapy | 354 for first 3-month trial, 355 for subsequent therapy |

# IDENTIFYING AND MANAGING MEMORY PROBLEMS
## *Facts on Medications – 2*

### Efficacy Profiles
Using the Alzheimer's disease assessment scale cognitive sub portion (ADAS-Cog):

| Drug | ADAS-cog Effect vs. placebo | ADAS-cog Time for score to deteriorate back to Baseline |
|---|---|---|
| Reminyl® | 3.1 – 3.9 | 52 weeks |
| Aricept® | 2.2 - 2.9 | 39 weeks |
| Exelon® | 1.2 - 4.9 | 42 weeks |

### Adverse Effects
Common effects include gastrointestinal (GI) adverse events including nausea, vomiting, diarrhea, anorexia and weight loss. These are often mild and transient. GI side effects seen more frequently (20% vs.10%) with Exelon® as compared to the other two but perhaps this was due to too fast a titration period used in the Exelon® pivotal studies (weekly as opposed to monthly). Suggested to be used cautiously in patients with asthma or COPD, supraventricular cardiac conduction disorders (bradycardia) and ulcers.

Lack of efficacy and/or tolerability problems with one ChEI inhibitor does not predict similar problems with another agent.

### Appropriate Expectations
Typical rate of cognitive decline in untreated Alzheimer's disease is 2-4 points per year on the MMSE.

Typical MMSE response to all three drugs in the first 6 months is 0-2 point improvement with eventual return to baseline after 9-12 months of therapy.

Open label studies suggest ongoing slope of decline same as that over first year.

Functional response is modest improvement or stability over first 6-12 months.

Behavioural response is modest improvement or stability over first 6-12 months.

### Predictors of Response
None available.

Patients in both mild and moderate stages may benefit, but commencing treatment earlier in the disease predicts better efficacy.

Modified by T Sadak 2012

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