

Treatment for Dementia in the Elderly

By

Dr T K Biswas

MD(Medicine)

Prof & HOD

Dept of Geriatrics

MGM Medical College & Hospitals

Kamothe,Navi-Mumbai

Dementia

- **Dementia** - clinical syndrome characterized by persistent impairment of multiple cognitive capacities, which includes:
 - Impaired memory & learning
 - Disturbances of language function and visuo-spatial skills
 - Complex attention and
 - Variety of behavioral problems.
- Clear sensorium
- Global cognitive impairment of > 6 months duration
- Cognitive impairment of normal ageing produces little disability and can be easily distinguished from dementia even early in the disease.

Cognitive impairment

- Cognitive impairment is common in elderly because of
 - Neuronal loss with ageing
 - Atrophy of the brain
 - Enlargement of ventricles
 - Accumulation of lipofuscin & plaque, including amyloid
 - Reduced transmission efficiency.
- In some individuals these age-related changes are excessive with significant functional impairment, which is termed as cognitive impairment.
- In one study carried out in our institute from 2014 -2017, 52.9 % of people above the age of 60 years was found to have cognitive impairment .
- The cognitive impairment of old age not amounting to dementia has been termed as **“age-associated memory impairment”**(Mild changes in memory and rate of information processing, Not progressive, Does not interfere with daily function or independence)
- Severe levels of Cognitive impairment result in the inability to live independently

Causes of Dementia in elderly

- AD-60-70%
- Other progressive disorders-15-30% (e.g. Vascular- Multi-infarct dementia, lacunar state, Lewy Body disease, Parkinson's disease, Fronto-temporal degeneration)
- Completely reversible dementia (2–5%)
 - Metabolic (Hyponatraemia, Hypercalcaemia)
 - Thyroid disease (Hypothyroidism)
 - Space occupying lesion: Subdural haematoma
 - Normal pressure hydrocephalus(NPH)
 - Toxin: Alcohol
 - Drug toxicity
 - Vit B₁₂ deficiency
- Among all these conditions, Alzheimer's disease and vascular dementia are most common.

Dementia syndrome in elderly

- Largely unrecognized & under-diagnosed
- Mild cognitive impairment (MCI) is the pre-clinical stage- characteristics:
 - Memory loss-report by patient or caregiver
 - Objective signs of memory impairment
 - No functional impairment
 - Mild construction, language or executive dysfunction.

Dementia in elderly

- Need to diagnose Dementia at pre-clinical stage
- 6-15 % of MCI annually progress to Dementia syndrome; some cases may not progress
- Treating vascular risk factors (Hypertension, DM, Hyperlipidaemia) may reduce risk of progression to AD.

Screening tools

- **MMSE** (Mini-mental State Examination), **MoCA** (Montreal Cognitive Assessment- more sensitive in detecting MCI), CDR (Clinical Dementia rating scale), FAST (Functional assessment staging scale)
- Mild cognitive impairment (MCI) MMSE 26-30, MoCA < 26
- Early mild impairment (Yr 1-3 from onset of symptoms) MMSE 21-25
- Middle, Moderate Impairment (Yr 2-8) MMSE 11-20
- Late, severe impairment (Yr 6-12) MMSE 0-10

MoCA (Montreal Cognitive Assessment)

MONTREAL COGNITIVE ASSESSMENT (MOCA)						NAME :	Date of birth :	
						Education :	DATE :	
						Sex :		
VISUOSPATIAL / EXECUTIVE 						Copy cube ☐	Draw CLOCK (Ten past eleven) (5 points) ☐	POINTS ___/5
NAMING ☐ ☐ ☐						___/3		
MEMORY Read list of words, subject must repeat them. Do 3 trials. Do a recall after 5 minutes. FACE VELVET CHURCH DAISY RED 1st trial 2nd trial						No points		
ATTENTION Read list of digits (1 digit/sec). Subject has to repeat them in the forward order [] 2 1 8 5 4 Subject has to repeat them in the backward order [] 7 4 2 Read list of letters. The subject must tap with his hand at each letter A. No points if 2 or more errors [] F B A C M N A A J K L B A F A K D E A A A J A M O F A A B						___/2		
Serial 7 subtraction starting at 100 [] 93 [] 86 [] 79 [] 72 [] 65 4 or 5 correct subtractions: 3 pts, 3 or 2 correct: 2 pts, 1 correct: 1 pt, 0 correct: 0 pt						___/3		
LANGUAGE Repeat: I only know that John is the one to help today. [] The cat always hid under the couch when dogs were in the room. [] Fluency / Name maximum number of words in one minute that begin with the letter F [] _____ (N ≥ 11 words)						___/2		
ABSTRACTION Similarity between e.g. banana - orange - fruit [] train - bicycle [] watch - ruler						___/2		
DELAYED RECALL Has to recall words WITH NO CLUE FACE VELVET CHURCH DAISY RED Category cue Multiple choice cue						Points for UNCLUED recall only		
ORIENTATION [] Date [] Month [] Year [] Day [] Place [] City						___/6		
© Z. Nasreddine MD, Version November 7, 2004 www.mocatest.org						Normal ≥ 26 / 30 TOTAL Add 1 point if ≤ 12 yr edu		

MoCA (HINDI)

मॉडियल बोध मूल्यांकन (मो.बो.मू.)
संस्करण 7.1 वास्तविक संस्करण

नाम: Arul शिष्टाणु: 12th जन्म तिथि: 704
लिंग: M दिनांक: 6/1/16

दृष्टिक संकल्पना / कार्यकारिणी (विजुअल स्प्रेशनल रिक्लेस)

घन नकल

घड़ी बनाये (11 बजकर दस मिनट)
(3 अंक)

आकार [] संख्या [] सुईया [] 3/5

नाम बताना (लेभिग)

स्मरण शक्ति (मेमोरी) शब्दों की सूची पढ़ें, व्यक्ति उसे दोहराएँ। पहली बार प्रयास करें पर दो बार पकड़ लें। 5 मिनट बाद पुनः दोहराएँ।

ध्यान (अटेंशन) को को सूची पढ़ें (1 अंक/ 10s)

अक्षरों की सूची पढ़ें। व्यक्ति को हर 'अ' आने पर अपने हाथों से संयोजन दें। दो से अधिक टुट्टि पर कोई अंक नहीं।

भाषा (लेंग्वेज) दोहराएँ: मैं लिखे इतना जानता हूँ कि मुझे आज राम की सहायता करनी है। []

सांख्यिक (न्यूमेरिक) इनके बीच एकपता उदाहरण: केला - संतरा = फल [] रेलगाड़ी - साइकल [] घड़ी - फूल (स्कैल)

विलम्बित स्मरण (डिलेड रिक्लेस) बिना संकेत के घेहरा [] मखमल [] मंदिर [] गुलाब [] लाल [] बिना संकेत के याद करने पर ही अंक

वैकल्पिक (अल्टरनेटिव) बिना संकेत के घेहरा [] मखमल [] मंदिर [] गुलाब [] लाल [] बिना संकेत के याद करने पर ही अंक

स्थिति जागरूकता (ऑरियंटेशन) [] दिनांक [] महीना [] वर्ष [] दिन [] स्थान [] शहर [] कुल []

Modified by: Vidushi Sharma, Mansi Gupta and Ruchi N Buckshee
© 2014 Redline MD
www.mocatest.org
द्वारा संचालित January 2015

WHO criteria for the diagnosis of dementia

- Evidence of dementia- decline in intellect, impairment of activities of daily living, depressive symptoms, hallucinations and delusions.
- Insidious onset and gradual deterioration.
- No evidence of another clinically diagnosable cause of dementia.
- No history of sudden onset or neurological signs of focal damage (hemiparesis, visual field defects, sensory, loss of co-ordination) early in the course of disease.

Clinical features and presentation of dementia

Cognitive problems

- Memory loss (STM initially-loss of remote memory)
- Poor concentration
- Visuo-spatial difficulties(copying,drawing)
- Non-specific focal cortical damage
- Speech and language defect(Naming,repitition,reading,writing,following command)
- Poor judgment
- Focal neurological deficits
- Loss of language-little or unintelligible verbal output
- Disorientation to date & place
- Inability to recognize self and others (family,friends)
- Getting lost in familiar areas or own home
- Seizures
- Disturbances of muscle rigidity and gait
- Bladder and bowel incontinence (soilingof clothes)
- Total confinement to bed

Behavioural problems

- Agitation
- Personality change
- Abnormal eating behaviour
- Wandering
- Mood disorder(apathy/depression)
- Anxiety,phobias,fear
- Restlessness
- Delusions,Hallucinations, illusion
- Shouting,rage,violece(motor or verbal aggression)
- Disinhibition
- Compulsive behaviour
- Social withdrawal
- Sundowning -“late-day confusion”

Clinical features and presentation of dementia

Functional impairments

- Managing finances
- Driving
- Managing medications
- IADL (Phone, Shopping, Food Preparations, House-keeping, Laundry, Transportation)
- Difficulty with some ADLs (Toilet, Feeding, Dressing, Grooming, Bathing)
- Gait & balance
- Mobility
- Falls
- Swallowing

Evaluation

- History from family or caregiver
- Physical & neurological examination
- Assess for functional status
- Assess for depression
- Use MMSE for staging
- Laboratory testing (CBC,TSH,Serum Vit B12,Serum calcium,Liver & kidney function tests,electrolytes,HIV serology as needed basis)
- Neuro-imaging (MRI brain-focal neurological signs or symptoms, abrupt onset or rapid decline,metastatic cancer or on anti-coagulants)

Management of Cognitive Impairment

(MMSE>24)

- Familiar predictable environment
- Predictable regular routines
- Repeated explanations
- Constant reminders of time, place and person
- Strategic placement of calendar and clocks
- Allow to make simple restricted choices
- Present as much new information as the patient can comfortably handle
- Safety measures such as well-lit corridors & locked doors
- Medications kept out of reach
- Well balanced and easy to eat meals
- Daily physical exercise
- Day hospital programs
- Transfer of financial and legal affairs
- Treatment of secondary causes
- Depression should be treated

Treatment of Dementia

- Goal:
 - To improve quality of life
 - Maintenance of Independence in daily activities as long as possible
 - Improvement in communication
 - Prevention and reduction of occurrence of difficult behaviour and Protection from harm
 - Provision of support to family care-givers

General Treatment principles

- Identify and treat co-morbid physical illness (e.g Hypertension,DM)
- Promote brain health by exercise, balanced diet, stress reduction
- Vit E (?) 2000U/day-found to delay functional decline in mild to moderate AD
- Avoid anti-cholinergic drugs(benztropine,TCAs,Clozapine)
- Limit prn psychotropic drug use
- Maximize & maintain functioning
- Identify, quantify and examine context of any problematic behavior

Pharmacological treatment

- Choline esterase inhibitors (ChEIs) e.g **Donepezil** -
Easy titration (start 5mg/day, then 10), Side effects: GI (nausea, diarrhea), Can be associated with bradycardia; Main effects: show modest global improvement and less rapid cognitive decline, delayed time to needing nursing home/more intensive care
- NMDA(*N-methyl*-D-aspartate) antagonist e.g **Memantine** -Moderate to severe AD (MMSE 3–14)
- Ginkgo biloba –not generally useful-not recommended
- ?Link with **Hyperlipidemia**-Conflicting data; Retrospective studies suggest decreased risk in those patients who are treated with statins

Behaviour problems

- The most common behaviour problems in demented persons include:
 - Resisting care
 - Screaming
 - Repeating things over and over
 - Striking out physically
 - Inappropriate sexual behavior
 - Taking clothes off in inappropriate places or undressing throughout the day
 - Hoarding things and
 - Smearing faecal matters

Behaviour problems

- In order to determine which **factor triggers difficult behaviour**, the patient must be observed and the family care-giver should be interviewed.
- Bathing and toileting are the common ones which start these behaviors.
- Other factors which cause these behaviors are
 - Too much stimulation in the environment from people and noise
 - Unfamiliar person and places
 - Being forced to do something
 - Too many instructions at once
 - Accumulation of physical energy from inadequate activity and exercise
 - Fatigue
 - Physical discomfort from pain, fever or constipation and
 - Inability to communicate needs.

Behaviour problems

- Approaches in reducing violent behavior may include the following:
 - Making a routine for daily care to improve predictability
 - Determining the ideal time of day for doing needed things
 - Trying not to surprise the person by any action.
 - Avoiding argument and physical restraining
 - Diverting the person's attention
 - Engaging the older person in recreational activities which use the whole body

Treatment of agitation

- Non- pharmacological approaches-first preferred
- Steps to reduce non-verbalized pain
- Low dose anti-psychotic medications –mainly atypical antipsychotics like **Olanzapine,risperidone,Quetiapine** because of lesser EPS,sedation and confusion

Non- pharmacological approaches for problematic behavior

- To improve function:
 - Behavior modification, scheduled toileting & prompted toileting
 - Graded assistance (as little help as possible to perform ADLs, practice and positive re-inforcement to increase independence)
- For problematic behavior:
 - Music during meals, bathing
 - Walking or light exercise
 - Family presence
 - Pet therapy
 - Speak at patient's comprehension level
 - Bright light, "white noise" (i.e. low level, background noise)

Treatment of Apathy

- Assess and treat underlying depression
- Choline esterase inhibitors :small divided day time dosage and larger bedtime dosage

Maintenance of Independence

- In order to maintain independence as long as possible, demented persons must be kept stimulated and involved in activities.
- Reality orientation is an approach in which the demented person is re-educated by health care workers and family members in a regular manner.
- The process should start with simple objects in the surrounding going on to activities of daily living.
- Sensory stimulation is another approach in which different senses are stimulated by familiar objects (scent for smell, sugar or salt for taste, etc.) with recall and reminders

Communication

Communication should stress the following:

- The older person should not be hurried when trying to speak and they should be allowed time to consider what they want to say.
- If the older person starts to forget what they are trying to say, the last words or sentence that that spoke should be repeated to give them the cue.
- Short simple sentences and ones which can be answered by a Yes or No should be used.
- The most important content of what needs to be communicated is given at the end of the sentence.
- Instructions should be given one at a time.
- Background noise and distractions should be avoided as far as possible.
- Part of the importance of communicating well and patiently is that this often prevents the occurrence of agitation and other disruptive behaviour.

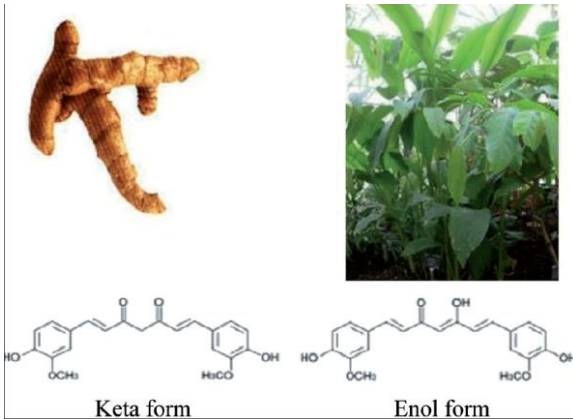
Protection from harm

- Many things in the home must be considered while planning for safety.
- If the demented person turns the stove/burner on, then fire is a potential hazard.
- If the stove is electric, it should be disconnected when the elderly is at home alone as well as during the night
- if wandering is a problem, the older person must always be under someone's observation in order to be secured and protected to prevent wandering away from home.
- The most important point is to anticipate the safety needs by conducting a thorough assessment of risk

Care giver issues

- The family needs a great deal of emotional support in taking care of a relative with dementia.
- Discuss with patient & family concerned
- Advise family about sources of care & support, financial issues.
- This may include co-ordination with support groups (volunteers from CHS, local police station etc).
- The family also needs to have arrangements for relief of responsibilities(siblings,near relatives) so that they do not become exhausted and socially isolated.
- Over 50% care-takers develop depression
- Physical illness,isolation,anxiety and burnt-out common with care-takers
- Intensive education and support of care givers may delay institutionalization(sending to old age homes etc)
- Adult day care for patients and respite services(gives care-giver free time)

Curcumin (Turmeric) in Dementia



- Curcumin (Turmeric-***haldi***), an ancient Indian herb used in curry powder, has been extensively studied in modern medicine and Indian systems of medicine for the treatment of various medical conditions
- It has been used in various types of treatments for dementia and traumatic brain injury.
- Curcumin –the main constituent , polyphenolic compound has a potential role in the prevention and treatment of AD.
- Curcumin as an antioxidant, anti-inflammatory and lipophilic action improves the cognitive functions in patients with AD.
- Use as food additive.

Dementia-burden

- Dementia is the most important public health problem of old age in the developed world and in the near future will become so in India and other developing countries as well.
- There are **more than 3 million** patients of dementia at present in India.
- Care of such a large number of the demented elderly is a major challenge for the society.

Thank You