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Dr. Roger Butler • ST JOHN'S • NL

4 VISIT APPROACH TO SORTING OUT DEMENTIA

This session will be an interactive session which will have a 30 min slide introduction describing the 4 visit approach followed by 30 min Q&A session. The attendee will receive a handout with the 4 visit protocol highlighted .

1. At the conclusion of this session the participant will be able to diagnose mild cognitive impairment and understand its relationship to dementia . 2. Be aware of the differential diagnosis of dementia , be able to correctly diagnose the common forms of dementia. 3. Be aware of the common investigations used in the diagnosis of dementia . 4. Be aware of the commonly used drugs for treatment of dementia ,their indications/contraindications , and common side effects

4 Visit Approach To Sorting Out Dementia

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Medicine Course , April 14th ,2018

CFPC Col Templates: Slide 1

Faculty/Presenter Disclosure

- **Faculty: Dr. Roger Butler**
- **Relationships with commercial interests:**
 - **Grants/Research Support:** Alzheimer's Society of Canada, NLCAHR,
Government of NL and MUN
 - Nil else

CFPC Col Templates: Slide 2

Disclosure of Commercial Support

- This program has received a CME honorarium which I have used to pay for my attendance.

There are no potential sources of conflict of interest identified.

CFPC Col Templates: Slide 3

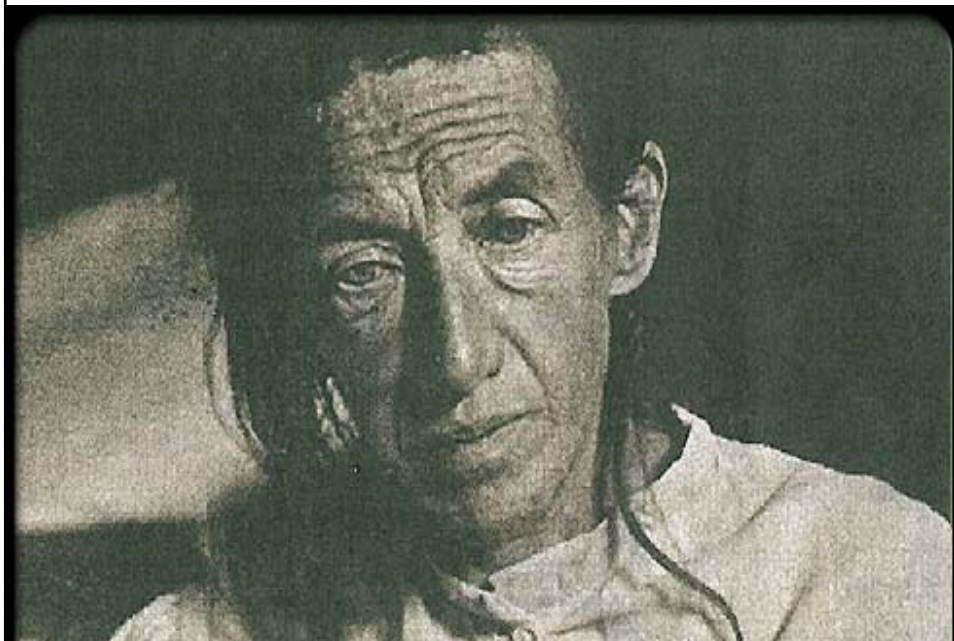
Mitigating Potential Bias

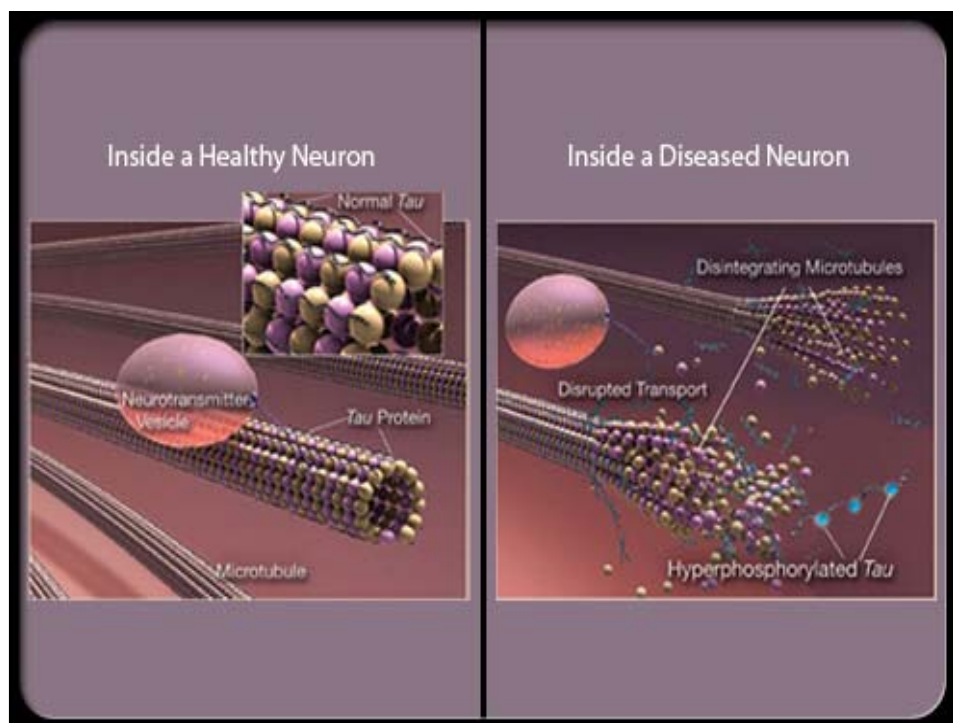
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Objectives

1. At the conclusion of the session the participant will be able to diagnose mild cognitive impairment and understand its relationship to dementia.
2. Be aware of the differential diagnosis of dementia and be able to correctly diagnose the common forms of dementia.
3. Be aware of the common investigations used in the diagnosis of dementia .
4. Be aware of the commonly used drugs for the treatment of dementia , their indications /contraindications , and common side effects.

Auguste Deter 1901





DSM-5

Minor Neurocognitive Disorder

1. Evidence of modest cognitive decline from a previous level of performance in one or more cognitive domains (complex attention, executive function , learning and memory , language , perceptual –motor , or social cognition)
2. The cognitive deficits do not interfere with capacity for independence in everyday activities (i.e. complex IADL's are preserved, but greater effort , compensatory strategies , or accomodation may be required)
3. The cognitive deficits do not occur exclusively in the context of a delirium
4. The cognitive deficits are not better explained by another mental disorder(e.g., major depressive disorder , schizophrenia)

Mild Cognitive Impairment

- Cognitive complaints preferably corroborated by an informant
- Objective cognitive impairment(memory , executive function , language , visuospatial function)
- Normal general cognitive function
- Not demented

DSM -5

Major Neurocognitive Disorder

1. Evidence of significant cognitive **decline** from a previous level of performance in **one** or more cognitive domains (complex attention, executive function , learning and memory, language, perceptual- motor , or social cognition) based on :
- 2.The cognitive deficits interfere with independence in everyday activities
- 3.The cognitive deficits do not occur exclusively in the context of a delirium
- 4.The cognitive deficits are not better explained by another mental disorder(e.g., major depressive disorder, schizophrenia)

DSM-5

Major Neurocognitive Disorder

- Specify presumed etiology (e.g. AD,FTD,DLB,VaD,etc.)
- Specify with or without behavioral disturbance(e.g. psychotic symptoms, mood disturbance, agitation ,apathy , or other symptoms)
- Specify current severity
 - a. **Mild:** Difficulties with IADL's(e.g. housework , managing money
 - b. **Moderate:** Difficulties with basic ADL's (e.g. feeding , dressing)
 - c. **Severe:** Fully dependent

DSM-5 Criteria for Vascular Dementia

- A . Evidence of significant cognitive decline from a previous level of performance in one or more cognitive domains:
 - 1.Learning and memory
 - 2.Language
 - 3.Executive function
 - 4.Complex attention
 - 5.Perceptual-motor 6.social cognition

DSM-5 Criteria for Vascular Dementia

B. The cognitive deficits interfere with independence in everyday activities. At a minimum, assistance should be required with complex iADL's such as paying bills or managing medications.

C. The cognitive deficits do not occur exclusively in the context of a delirium

D. The cognitive deficits are not better explained by another mental disorder (e.g., major depressive disorder, schizophrenia).

E. The clinical features are consistent with a vascular etiology, as suggested by either of the following:

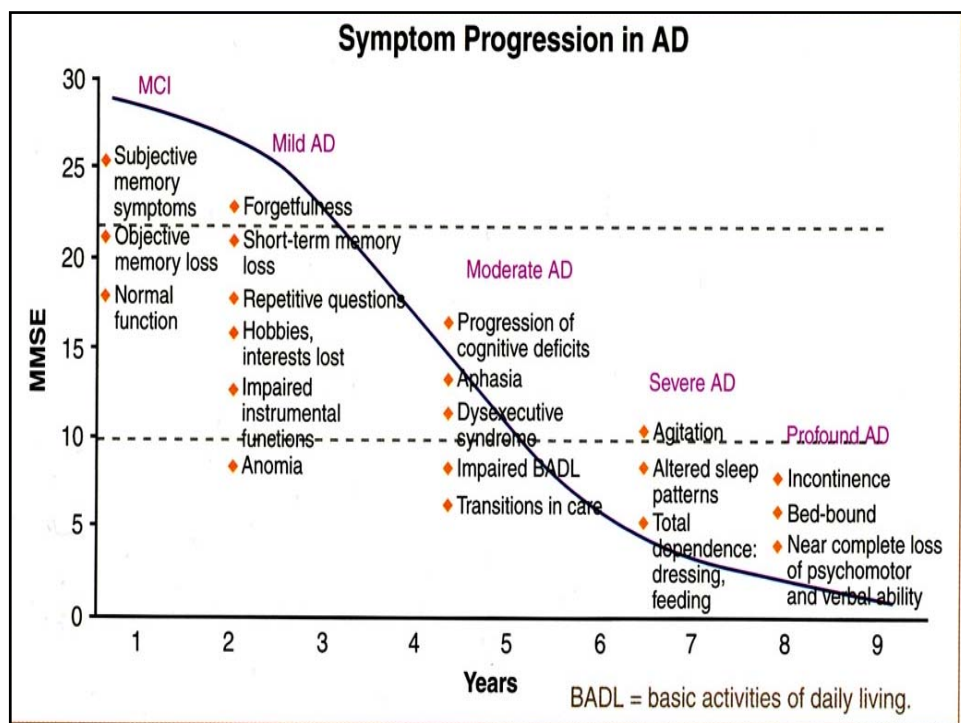
....onset of cognitive deficits is temporally related to one of more cerebrovascular events

....evidence for decline is prominent in complex attention (including processing speed) and frontal – executive function

DSM-5 Criteria for Vascular Dementia

F. There is evidence of the presence of cerebrovascular disease from history, physical examination, and /or neuroimaging considered sufficient to account for the neurocognitive deficits.

G. The deficits are not better explained by another brain disease or systemic disorder.



Mild Cognitive Impairment

- Amnestic MCI (a-MCI)
- Non-Amnestic MCI
- Multi domain MCI (amnestic –non amnestic)
- 12-15% per year progress to diagnosis of dementia vs . 1-2% of matched healthy older adults
- Predictors of conversion of MCI to Dementia
 - Greater hippocampal atrophy
 - Temporoparietal hypometabolism on PET
 - ApoE 4 allele
 - Positive Amyloid PET imaging
 - Multidomain > single domain

Vascular Cognitive Impairment

- Caused by or associated with vascular factors
- Don't meet the criteria for dementia
- vCIND
- Concept proposed by NINDS and Canadian Stroke Network Vascular Cognitive Impairment Harmonization Standards

When to suspect this diagnosis?

- Presence of cerebrovascular risk factors
- History of stroke
- Sudden changes in cognition
- Specific examination findings
- Specific findings on cognitive testing

Risk Factors

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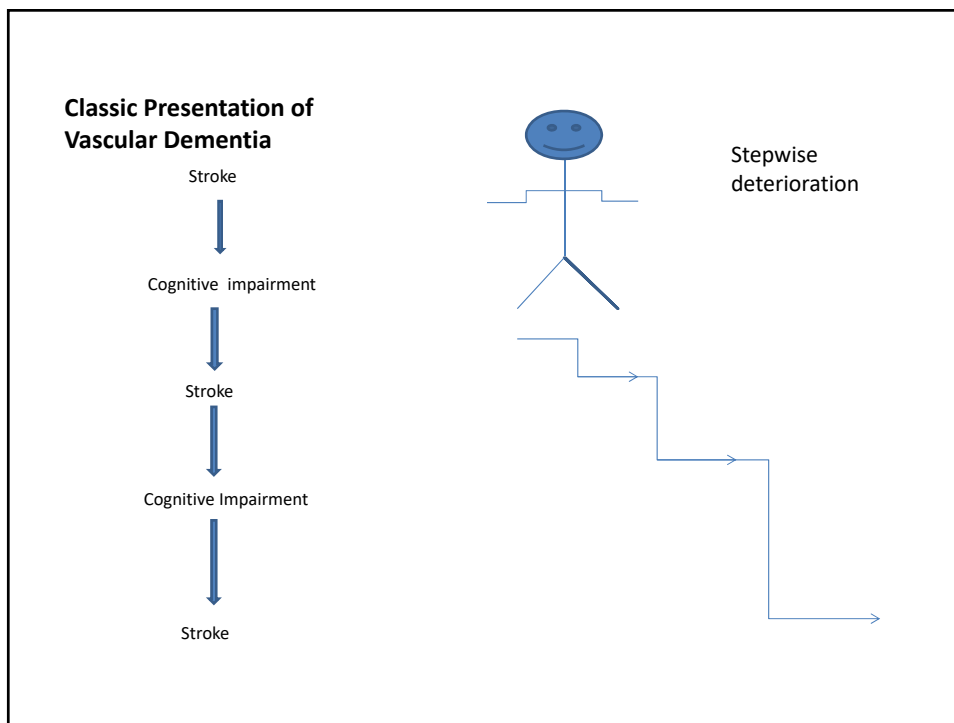
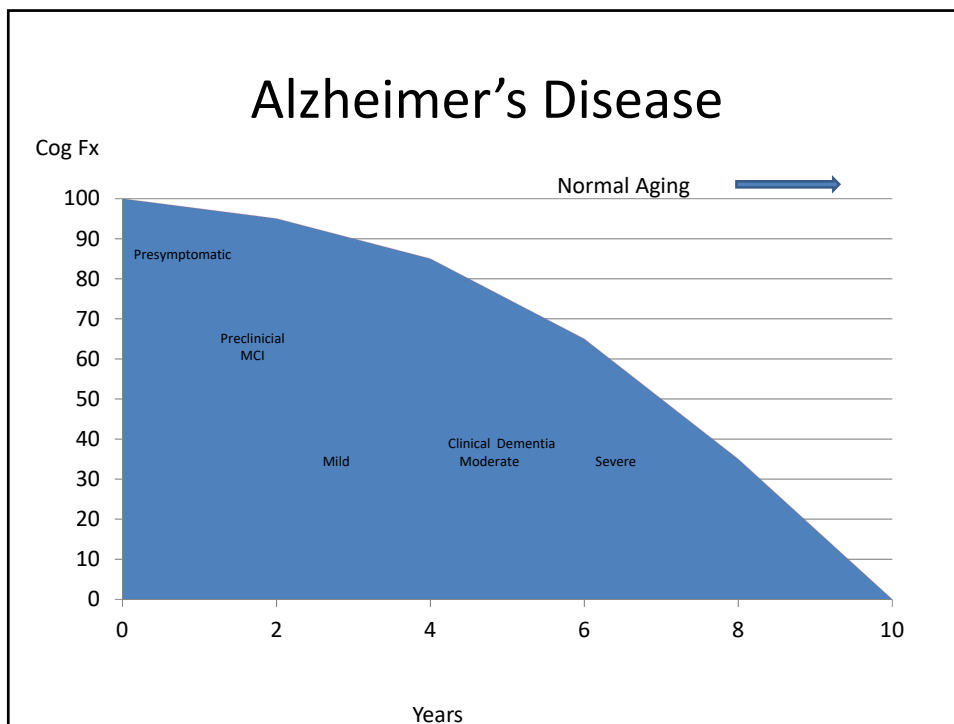
Hypertension

Hypercholesterolemia

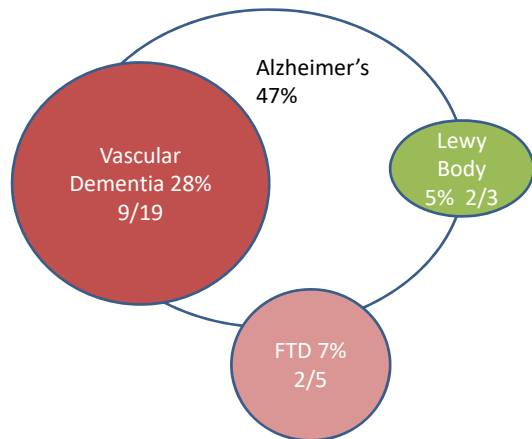
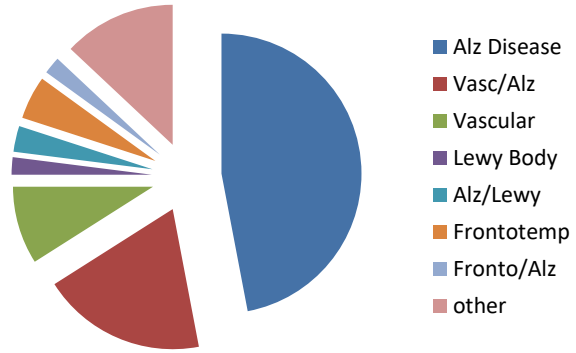
Diabetes

Smoking

Obesity




Memory Clinic Data in Canada (2008)



Causes of Cognitive Impairment and Dementia				
Neurodegenerative	Inflammatory /Infectious	Vascular	Metabolic /Toxins	Neoplastic/Structural
Alzheimer's Disease	Multiple Sclerosis	Vascular Dementia	Hypothyroid	Tumor (location dependent)
Frontotemporal Dementia	Syphilis	Hypoxic/Ischemic Injury	Vitamin B12	Paraneoplastic Limbic Encephalitis
Lewy body Dementia	Lyme Disease	Post-CABG	Thiamine Deficiency Wernicke-Korsakoff	Acute and Chronic Sequelae of Brain RAD
Corticobasilar Degeneration	HIV	CADASIL	Niacin Deficiency (Pellagra)	Chemotherapy
Progressive Supranuclear Palsy	Creutzfeldt-Jakob Disease	CAA	Vitamin E Deficiency	Lymphomatoid Granulomatosis
Huntington's Disease	Primary CNS Vasculitis		Uremia /Dialysis Dementia	Traumatic Brain Injury (TBI)
Multisystem Atrophy	Vasculitis 2ary to other autoimmune diseases		Addison /Cushings	Normopressure Hydrocephalus
Argyrophilic Brain Disease	Sarcoid		Chronic Hepatic Encephalopathy	
Wilson's Disease	Chronic Meningitis		Heavy Metals	
Hallevorden-Spatz Disease	Viral Encephalitis		Alcohol	
Mitochondrial Disease	Whipple Disease			
Kuf Disease	Systemic Lupus Erythematosus			
Metachromatic Leukodystrophy	Sjogren Syndrome			
Adrenal				

Tools

- MMSE
- Mini-Cog
- MOCA



Name: _____
 MCPN: _____
 Chart #: _____

Folstein Mini Mental Status Examination			
Task	Instructions	Scoring	Patient's Score
Date Orientation	"Tell me the date"	One point each for year, season, date, day of week, and month	5
Place Orientation	"Where are you?" Ask for omitted items.	One point each for country, province, town, building, and floor or room	5
Register 3 Objects	Name three objects slowly and clearly. Ask the patient to repeat them.	One point for each item correctly repeated	3
Serial Sevens	Ask the patient to count backwards from 100 by 7. Stop after 5 answers. (Or ask them to spell "world" backwards.)	One point for each correct answer (or letter)	5
Recall 3 Objects	Ask the patient to recall the objects mentioned above.	One point for each item correctly remembered	3
Naming	Point to your watch and ask the patient "what is this?" Repeat with a pencil.	One point for each correct answer	2
Reporting a Phrase	Ask the patient to say "No ifs, ands, or buts."	One point if successful on first try	1
Verbal Commands	Give the patient a plain piece of paper and say "Take this paper in your right hand, fold it in half, and put it on the floor."	One point for each correct action	3
Written Commands	Show the patient a piece of paper with "CLOSE YOUR EYES" printed on it.	One point if the patient's eyes close	1
Writing	Ask the patient to write a sentence.	One point if sentence has a subject, a verb, and makes sense	1
Drawing	Ask the patient to copy a pair of intersecting pentagons onto a piece of paper. Use reverse side.	One point if the figure has ten corners and two intersecting lines	1
Scoring	A score of 24 or above is considered normal		30

Adapted from Folstein et al, Mini Mental State, J PSYCHI RES 12:129-138 (1975)

Date: _____ Signature and Stamp: _____

SEE AGE AND EDUCATION/MMSE SCORES CORRELATIONS ON REVERSE SIDE.

38802 CH-088

Minicog

- 3 item recall plus clock test
- 0 on the recall highly suggestive of dementia
- Recall 1 or 2 and clock positive highly suggestive of dementia
- Recall 1 or 2 and clock negative highly suggestive not demented
- Recall 3 not demented
- Odds ratio for abnormal cognition is 24:1

MONTREAL COGNITIVE ASSESSMENT (MOCA)

NAME: _____ Date of Birth: _____
 Education: _____ Sex: _____ DATE: _____

<p>VISUOSPATIAL / EXECUTIVE</p> <p>Copy cube: _____ Draw CLOCK (Use past eleven): _____</p>	<p>NAMING</p> <p>FACE VELVET CHURCH OMSY RED</p>
<p>MEMORY</p> <p>Read list of words, subject must repeat them. On a cue, repeat 1st word & so on.</p> <p>1st trial: _____ 2nd trial: _____</p>	<p>ATTENTION</p> <p>Read list of digits (1 digit/sec.). Subject has to repeat them in the forward order [] 2 1 8 5 4 and in the backward order [] 7 4 2</p> <p>Read list of letters. The subject must tap with his hand at each letter A. Response if a 2 sec.</p> <p>Serial 7 subtraction starting at 100 [] 93 [] 86 [] 79 [] 72 [] 65 [] 58</p>
<p>LANGUAGE</p> <p>Repeat: I only know that John is the one to help today. []</p> <p>Draw: always left under the coach when they were in the room. []</p> <p>Fluency: Name maximum number of words in one minute that begin with the letter F. [] (60 s 11 words)</p>	<p>ABSTRACTION</p> <p>Similarity between e.g. banana - orange - fruit [] milk - bicycle [] watch - ruler []</p>
<p>RELATED RECALL</p> <p>Read non-related words: FACE VELVET CHURCH OMSY RED</p> <p>Write into clock: [] [] [] [] [] []</p>	<p>Optional</p> <p>Category use: _____</p> <p>Multiple choice use: _____</p>
<p>ORIENTATION</p> <p>[] Date [] Month [] Year [] Day [] Place [] City []</p>	<p>TOTAL _____ /30</p> <p>Abn 1 point if < 12 p. one</p>

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Interpretation of Screening tools

Test Tool	Duration	Cut Off Scores	Additional Information	Advantages
MMSE	7-10 min	24-26	Age and Education adjust norms	Huge Data Set
Mini Cog	2-3 min	0/3 words 1-2/3 words and Abn CDT	Error rate equal to MMSE	Very quick
MoCA	10-15 min	24-26		More sensitive than MMSE for MCI

Pharmacological Therapy

- Cholinesterase inhibitors where and when to use?
- Memantine
- SSRI's, SNRI's
- Benzodiazapines
- Typical and atypical antipsychotics

Cholinesterase Inhibitors: Donepezil, Galantamine and Rivastigamine

- Standard of care mild to moderate dementia
- Moderate benefit up a year rapidly lost with D/C
- Avoid in cardiac conduction abnormalities except RBBB.
- Caution with history of ulcers, seizures, asthma or COPD
- Unexplained syncope
- Recent Health Canada warning on Donepezil and NMS.

NMDA Receptor Antagonists

- Memantine indicated for moderate to severe dementia
- Monotherapy or adjunctive therapy
- Not indicated in severe renal failure
- Caution with CVS disease or seizures
- Common side effects i.e. dizziness, constipation, confusion, headache and hypertension

SSRi's

- Minimal anticholinergic effect so agent of choice
- If activating change dosing to morning
- Go low and go slow
- Trial is minimum of 12 weeks
- Concomitantly with Chei's

Benzodiazapines

- Behavioural emergencies
- Sedation for procedures
- Low dose, short time and only after sleep hygiene
- Lorazepam 0.5 mg / oxazepam 10-15 mg reasonable choices
- Low dose zopiclone 3.75mg
- OTHER CONSIDERATIONS FOR SEDATION
- Remeron 15mg
- Trazadone 25mg-100mg
- Melatonin 5mg

Typical and Atypical Antipsychotic

- Severe behavioural problem
- Administered with behavioural strategy
- Atypicals only for 3/12 when working before trial of discontinuation
- Typical very short time interval i.e. days
- Recent Health Canada warning on risperidone and vascular dementia.

Schneider, Lon, et al, 2005 Excess Death

- NNT 4-12
- NNH (death) 100
- For every 2-25 patients helped in the trials, there was 1 possible death
- No one drug was particularly responsible
- Haloperidol was randomly and double blindly assigned in 2 of the trials and the risk for death was similar to the atypicals but not significant statistically

Which Drugs to Avoid?

- Anticholinergics: Dimenhydrinate, Oxybutrin, Cimetidine, Digoxin
- Benzos
- High potency neuroleptics ...Haloperidol - long term has very high rate EPS and Tardive Dyskinesia
- Polypharmacy is problematic

Behaviour and Therapy Response

Work with drugs

- Agitation
- Psychosis
- Apathy
- Depression

Unlikely to work with drugs

- Wandering
- Perseverative shouting
- Some sexually inappropriate behaviours

Sexual Disinhibition

- SSRI's
- Atypical antipsychotics
- Hormone therapy: Medroxyprogesterone, Cyproterone, or Leuprolide

Pharmacological Principles for Dementia

- Wait 2 weeks after admission to facility before initiating a medication change
- One drug –one week
- When stopping Cholinesterase Inhibitors i.e. Donepezil, Galantamine, Rivastigamine or NMDA receptor antagonists i.e. Memantine... an increase in aggressive behaviour in the 2 weeks following can be interpreted as a positive treatment response and the medication should be restarted a.s.a.p.