DEMENTIA AND PARKINSON'S DISEASE

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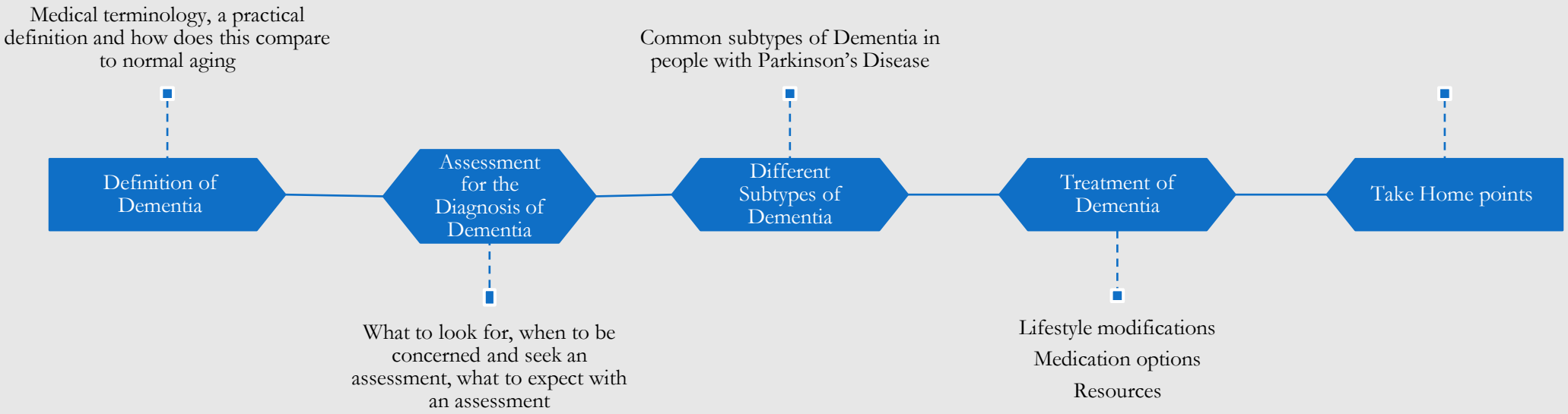
Overview of Presentation



Definition of Dementia

- Dementia is called Major Neurocognitive Disorder as per the Diagnostic and Statistical Manual of Mental Disorders 5th Edition (DSM V).
  - Requires evidence of progressive substantial cognitive decline from a previous level of performance in one or more of the cognitive domains
    - Complex attention
    - Executive ability (planning decision making)
    - Learning and memory (short term memory)
    - Language (naming, fluency)
    - Perceptual /motor/visual ability (using a tool such as a telephone or microwave)
    - Social cognition (socially appropriate behaviour).
    - Other potential causes of symptoms such as medical illness (B12 deficiency, delirium) or depression have been ruled out

Definition of Dementia in Daily Life

- Dementia is a loss of ability due to changes in memory or processing ability of the brain.
- It requires
  - Subjective change noted in memory- the person themselves or loved ones noticing a change in memory
  - Objective changes on a memory test such as a Mini-Mental Status Exam (MMSE)
  - KEY FEATURE- Functional loss because of the memory change. No longer being able to complete a task that you could before because of the memory changes

Definition of Dementia

- Often people normalize memory changes as part of aging but there is no normal memory loss with aging.
- Normal Aging leads to Memory Slowing, Dementia results in Memory Loss.
  - A simile I often use is if we had a computer that was 75 years old and asked it to retrieve a file, we would think it is normal for that computer to take time to go through all 75 years worth of data to retrieve that one file. That is memory slowing like having to pause to find a word in a conversation or taking time to remember why you walked into the bedroom. So long as the information comes back to you that is normal given the vast amounts of information stored in a brain through the decades.
  - Dementia is if you ask that computer to retrieve the file and it whirls and whirls working away but comes back with "file not found". Losing that information is not normal. For example if previously you could always mange your own finances but now you've made mistakes with payments or investments or you could previously work your TV and remote to find the programs you want to watch but now you cannot. This is a loss of function because of memory deficits.

Assessment for the Diagnosis of Dementia

- When concerns regarding memory changes arise from a person themselves or their loved ones it is appropriate and suggested to discuss them with your primary care physician. It may be that here is another cause for the symptoms that requires treatment or if this is Dementia early diagnosis and treatment makes a significant impact on symptom management, independence and quality of life.
  - If after discussion a Family Physician believes that further work up is needed they can refer you to a Specialist in Geriatric Medicine (Geriatrician), Geriatric Psychiatrist or a Neurologist with extra training in Cognition Disorders.

  - With the adaptations needed for the COVID-19 pandemic, specialists have been able to conduct consultations via virtual health using telephone or video conferencing. Cognitive Consultations can very easily be done via virtual health. This has opened up doors for those who live in remote areas or those who are unable to travel from home to a doctors office to have an assessment done.

What to expect from a Cognition Consultation

- When discussing memory changes with a Family Physician or a Specialist you can expect questions regarding the history what types of memory change you see, how long they have been happening, are they progressing gradually or in an abrupt stepwise manner, have they led to safety concerns, have there been any mood changes or behavioural changes, any history of hallucinations or delusions and risk factors for memory impairment like educational history, smoking, alcohol, drug use, history of heart attack, stroke, concussion and family history.

What to expect from a Cognition Consultation

- A “functional review” will also be done with the doctor asking specific questions regarding changes in ability to do tasks for the household like shopping, housekeeping, finances, cooking and driving or taking transit. These are called the Independent Activities of Daily Living (IADLs) and are necessary to be able to live independently. They will also ask about the Basic Activities of Daily Living (BADLs) such as dressing, eating, walking and general mobility, toileting and personal hygiene. Changes in function are key in the diagnosis of Dementia.
- There are other diseases that can present with similar symptoms to Dementia so you will also be asked questions specifically about anxiety, depression and other medical issues that might lead to a delirium.

What to expect from a Cognition Consultation

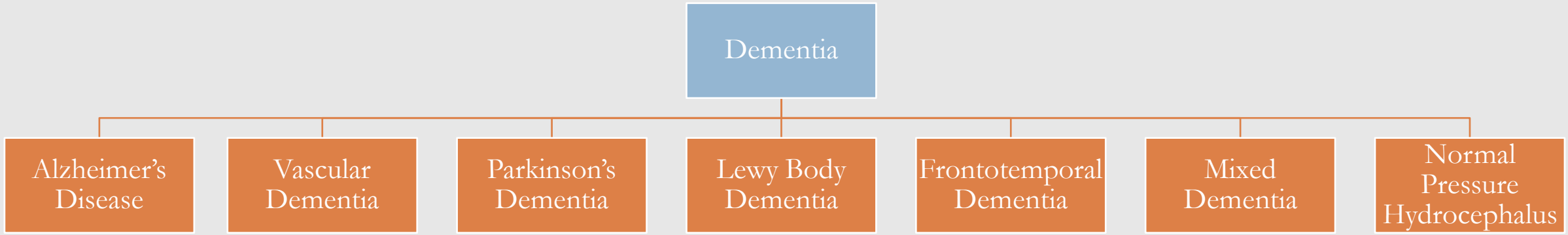
- Based upon the history of memory changes, the history of other medical illnesses (Past Medical History), Medication list and risk factors the doctor will then complete an exam. This exam will involve memory testing with standardized tests such as the MMSE and can also include a physical exam and depression screen.

What to expect from a Cognition Consultation

- The most recent blood tests and any prior brain scans will be reviewed. If there are tests that are missing the doctor will then order these for you to complete work up. Common tests ordered include a thyroid test and vitamin B12 level. An image of the brain is also helpful and a CT Scan or a MRI may be ordered based upon the history and physical exam findings from the doctor. These tests are helpful to rule out other causes of memory change, help identify reversible causes of memory changes such as B12 deficiency and narrow down the subtype of Dementia.

Diagnosis of Dementia and Subtypes

- At your initial consultation you may get a diagnosis or the specialist may need to wait for the results of blood work and a brain scan. Once you have a confirmed diagnosis of Dementia the next step is to determine the subtype.
- Dementia is an umbrella term that means memory loss. Beneath that umbrella are different subtypes of Dementia caused by different disease and following different paths.



Subtypes of Dementia – Alzheimer's Disease

- Alzheimer's Disease is the most common subtype of Dementia accounting for approximately 2/3 of all cases of Dementia
- It presents with short term memory and language changes first.
- The disease process involves plaques and tangles and is different than Parkinson's Disease but the outcome is the same resulting in neuron death.
- The pattern of Alzheimer's Disease begins in the temporal lobe which controls memory and attention and this helps differentiate it from Parkinson's Dementia.
- It is possible to have both Parkinson's Disease and Alzheimer's Disease at the same time.

Subtypes of Dementia- Vascular Dementia

- Vascular Dementia is the second most common type of Dementia.
- It results from poor blood flow to the brain. This results in neuron death and functional loss.
- It can occur throughout the brain with consistent blood flow problems such as untreated high blood pressure or diabetes.
- It can also occur with major sudden changes such as a stroke.
- The diagnosis is confirmed with an image of the brain such as a CT or MRI.

Subtypes of Dementia- Parkinson's Dementia

- Occurs in 50-80% of people with Parkinson's Disease
- By definition memory changes occur at least a year after the onset of Parkinson's Disease motor (physical) symptoms
- It affects attention, reasoning and planning, problem solving, speed of comprehension and thought and mood.
- It is due to the same disease process that causes Parkinson's Disease, inclusion bodies called Lewy Bodies, that lead to neuron death. This happens first in areas of the brain that affect physical function and then with time progresses into the temporal and frontal lobe where memory and problem solving are affected.
- There are often more mood changes and a higher incidence of delusions (hallucinations or paranoia) with Parkinson's Dementia.
- It is more likely to occur with greater severity of Parkinson's Disease symptoms and usually occurs 5 to 10 years after the initial diagnosis of Parkinson's Disease

Subtypes of Dementia – Lewy Body Dementia

- Lewy Body Dementia is similar to Parkinson's Dementia in that it is due to Lewy Body inclusion bodies leading to neuron death. Lewy Body Dementia is differentiated from Parkinson's Dementia only in it's timing. Lewy Body Dementia by definition occurs within the year of diagnosis of Parkinsonism (physical symptoms of Parkinson's Disease).
- Lewy Body Disease progresses at a faster rate than Parkinson's Disease and often has delusions as an earlier symptoms.
- Patients with Lewy Body Disease are also often sensitive to a class of drugs called Antipsychotics and can have severe side effects such as freezing with them.

Subtypes of Dementia -Frontotemporal Dementia

- Frontotemporal Dementia is a disease that follows a specific pattern of neuron death in the brain. The temporal lobe which houses memory and language and the frontal lobe which houses social behaviours and reasoning are affected.
- Onset is usually a younger age with people in their early 60s but can occur at any age
- There is a familial inheritance for some types of Frontotemporal Dementia.
- Language or behavioural concerns (socially inappropriate behaviours) are usually the first symptom. With time physical symptoms with falls and mobility issues occur.

Subtypes of Dementia – Mixed Dementia

- Mixed Dementia refers to a presentation of Alzheimer's Disease and Vascular Dementia at the same time.
- Symptoms of both diseases overlap and can be difficult to distinguish, but a CT or MRI scan can show signs of both leading to this diagnosis.

Subtypes of Dementia- Normal Pressure Hydrocephalus

- Normal Pressure Hydrocephalus, often called simply NPH, is commonly considered along with Parkinson's Disease and Lewy Body Dementia during initial assessment.
- The diagnostic triad for NPH is
  - New onset of Dementia
  - Changes in walking with a shuffling type gait that is called a "Magnetic Gait"
  - New Urinary Incontinence
- The walking changes and memory concerns are similar to Parkinson's Disease and Lewy Body Dementia and therefore future investigation for NPH is often done to rule it out. An MRI can clearly rule in or out NPH as there are specific imaging criteria for this diagnosis

Treatment of Dementia

- The first thing to remember with a diagnosis of Dementia is that though the word carries a taboo or weight to it in casual conversation, it does not mean that all hope is lost.
- It means that similar to diseases that affect other organs of the body like heart failure or kidney failure that the memory centres are affected and need treatment.
- Like heart disease, there are no cures to reverse the effects of Dementia but there are strategies to prevent the worsening of the disease.
- Stability with Dementia means that functional ability is preserved and that a person can maintain their independence and quality of life for years to come.

Treatment of Dementia- Lifestyle Strategies

- The most important part of Dementia treatment is activity. Both physical and mentally stimulating activities help to slow the progression of all types of Dementia and are the first step in treatment regardless of subtype.
- Cardiovascular exercise with a minimum of 150minutes per week has been shown to slow the rate of progression of Dementia, delay the need for a higher level of care and improve quality of life. Cardiovascular activity does not need to be onerous with a walk at a normal pace being sufficient.
- The exercise does need to be more than regular daily activity, household chores such as laundry or mowing the lawn do not count towards the exercise time. "Exercise has to be extra" activity that you do.

Treatment of Dementia- Lifestyle Strategies

- Mentally stimulating activities are also important for the treatment of Dementia.
- Staying mentally engaged helps the prevent symptoms of anxiety and depression and also help to challenge the memory.
- Using hobbies you already enjoy is important. Starting new ones in the setting of Dementia will only lead to frustration.
- Any hobby can be used to engage your memory; for example watching the news can be helpful if you talk about what you have walked a few hours later challenging your memory.

Treatment of Dementia with Medications

- Physical Activity and Mental Activity are the foundation of treatment and medications can also help.
- The medication choices suggested will depend on a person's medical history, the subtype of Dementia and the severity of Dementia.
- For those with mild to moderate Dementia a class of drugs called Cholinesterase Inhibitors can be used.
- These drugs are the second generation of Dementia Drugs. There are three readily available in Canada: Donepezil, Galantamine and Rivastigmine.
- In British Columbia, based upon a MMSE score Donepezil (brand name Aricept) is covered first line by PharmaCare. If there are severe intolerance symptoms to Donepezil then your doctor can apply for coverage for Galantamine or Rivastigmine

Treatment of Dementia with Medications

- All 3 Choinesterase Inhibitors are equivalent in their effectiveness so the recommendations to start with Donepezil does not pose a concern of "losing out" on the other choices.
- The medications are taken by mouth. Rivastigmine does have a patch form as well for those with difficulty swallowing pills though unfortunately it is not covered by PharmaCare.
- Donepezil is taken once a day and is usually well tolerated. The most common side effect is upset stomach. If you are prescribed it your family doctor or Specialist will go through other common side effects with you as well.

Treatment of Dementia with Medications

- Cholinesterase Inhibitors have been shown to slow the progression of disease in mild to moderate Dementia. For those with moderate to severe Dementia they have proven ineffective
- In this situation an alternative medication called Memantine (brand name Ebixa) is used. It does not alter the progression of the disease but does help deal with behavioural concerns that may arise.

Treatment of Behavioural Changes in Dementia

- Behavioural concern can occur with Dementia with time. These are referred to as the Behavioural and Psychological Symptoms of Dementia. With memory loss there is a feeling of being lost in time and space which presents as anxiety, fear or aggression in patients. This can lead to the need for medications to deal with these behaviours.

Treatment of Behavioural Changes in Dementia

- Antidepressants such as Citalopram (brand name Celexa), Mirtazapine (brand name Remeron), Sertraline and Trazodone are the first line medications suggested for behavioural concerns with Dementia. They can also be used for mood changes that are common with Dementia. They are considered safe in the elderly population and safe in Parkinson's Disease.

Treatment of Behavioural Changes in Dementia

- Antipsychotics such as Quetiapine (brand name Seroquel), Risperidone (Risperidal) and Olanzapine are used in patients with more severe behavioural concerns with Dementia when they present a danger to themselves or others. In Parkinson's Dementia and Parkinson's Disease with another subtype of Dementia, however, they are not recommended as they are more likely to cause side effects including confusion and falls.

Treatment of Dementia- Supports

- Education and support for those with Dementia, caregivers and loved ones is also paramount.
- Education regarding symptoms and strategies for how to cope are invaluable after a diagnosis of Dementia. Your physician may connect you with a NeuroPsychologist, case manager through local health unit or the First Link Program of the Alzheimer's Society.
- Support to manage safety and functional decline are also key. In British Columbia these are offered through public service from your local health authority. Private supports through companies such as Home Instead or Nurse Next Door are also available. You can discuss further with your physician which is best for you.

- If you have questions about how to access supports please visit my clinic's website and scroll down to the External Services section. https://pacificgeriatricians.com/additional-resources/

Take home points

- Dementia is a common disease that occurs in 50-80% of people with Parkinson's Disease
- The key to diagnosis for all Dementias is a loss of function. A subjective change and deficits on memory tests is also part of diagnostic criteria.
- If you have concerns about memory it is best to discuss this early with your Family Physician who may refer you on to a Geriatrician, Geriatric Psychiatrist or Neurologist with Cognitive Training.
  - The assessment for cognition can be done with Virtual Health so those living in remote areas or with mobility concerns can also easily be assessed.
- There are many subtypes of Dementia and a person with Parkinson's Disease may have Parkinson's Dementia or have any of the other subtypes.
- The foundation of treatment is physical exercise and mentally stimulating activities. Medications for memory and behaviours may also be recommended.
- Education and Supports in the home are key and available through your physician, home supports, local societies and private support services.

THANK YOU

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