

Lewy Body Dementia

DEMENTIA CARE 2019

LORRAINE PEITSCH MD FRCPC

Disclosures

I have no disclosures.

Outline

- ❖ Dementia
- ❖ Dementia with Lewy Bodies
 - ❖ Lewy Body Dementia
 - ❖ Parkinson's Disease Dementia
- ❖ Pathology
- ❖ Treatment
- ❖ Living with Lewy Body Dementia

Lewy Body Dementia

- ❖ One of most common causes of dementia
- ❖ Superseded only by Alzheimer's disease and vascular dementia
- ❖ Accounts for 5-15% of dementia cases, may be up to 30%
 - ❖ Variable in different studies
- ❖ Often mixed with Alzheimer's Disease or Vascular Dementia on pathology

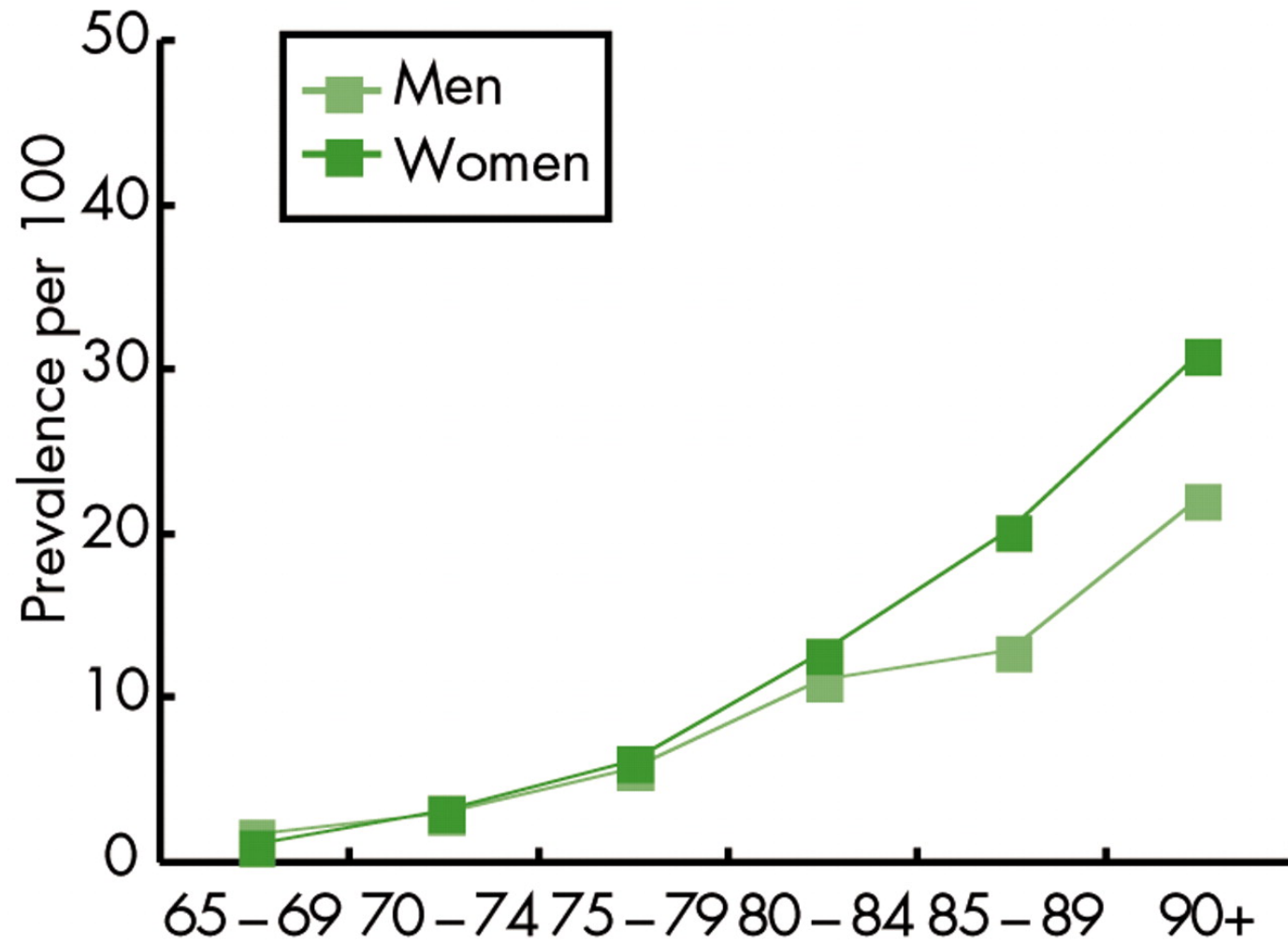
Prevalence of All Dementias

- ❖ The number of people in a population with the disease
- ❖ Prevalence of dementia more than doubles every 5 years after the age of 65

AGE	PREVALENCE	NUMBER IN CANADA 2013*
Over age 65	7.1%	402,000
65 - 69	<1%	
70 - 74	2%	
75 - 79	4%	
80 - 84	8%	
85 - 89	16%	
90+	32%	

CIHI, 2013-14

Pooled prevalence of dementia by sex.



W M van der Flier, and P Scheltens J Neurol Neurosurg Psychiatry 2005;76:v2-v7

Future Trends

- ❖ Dementia is a disease of aging
- ❖ Life expectancy is increasing, therefore, more people are living to the ages where risk of dementia is high
- ❖ So, number of people with dementia is rising

HOWEVER,

- ❖ Incidence may be declining

Incidence

- ❖ The number of new cases of a disease
- ❖ Shown in some studies to be decreasing

WHY?

? Less cardiovascular disease

? Better nutrition

? Higher education

? Less smoking

- ❖ FRAMINGHAM HEALTH STUDY
 - ❖ 5205 participants over age 60 followed since 1975
 - ❖ Later cohorts had less incidence of dementia than earlier cohorts (between 1980 and 2012)

Dementia with Lewy Bodies

- PARKINSON'S DISEASE DEMENTIA

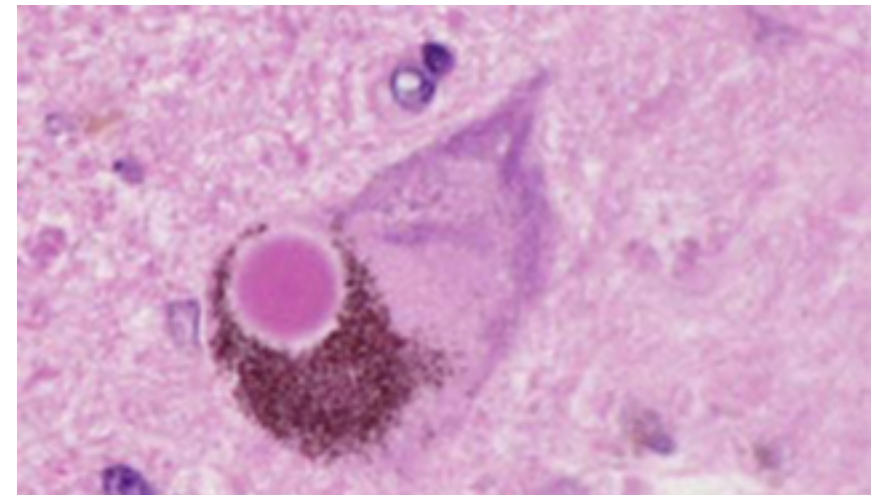
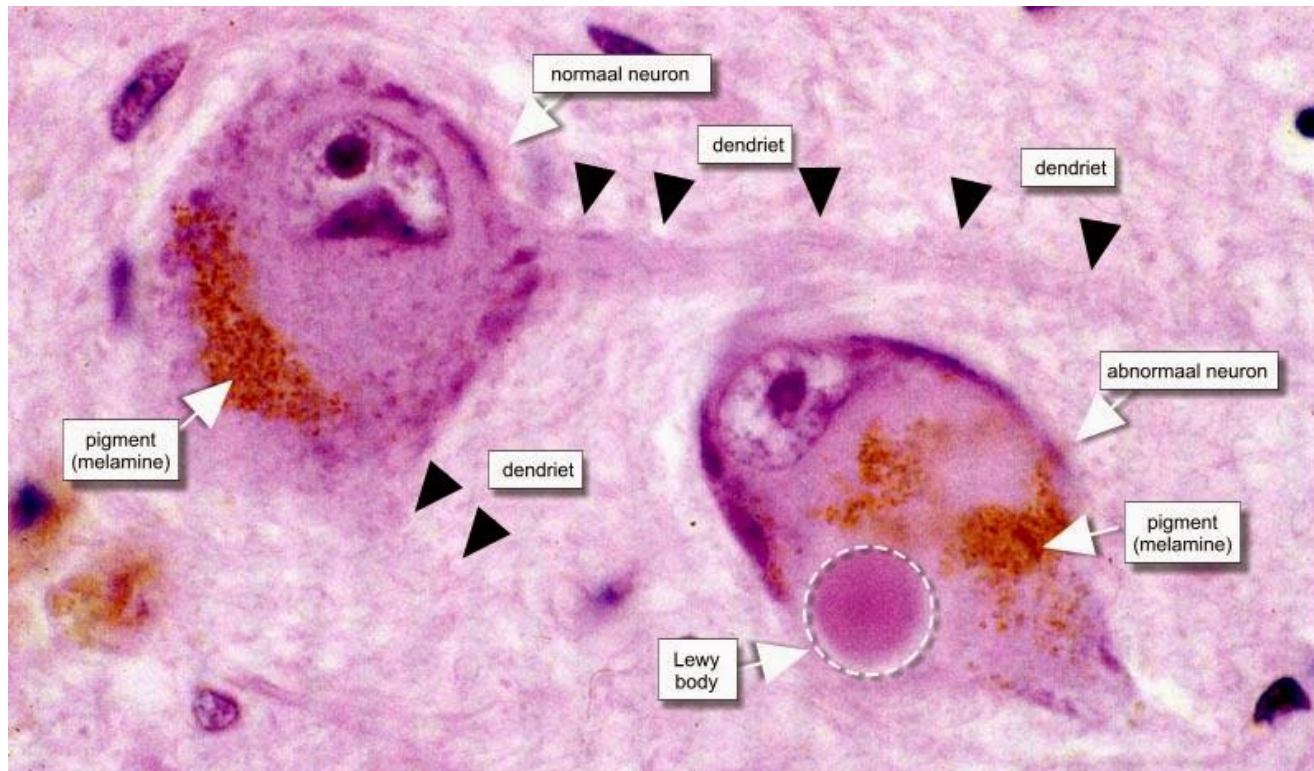
- ❖ Lewy bodies first accumulate in **brainstem** affecting motor function
- ❖ May spread to **cortex** much later in disease to affect cognition

- LEWY BODY DEMENTIA

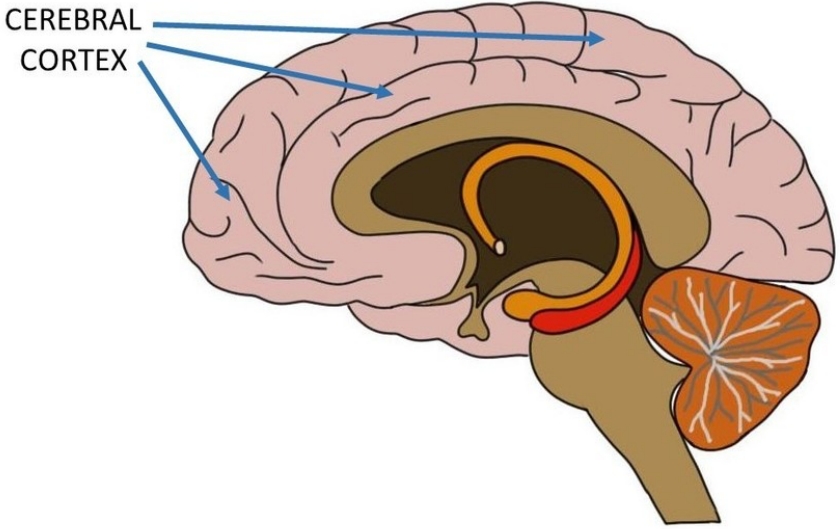
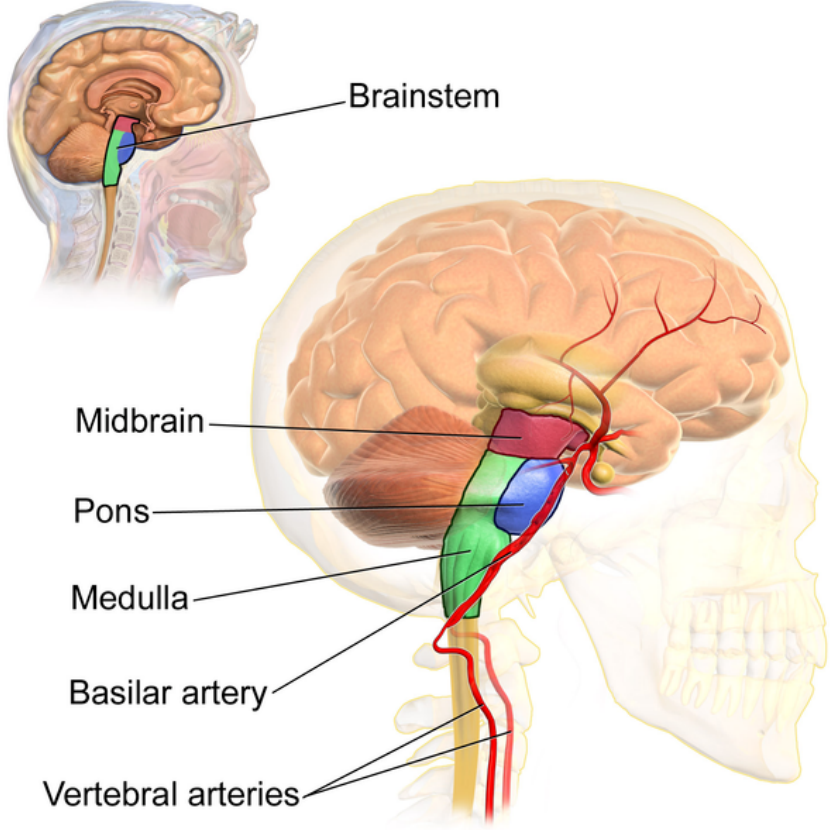
- ❖ Lewy bodies accumulate in both **brainstem and cortex** early in disease
- ❖ both motor symptoms and cognition are affected within the first year of symptoms

Lewy Bodies

Abnormal accumulation of alpha-synuclein in neural cells



Lewy Body Deposition



Risk Factors

- ❖ Mostly sporadic, late-onset disease
- ❖ Genetic factors play a role in up to 36% of cases
 - ❖ SNCA gene encoding the alpha-synuclein protein
 - ❖ APP* amyloid precursor protein gene
 - ❖ PSEN1/PSEN2* presenilin genes
 - ❖ APOE* gene
 - ❖ Same associated with Alzheimer's disease
 - ❖ MAPT gene - associated with FTD
- ❖ Only known acquired risk factor is traumatic brain injury with loss of consciousness

Patient Presentation

❖ Cognitive Impairment

PLUS

❖ Parkinsonism

❖ Hallucinations

❖ Fluctuations

❖ Sleep Disorder

Diagnosis

Diagnosis can be difficult.

Presentation is sometimes elusive:

- ❖ Cognitive impairment
- ❖ Parkinsonism +/- hallucinations +/- fluctuations +/- dream enactment behavior

Diagnosis

A. Meet criteria for dementia

B. Plus two of:

- Parkinsonism
- Repeated visual hallucinations
- Fluctuating changes in thinking, attention, or alertness
- REM Sleep Behavior Disorder

C. Supportive Features:

- Loss of smell
- Excessive Daytime Sleepiness

Diagnosis

Biomarkers:

1. Functional brain imaging showing reduction in perfusion and metabolism in occipital lobe
 - ❖ SPECT Sn65 Sp87
 - ❖ PET Sn90 Sp80
2. MIBG myocardial scintigraphy
 - ❖ Reduced sympathetic cardiac innervation
3. Formal Sleep Study
 - ❖ REM Sleep Behavior Disorder

Dementia

“Major Neurocognitive Disorder”

❖ When a person’s cognition changes such that it **affects** their ability to **independently** accomplish daily activities of living.

- Change from baseline
- At least one cognitive domain affected
- Need assistance to do daily activities
- Not due to other medical condition

Cognitive Domains Affected in Lewy Body Dementia

1. Memory
2. Language
3. Executive Function
4. Complex Attention
5. Visuospatial Capability
6. Social Cognition

Cognitive Domains

1. Memory – less affected in early stages of Lewy Body Dementia
 - Remember a few items on a shopping list
 - Recall details from a recent conversation
 - Remember a commitment
 - Remember a birthday or anniversary
 - Remember distant relatives' names
 - Ability to learn and retain new information
2. Language
3. Executive Function
4. Complex Attention
5. Visuospatial Capability
6. Social Cognition

Cognitive Domains

1. Memory
2. Language – less affected in early stages of LBD
 - Ability to use a specific word for a specific meaning
 - Naming objects
 - Ability to express one's opinion or emotions
3. Executive Function
4. Complex Attention
5. Visuospatial Capability
6. Social Cognition

Cognitive Domains

1. Memory

2. Language

3. Executive Function

4. Complex Attention

5. Visuospatial Capability

6. Social Cognition

Ability to plan and sequence

- Prepare a dinner party
- Plan a travel itinerary
- Renovate a home or move into a new home

Cognitive Domains

1. Memory
2. Language
3. Executive Function
4. Complex Attention
5. Visuospatial Capability
6. Social Cognition

Ability to maintain attention and shift attention

- Focus on one point among distractions
“*Selective attention*”
- Shift away from one focus onto another
“*Divided attention*”

Cognitive Domains

1. Memory
2. Language
3. Executive Function
4. Complex Attention

5. Visuospatial Capability

6. Social Cognition

Awareness of body position in space

- Wayfinding
- Being oriented to location in a building
- Driving

Cognitive Domains

1. Memory
 2. Language
 3. Executive Function
 4. Complex Attention
 5. Visuospatial Capability
-
6. Social Cognition
 - Awareness that others have a unique point of view different from own

Normal Changes in Aging

Delayed Retrieval

- ❖ Takes longer to retrieve previously learned information

Slower Processing

- ❖ Takes longer to process new information

Normal Changes in Aging

- ❖ Activities may take more time or effort
- ❖ Previous level of achievement or standard may change
- ❖ May accept help more often

Cognitive Changes in Aging

Normal if independent daily function is maintained.

Not normal if independent daily function is impaired and assistance is needed.

- ❖ Instrumental Activities of Daily Living
- ❖ Basic Activities of Daily Living

Diagnosis

A. Meet criteria for dementia

B. Plus two of:

- Parkinsonism
- Repeated visual hallucinations
- Fluctuating changes in thinking, attention, or alertness
- REM Sleep Behavior Disorder

C. Supportive Features:

- Loss of smell
- Excessive Daytime Sleepiness

Parkinsonism

Slow and stiff movements

Slow and soft speech

Postural instability and falls

Tremor at rest

Difficulty swallowing

Visual hallucinations

Formed

Complex and Detailed

People

Animals

Non-distressing in early disease, may have insight

May be distressing in later stages of disease

Fluctuations in attention and alertness

Variations are noticeable day to day

Periods of Drowsiness or non-responsiveness with
spontaneous recovery

Mistaken for

- seizures
- delirium
- medication adverse effect

REM Sleep Behavior Disorder

Absence of atony in REM sleep

Act out violent dreams

Walk in sleep

Wake up elsewhere

Can result in falls and injuries

Can be dangerous for bed partner

Treatment

Cholinesterase inhibitors – for cognition and hallucinations

Sinemet for parkinsonism

Melatonin for sleep disorder

Avoid anti-psychotics – worsen parkinsonism

Avoid sedatives – worsen cognition

Living with Lewy Body Dementia

Problem-solving

Fluctuations

Hallucinations

Sleep Disorder

Safety

- Driving
- Getting Lost

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- ❖ Prevalence of people living with dementia is rising
 - ❖ Incidence in high income countries may be decreasing
 - ❖ Lewy body dementia is expected to follow this trend

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Questions?

Thank you