Common types of dementia and their progression and treatment

FRASER HEALTH LONG TERM CARE ROUNDS

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DISCLOSURES

- I **DO NOT** have an affiliation (financial or otherwise) with any for-profit or not-for-profit organizations

LEARNING OBJECTIVES

1) Recognize and understand the progression of various types of common dementias
2) Be able to recognize and prognosticate in end-stage dementia
3) When to initiate and discontinue medications in dementia

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2) Be able to recognize and prognosticate in end-stage dementia
3) When to initiate and discontinue medications in dementia

Dementia generally requires a decline in function due to cognition

A decline from previous level of functioning interfering with ability to work or usual activities

Not explained by delirium or psychiatric disorder

Various subtypes: Alzheimer's, vascular, Lewy Body, frontotemporal dementia (FTD)

- Note that presentation and staging of FTD is significantly from other types of dementia

Generally, ADLs are lost in this order

Bathing and showering

Personal hygiene and grooming

Dressing

Toilet hygiene (getting to the toilet, cleaning, and getting back up)

Transferring

Feeding

Dementia staging: functional assessment tool (FAST)

Score	Functional impairment	Examples
1	None	
2	Subjective	Misplacing objects, subjective work difficulty
3	Impaired job functioning	Decreased job functioning objectively, difficulty organizing
4	IADL impairment	Decreased complex planning (finances, planning dinner parties)
5	Difficulty choosing clothes	Re-wearing clothes, dressing inappropriately for the season
6A 6B 6C 6D 6E	Improperly putting clothes on Inability to manage bath Inability to toilet Urinary incontinence Fecal incontinence	Needing assistance or cueing to put clothes on Choosing wrong water temperature, needing cues to bathe Wiping improperly, not flushing, not disposing of toilet paper
7A 7B 7C 7D 7E 7F	Limited speech Single intelligible word Cannot walk Cannot sit up Cannot smile Cannot hold head up	<6 words during a day or long conversation 1 word during a day or long conversation Can't walk without assistance Falls over without armrests

Alzheimer's: global deterioration scale (GDS)

Stages	Examples of functional impairment
1: normal	No problems
2: Subjective	Forgets names, misplaces objects, word-finding difficulties
3: MCI	Difficulty travelling to new locations, impaired performance at work
4: Mild	Difficulty with complex tasks (finances, shopping, planning dinner parties)
5: Moderate	Needs help choosing clothing, needs prompting to bathe
6: Moderately-severe	Loss of knowledge of recent events/experiences, needs assistance bathing, toileting difficulties, incontinence
7: severe	Limited vocabulary, loss of ability to walk or sit, needs feeding assistance

Alzheimer's dementia classically has preserved physical function

Classically: **gradually progressive** decline in short-term memory, word-finding difficulties, progressing to impair function

- May look quite **well physically** and may have preserved social graces (can appear normal to outsiders)

Progression

- Average progression through each stage of Alzheimer's is 2 years (influenced by many factors)
- Average decline in MMSE is 3-3.5 points per year

Mortality

- Average lifespan is 8-10 years from diagnosis, but variable depending on age/severity at diagnosis
- Death generally related to end-stage complications: dehydration, malnutrition, and infection

Larson et al, Ann Intern Med 2004. Clark et al, Arch Neurol 1999. Mitchell et al, NEJM 2009.

The journey of my “Alzheimer’s into LTC” patient

Year 1: Mild stage: Lived alone. No family involved. Presented well physically. No insight into cognitive decline. Church friend accompanied her to clinic. Scored poorly on MMSE but was still functioning to a certain extent. Not taking any medications. Friends were bringing her meals.

Year 2: Moderate stage: No insight and starting to refuse help. Not eating meals that were being brought to her. Starting to lose weight. Hygiene becoming impaired - not showering and wearing soiled clothes. Refusing home supports.

Year 3: Moderate-severe stage: Starting to become a little more unsteady but otherwise could still walk well. Found wandering in the middle of the night in Winter in a nightgown. Was “looking for her parents” who were long-deceased. Ended up admitted to RCH and then LTC from hospital due to significant safety concerns and inability to live alone.

What the stages of Alzheimer's might look like

Community stages (can still live independently or with home supports)

Mild stage: physically quite well, decline in short-term memory, generally able to manage ADLs but difficulty with IADLs, may develop paranoia (e.g. items being "stolen", stashing things away, hoarding things)

Moderate stage: some balance issues, needing help with more ADLs, increasing falls, may begin to develop more systemic or fixed delusions and BPSD behaviours, may have more wayfinding difficulties, more incontinence issues

What the stages of Alzheimer's might look like in LTC

LTC stages (where some may be unmanageable at home)

Moderate-severe stage: many falls, needing help with more ADLs, loss of continence, difficulties with toileting appropriately or inappropriate voiding, BPSD/hallucinations, more "sundowning", **wandering** (often living in the past and seeking "home")

Severe stage: more immobile, may have behavioural abnormalities and aggression and more exit-seeking, apathy, loss of empathy

Very severe: minimally verbal, difficulty with eating, tend to develop more negative symptoms (apathy)

Factors influencing the rate of decline

Age - older patients may decline slower than younger-onset dementia patients

Delirium matters in all patients, especially those with an underlying dementia

Neuropsych features may progress faster, including depression

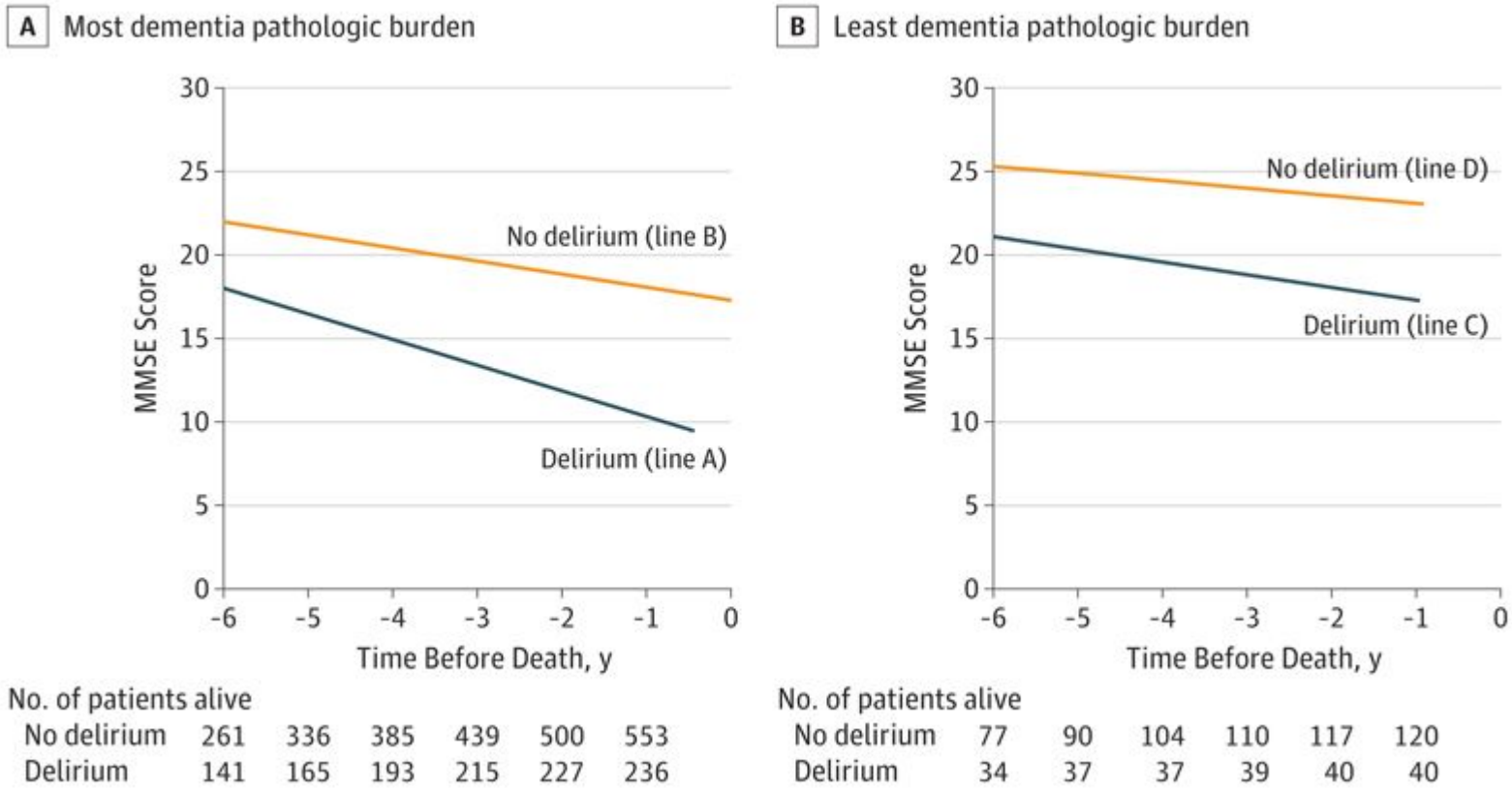
TBI can lead to more rapid progression when within 10 years of diagnosis of dementia

Bernick et al, Arch Neurol 2012. Peters et al, Am J Psychiatry 2015. Gilbert et al, Int Psychogeriatr 2014.

Delirium mediates decline in postmorten patients

Patients with delirium show a more rapid decline in their cognition, in particular those who have a higher postmortem dementia pathology

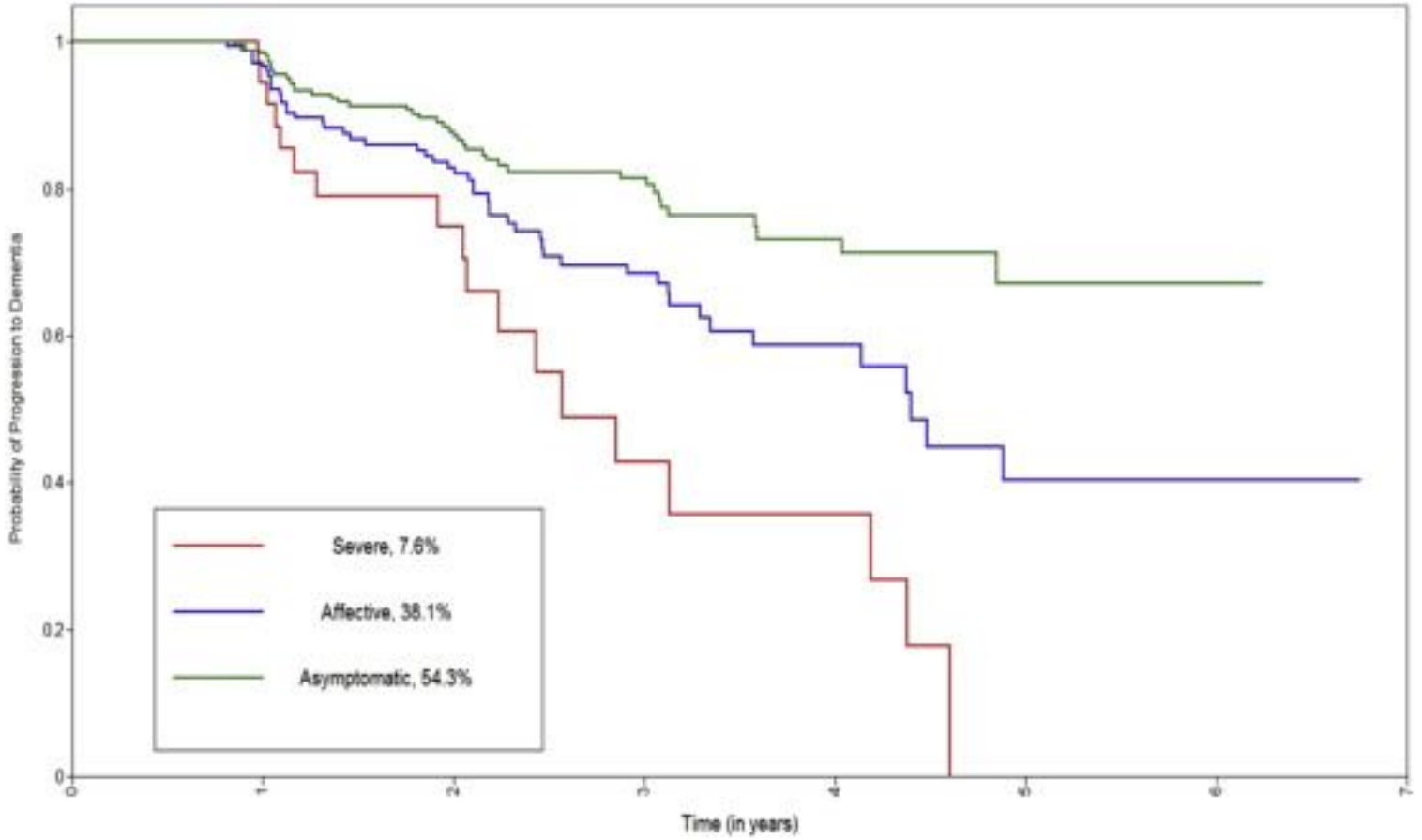
In other studies, the severity of delirium affects the rate of cognitive decline in patients even without dementia



Davis et al, JAMA Psychiatry 2017. Vasunilashorn et al, J Alzheimers Dis 2018.

Neuropsych features might be more likely to progress

Dementia is more likely to progress more rapidly if patients present with severe neuropsychiatric features (psychosis, agitation/aggression) or affective features (depression, anxiety, irritability)



Peters et al, Am J Psychiatry 2015.

Supportive treatment involves:

Delirium prevention

Social engagement

Reassurance and redirection/distraction

May require medications for aggressive/agitated BPSD behaviours

Little benefit for medications for wandering or calling out

Vascular dementia

Generally a slow and stepwise decline, can be associated with neurologic dysfunction

- Primarily related to strokes or silent ischemia (chronic small vessel ischemia)
- Progression can be variable
- Mortality is variable

Common to have executive impairment (including apathy) and depression earlier on

- Tend to be slow, impaired short-term memory, can have earlier urinary incontinence
- May have neurologic deficits depending on the area of the stroke

Goal is to prevent further strokes

The journey of my “Vascular dementia into LTC” patient

Year 1: Mild stage: Lived in independent living. Supported by daughter who visited frequently. Significant chronic small vessel ischemia. Starting to have issues taking medications. Apathy and no motivation to participate in exercise or LTC facilities. Starting to have mild deconditioning.

Year 3: Mild-Moderate stage: Medications now administered by facility. Continued to decline gradually physically and cognitively. Still no motivation to participate in spite of much encouragement. Starting to care less about hygiene and not showering often. Falling frequently.

Year 3: Moderate stage: Continued to decline physically to the point where she fell and fractured a hip. Not able to re-mobilize and gain mobility to return home. Went to LTC.

What the stages of vascular dementia might look like in the community or LTC

LTC or community stages (depending on degree of physical dysfunction)

Mild stage: generally slowed or physically impaired, decline in short-term memory, generally able to manage ADLs but difficulty with IADLs, minor continence issues, more **apathy** and disinterest, harder to motivate, bradyphrenia (long processing time)

Moderate stage: needing more help with some ADLs, increasing falls, more incontinence issues, wayfinding issues or paranoia issues, delusions

Moderate-severe stage: needing help with more ADLs, loss of continence, difficulties with toileting appropriately or inappropriate voiding, wandering, BPSD/hallucinations

Severe stage: more immobile, may have behavioural abnormalities and aggression, extreme apathy

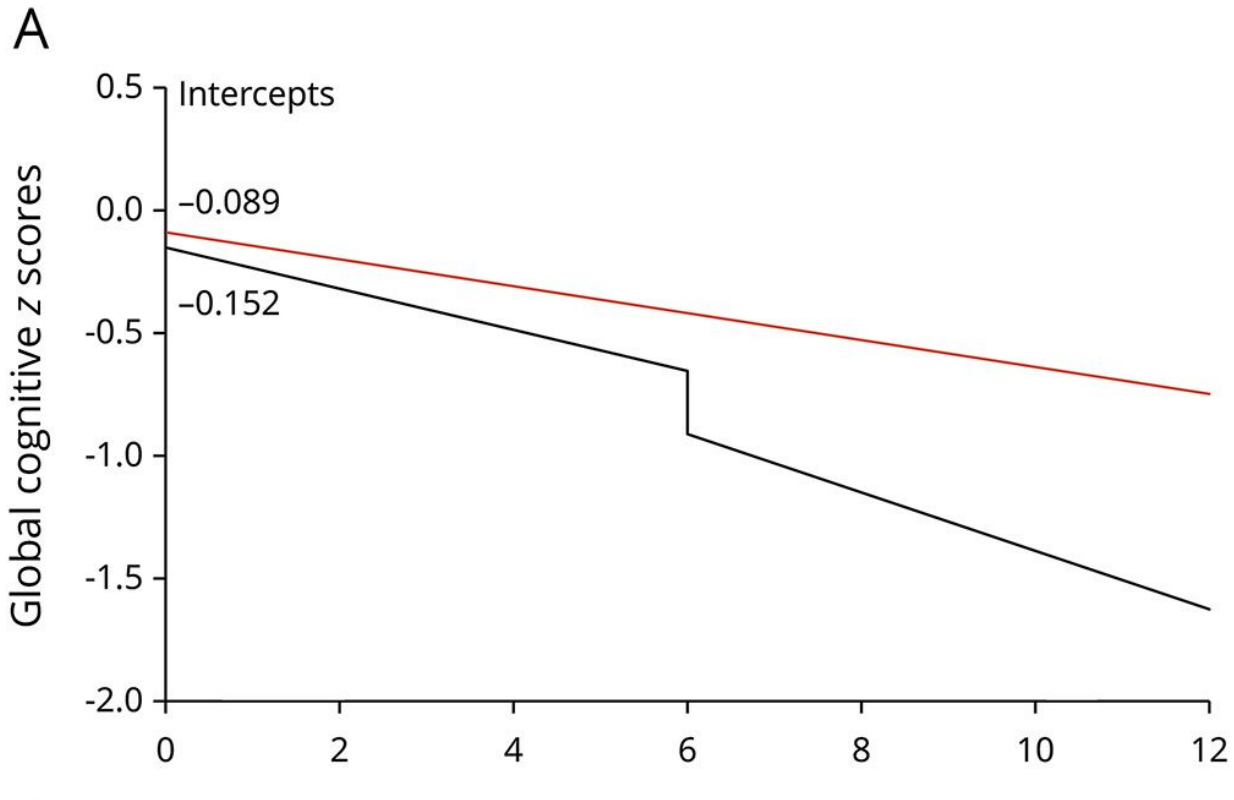
Very severe: minimally verbal, difficulty with eating, tend to develop more negative symptoms (apathy)

Cognitive decline may precede stroke, which can accelerate cognitive decline

There is some evidence of accelerated cognitive decline pre stroke and then further acceleration before stroke

Red line is control group (non-stroke patients). Year 6 is when patients had their stroke.

Vascular dementia can show as a gradual decline as well



Zheng et al, Neurology 2019.

Supportive treatment involves:

Stroke prevention - treatment of atrial fibrillation, hypertension (to a permissible level), consider treatment for cholesterol and DM2

Increase encouragement to mobilize as best as possible

May require medications for aggressive/agitated BPSD behaviours

Little benefit for medications for wandering or calling out

Lewy Body Dementia

Key features - visual hallucinations, fluctuations, REM sleep behaviour disorder (RBD), Parkinsonism

- May also have neuroleptic sensitivity, falls, syncope, autonomic dysfunction, delusions, depression

Faster rate of cognitive decline (~6 points in MMSE per year) than Alzheimer's

8 year survival rate on average

Parkinson's disease dementia typically is for patients who develop Parkinsonism for years beforehand and then develop cognitive decline - in LBD, Parkinsonism (when present) and cognitive decline occur within a year of each other

Olichney et al, Neurology 1998. Williams et al, Neurology 2006.

The journey of my “lewy body dementia into LTC” patient

Year 1: Mild stage: Lived with wife. Had Parkinsonism. Some short-term memory decline. Mild hallucinations, minimal. Mobility improved with Sinemet. Cognitively improved with donepezil but developed weight loss and nausea. Donepezil stopped.

Year 2: Moderate stage: Worsening hallucinations that are more bothersome. Decided to stop a number of medications including Sinemet. Mobility significantly declined. Needing help with all IADLs and help with some ADLs. In mornings, generally good aside from mobility, but in evenings sundowning and paranoia and hallucinations.

Year 3: Moderate-severe stage: Hallucinations very severe and significant and lasting all day. Very fearful affect with hallucinations and losing insight. Difficult for family to redirect. Refusing to sleep in bed due to seeing a family sleeping there. No benefit from quetiapine. Rivastigmine patch helped. Mobility very poor due to Parkinsonism. Getting home supports and awaiting LTC.

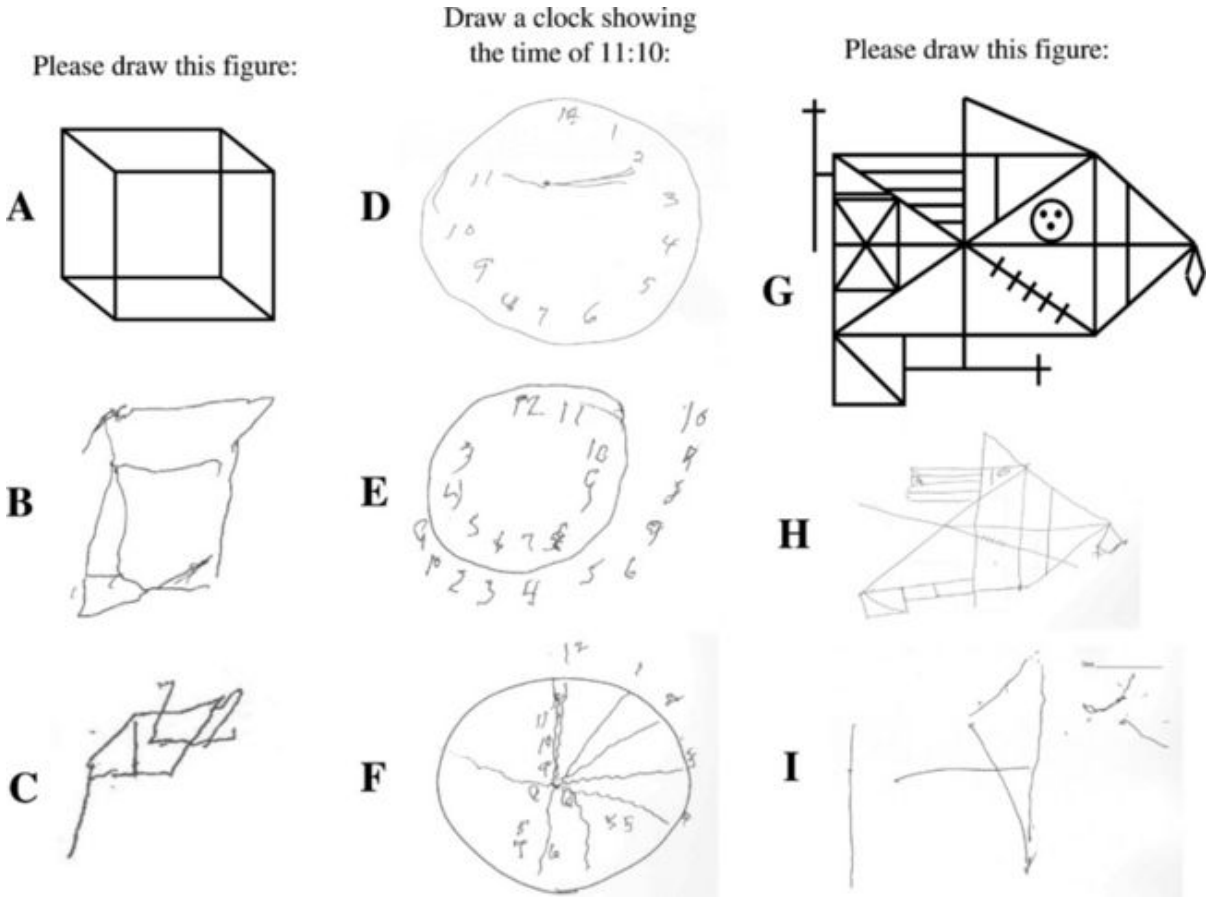
What the stages of lewy body dementia might look like in the community

Community level

Mild stage: short-term memory loss, **fluctuations** (ranging from normal to very impaired), Parkinsonism, difficulties with visuospatial/**wayfinding**, **hallucinations**, depression, balance problems

Tend to have visuospatial issues early on (e.g. can have wayfinding issues earlier, difficulty on copying a cube/pentagons)

Can be relatively preserved in other domains except for short-term memory



What the stages of lewy body dementia might look like in LTC

LTC stages

Moderate stage: needing help with some ADLs (esp dressing apraxia), more falls, wandering and getting lost easily, delusions/paranoia, loss of insight into hallucinations especially in evenings

Moderate-severe stage: more fearful/bothersome hallucinations, needing help with more ADLs, loss of continence, difficulties with toileting appropriately or inappropriate voiding, wandering, BPSD, disorientation within home, more issues with vivid dreams and distinguishing reality

Severe stage: more immobile, may have behavioural abnormalities and aggression, extreme apathy, difficulty eating

Very severe: minimally verbal, difficulty with eating, tend to develop more negative symptoms (apathy)

Supportive care for core Lewy Body features

Fluctuations can be very dramatic (e.g. ranging from decreased LOC with difficulty rousing to almost normal within an hour, peri-syncopal events, hyperactive delirium))

Visual hallucinations tend to be vivid (e.g. well-formed animals, people). If fearful, consider low dose quetiapine to remove negative affect but cautious for EPS. Consider antidepressants if otherwise.

REM sleep behaviour disorder may be present for years beforehand - can be treated with higher dose melatonin (typically up to 10mg) or low dose clonazepam (e.g. 0.25mg)

Note: LBD tends to respond well to cholinesterase inhibitors



Parkinson’s Disease Dementia

Key features - longstanding history of Parkinson’s, executive dysfunction, visuospatial dysfunction, often hallucinations

Parkinson’s disease dementia typically is for patients who develop Parkinsonism for years beforehand and then develop cognitive decline - in LBD, Parkinsonism (when present) and cognitive decline occur within a year of each other

Olichney et al, Neurology 1998. Williams et al, Neurology 2006.

What the stages of Parkinson's disease dementia might look like in community or LTC

LTC stage (depends on their mobility from Parkinson's)

Mild stage: visuospatial/wayfinding difficulties, executive and planning difficulties, short-term memory loss, Parkinson's, can have some dressing apraxia

Moderate stage: hallucinations, incontinence issues, needing more help with ADLs and more dressing apraxia, may have issues with inappropriate voiding and wandering

Moderate-severe stage: more inappropriate voiding, wandering risks, BPSD behaviours

Severe stage: more immobile, may have behavioural abnormalities and aggression, extreme apathy, difficulty eating

Very severe: minimally verbal, difficulty with eating, tend to develop more negative symptoms (apathy)

Consider re-evaluating Parkinson's medications regimen in Parkinson's disease dementia

Some of the anticholinergic medications for Parkinson's disease can affect their cognition, and optimization of medications can be helpful

In general, Sinemet is the safest agent from a cognitive perspective. May benefit from evaluation of mobility vs cognitive concerns in Parkinson's disease dementia

Frontotemporal dementia (behavioural variant)

Tends to be fairly young (50s-60s). Physically very wel.

Starts more as personality changes, behavioural changes - disinhibition, loss of empathy, compulsive behaviours, hyperorality, dysexecutive function (gambling, aggression), apathy

- Other subtypes also present as loss of speech/language early or motor symptoms early
- Short-term memory intact initially; impairments develop as disease progresses

Negative symptoms (apathy, loss of empathy) increase during course of disease and positive symptoms (disinhibition, hyperorality, perservation) tend to decline in later disease

Survival is approximately 8-10 years from time of diagnosis - behavioural variant tends to be most rapid

Cosseddu et al, Eur J Neurol 2020. Mioshi et al, Neurology 2010. Hodges et al, Neurology 2003.

The journey of my “frontotemporal dementia approaching LTC” patient

Year 1: Mild stage: Not able to help with shared business between spouse anymore. Much more apathy. Not interested in IADLs anymore.

Year 3: Moderate stage: Needing help with ADLs now. More impulsive and distractible. More odd behaviours - saying hello to everyone and introducing spouse to everyone seen on walks.

Year 5: Severe stage: Needs 24/7 supervision. Physically extremely well and very mobile. Complete incontinence of bowel and bladder with no insight. No awareness of need to wear clothes. Echolalia, stimulus bound (reading sentences repeatedly if seen on a poster on the wall). Extremely restless - walking over 25000 steps per day. Unable to tolerate numerous therapies as cannot stop from walking. Tried on numerous medications for this which have been intolerable. Currently at home with 24/7 private supervision with an extremely dedicated spouse.

What the stages frontotemporal dementia might look like in community

Community stage

"Mild" stage: personality changes, loss of empathy, addictive behaviours, gambling, trouble managing finances or getting in trouble at work (or getting fired), apathy/disinterest, developing a "sweet tooth"

- Generally preserved short-term memory
- May score well on cognitive testing, though frontal tests may be difficult (such as frontal assessment battery)

"Moderate" stage: needing help with some ADLs, short-term memory impairment, can develop language problems (semantic or nonfluent), more pronounced behavioural issues, eating too much and weight gain, hypersexuality, restless

*Note : staging in FTD is very different and is not as agreed upon

What the stages of frontotemporal dementia might look like in LTC

LTC stage

"Severe" stage: needing 24/7 supervision due to safety concerns, eating inappropriately, bowel/bladder incontinence, significant language and short-term memory issues, very restless/uncooperative, echolalia, stimulus-bound, very impulsive, restlessness

"Very severe": minimally verbal, difficulty with eating, tend to develop more negative symptoms (apathy)

*Note : staging in FTD is very different and is not as agreed upon

Supportive treatment for Frontotemporal dementia behaviours

Behaviours can be quite difficult to manage.

Hypersexuality - avoid drugs like dopamine and benzodiazepines which can cause disinhibition. SSRIs as first line, then consider antipsychotics, gabapentin, antiandrogens or beta blockers

Disinhibition - divalproex can be helpful

Restlessness - paroxetine initial try. Risperidone or aripiprazole can be helpful as well

Aggression/agitation - SSRIs or antipsychotics

Overview of types of dementia

	Typical Age of Onset	Associated features	Median prognosis	Progression
Alzheimer's	70-80s	Physically well	8-10 years	Gradual
Vascular	65+	Neurologic findings, slow	Variable	Stepwise or gradual
LBD	70-80s	Parkinsonism, visual hallucinations, fluctuations, RBD	6-8 years	Fairly rapid
PDD	10-20 years after onset of PD	Parkinson's, visuospatial issues, executive issues	6-8 years	Fairly rapid
FTD	50s-60s	Physically well, behavioural abnormalities (may have language deficits, motor deficits)	8-10 years	Short-term memory often preserved initially

Clinical pearls

All dementias will progress in severity over time develop increasing dependence on ADLs; significant overlap can exist in later stages of disease

Alzheimer's: delirium prevention

Vascular: risk factor modification

Lewy Body: supportive care of hallucinations

Parkinson's: may need to review medications

Frontotemporal dementia: supportive care of behaviours if not manageable with environment changes

LEARNING OBJECTIVES

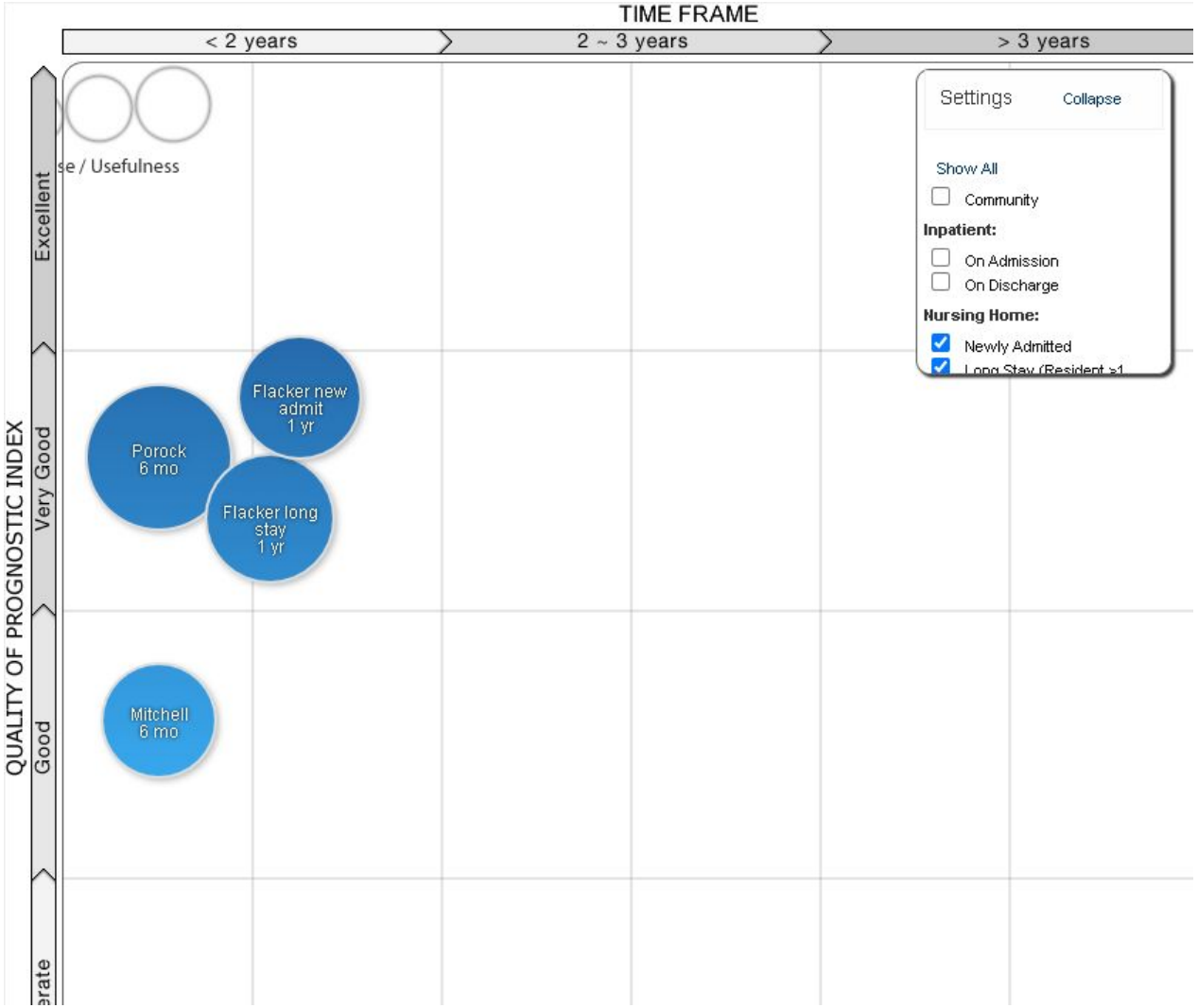
1) Understand the progression of various types of common dementias
2) Be able to recognize and prognosticate in end-stage dementia
3) When to initiate and discontinue medications in dementia

Tools exist to help predict overall prognosis in LTC

https://eprognosis.ucsf.edu/bubbleview.php

Filter by nursing home (calculators are either for newly admitted or patients who have been there for over a year)

Note that these are only tools and are imperfect - use this with a grain of salt and your own clinical gestalt



Some calculators are for advanced dementia patients

However, this accurately predicts approximately 67% of the time

(Further info on the bottom of the page)



Mitchell Index

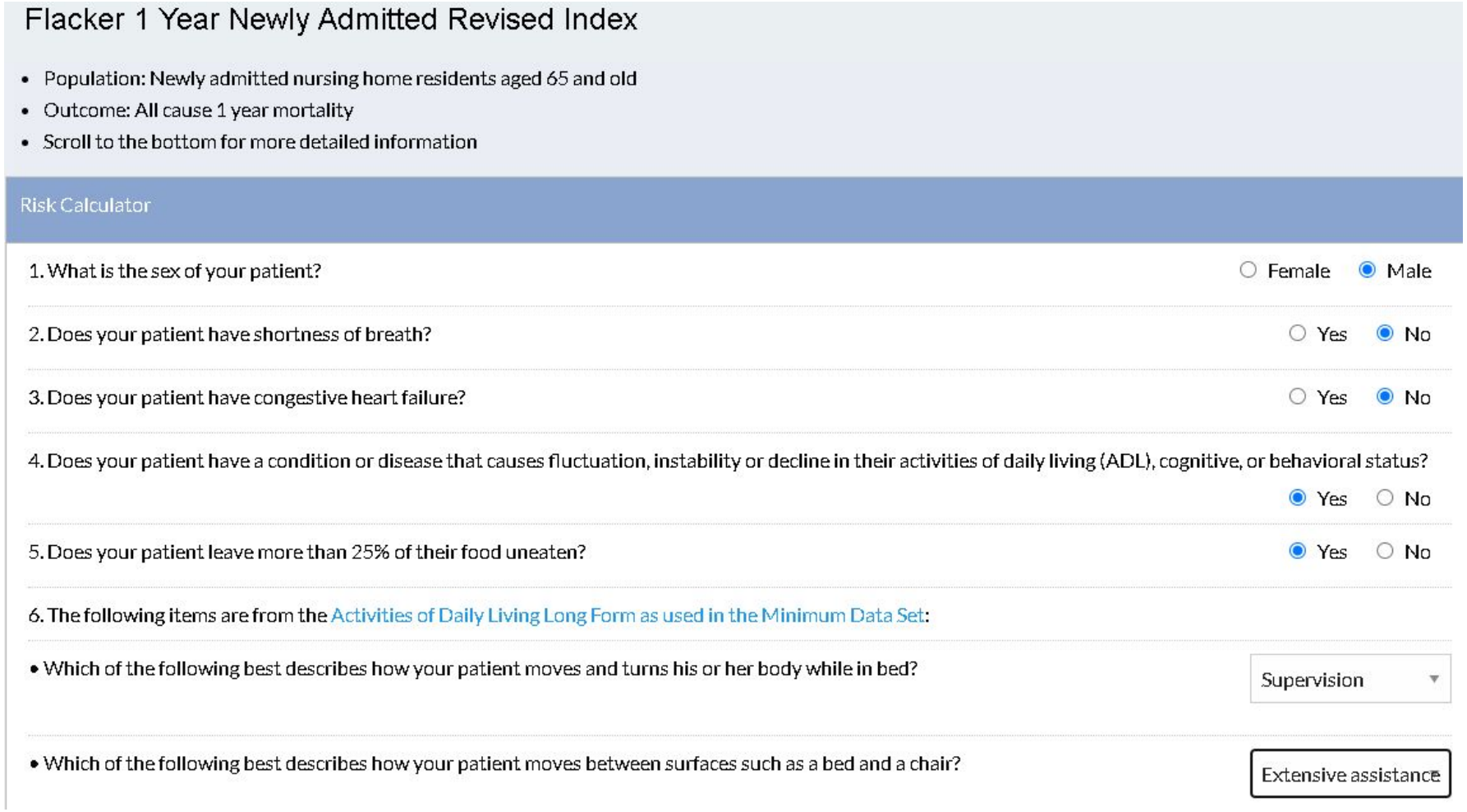
- Population: Nursing home adults aged 65 and older
- Outcome: 6 month survival
- Scroll to the bottom for more detailed information

Risk Calculator

1. Has your patient been admitted to the nursing home in the past 90 days?	(●) Yes ( ) No
2. How old is your patient?	75 - 79
3. What is the sex of your patient?	( ) Male (●) Female
4. Does your patient have shortness of breath?	( ) Yes (●) No
5. Does your patient have at least one pressure ulcer that is greater than or equal to Stage 2?	( ) Yes (●) No
6. Is your patient totally dependent for all Activities of Daily Living, including bed mobility and eating?	(●) Yes ( ) No
7. Is your patient bedbound most of the day?	(●) Yes ( ) No
8. Does your patient have insufficient oral intake? (Defined as not consuming almost all liquids in previous 3 days or at least 25% of food uneaten at most meals)	( ) Yes (●) No

Other calculators are not specific to dementia

Not specifically for dementia patients, but can assist in other ways



Flacker 1 Year Newly Admitted Revised Index

- Population: Newly admitted nursing home residents aged 65 and old
- Outcome: All cause 1 year mortality
- Scroll to the bottom for more detailed information

Risk Calculator

1. What is the sex of your patient? ○ Female ◉ Male
2. Does your patient have shortness of breath? ○ Yes ◉ No
3. Does your patient have congestive heart failure? ○ Yes ◉ No
4. Does your patient have a condition or disease that causes fluctuation, instability or decline in their activities of daily living (ADL), cognitive, or behavioral status? ◉ Yes ○ No
5. Does your patient leave more than 25% of their food uneaten? ◉ Yes ○ No
6. The following items are from the Activities of Daily Living Long Form as used in the Minimum Data Set:
   - Which of the following best describes how your patient moves and turns his or her body while in bed? Supervision
   - Which of the following best describes how your patient moves between surfaces such as a bed and a chair? Extensive assistance

End-stage dementia for Alzheimer's in LTC is heralded by 3 features

Median survival approximately 16 months for advanced dementia patients in nursing home – 55% died within 18 months, 6 month survival was 25%

Common complications towards end of life

- ~50% 6-month mortality in severe dementia with: eating problems (weight loss, reduced oral intake, dysphagia) 39%, febrile episodes 47%, pneumonia 47%
- In last 3 months of life – eating problems (86%), febrile episode 32%, PNA 37%
- Other sentinel events rarely precipitated death within 3 months (seizure, GIB, hip fracture, other fracture, stroke, PE, MI, other)

Common symptoms towards end of life - dyspnea, pain, ulcers, agitation, aspiration

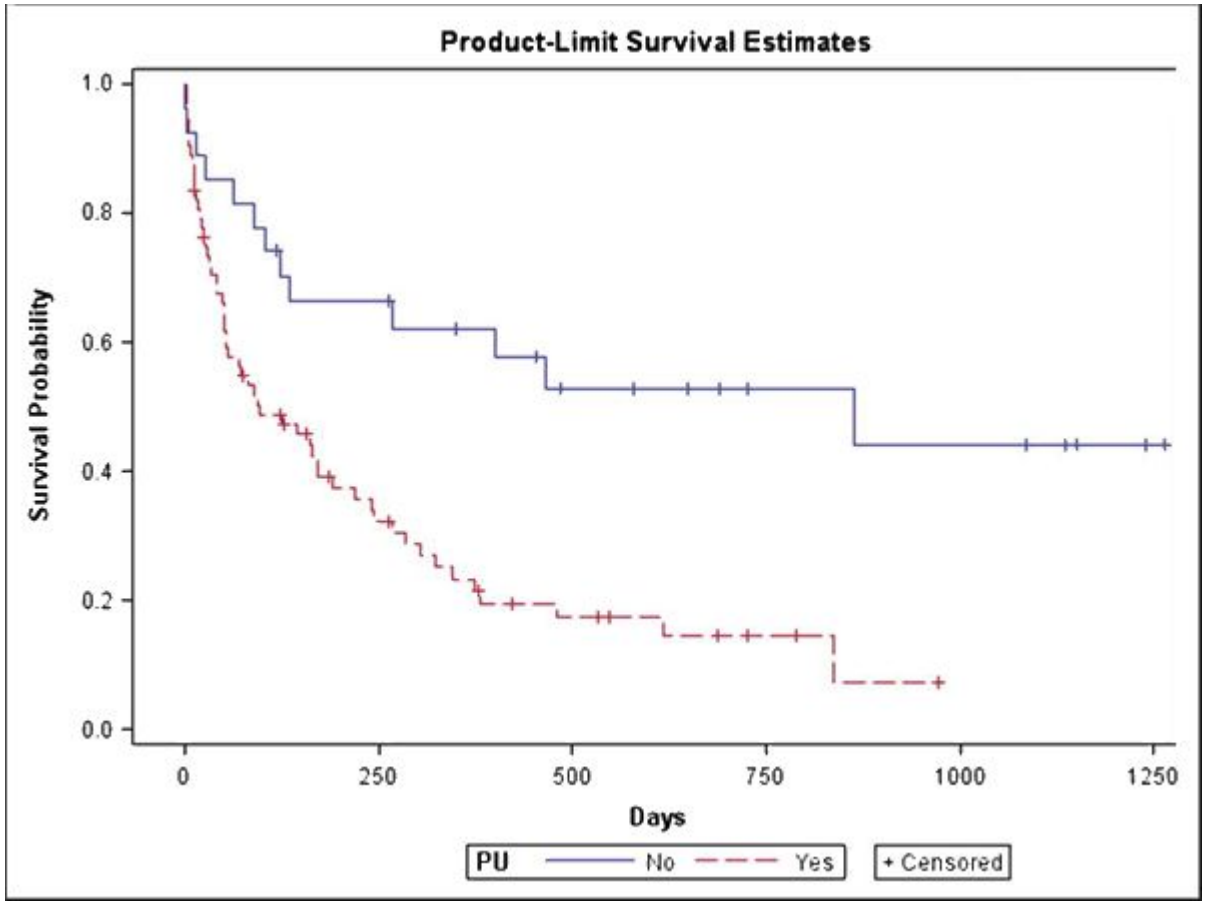
Mitchell et al, NEJM 2009.

Pressure ulcers portend poor prognosis in advanced dementia

Pressure ulcers common in advanced dementia (2/3 had pressure ulcers in this study)

Presence of ulcers in inpatient hospital associated with mortality

Median survival 3 months vs >2 years with and without ulcers



Jaul, Meiron, and Menczel, Exp Aging Res 2016.

Some of the finer points about decision-making in dementia patients

Feeding situations

Infections

Intensive care unit admissions

PEG tubes in general do not help with mortality in dementia

Cochrane review 2009 – not enough data to support usage of PEG tubes

- Mortality – no difference
- Aspiration – higher in one study
- Unclear things: decreasing albumin, more restraints, better nutrition

Systematic review in 2015

- Mortality – no difference
- Aspiration risk – similar

Jaul, Meiron, and Menczel, Exp Aging Res 2016. Brooke and Ojo, Nutrients 2015.

Overall complications of feeding tubes are numerous

Procedural issues

- Periprocedural mortality – 6-28%
- Mortality in first year – 64% (median survival 56 days)
- Repositioning/replacing – 20%

Other

- Erosion of tube, bleeding of nose/esophagus, bronchopleural or tracheoesophageal fistula, pneumothorax, perforation of esophagus/duodenum, agitation, requirement for suctioning

End-of-life concerns

- Caregivers less likely to report excellent end-of-life care for deceased tube-fed patients

Other

- Associated with more restraints in some studies
- Increased pressure sores in some studies (but not in others)

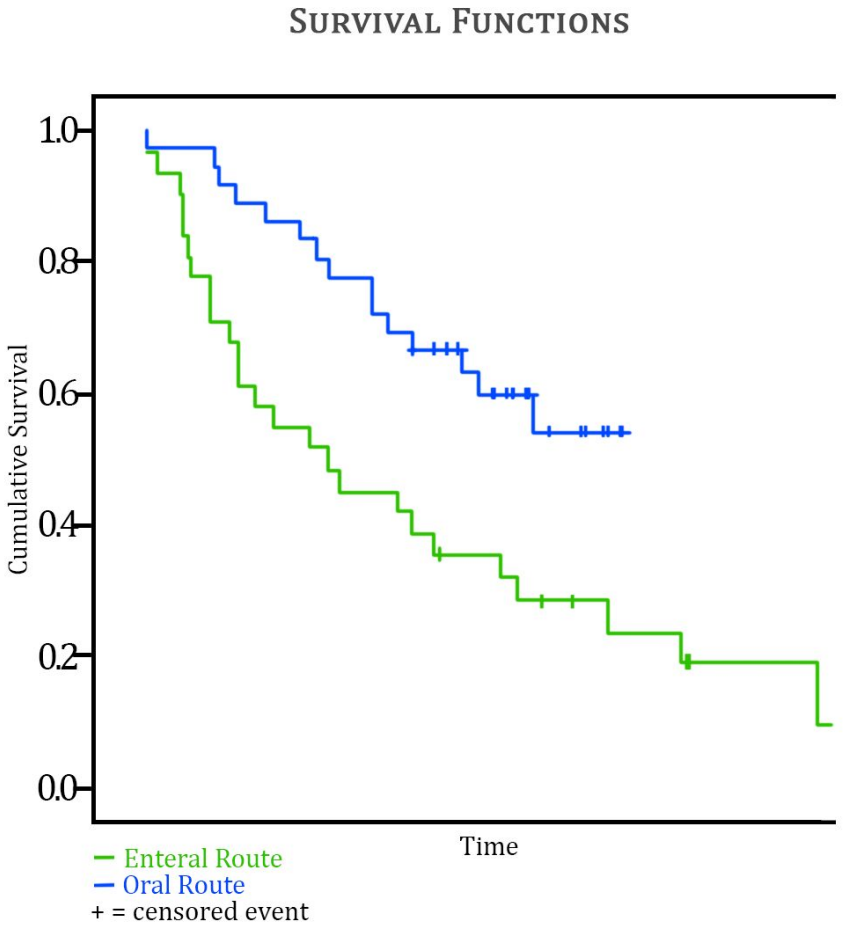
Merel, DeMers, and Vig, Clin Geriatr Med 2014.

Advanced dementia with dysphagia may do worse with feeding tubes

Advanced dementia patients with dysphagia: compared those who had feeding tubes versus those without

- Increased 3-month mortality (42% vs 11%) with feeding tubes
- Increased 6-month mortality (58% vs 28%) with feeding tubes

More aspiration, sepsis, mortality



Cintra et al, J Nutr Health Aging 2014.

A guide to feeding tube discussions with families

Step 1: Clarify clinical situation (e.g. stage of dementia - eating problems common in end-stage dementia, last ADL to be lost)

Step 2: Determine primary goal of care (life prolongation versus maintaining function versus comfort)

Step 3: Present options (Supportive care versus feeding tube)

- Hand feeding lets them enjoy food, suboptimal nutrition in favor of comfort
- Tube feeding DOES NOT: prevent aspiration, heal pressure ulcers, improve survival or promote comfort
- Tube feeding does have risks associated

Step 4: Weigh options and align with goals of care (comfort measures = hand feeding)

Step 5: Offer decision support in the form of material and videos to help make decision (Alzheimer's society, NICE, AGS)

Most patients do not experience hunger or thirst without nutrition or IV fluids

IV fluids are associated with more edema

In end-of-life patients able to communicate, most did not experience hunger or thirst despite poor intake (cancer patients, non-demented)

In end-of-life patients with advanced dementia, discomfort in those without artificial hydration tends to decrease over time

In hospice patients with cancer, biochemical dehydration did not correlate to sensation of thirst or dry mouth (non-demented)

- These sensations can be alleviated by good oral care

Pasman et al, Arch Intern Med 2005. Fine, Nutr Clin Pract 2006. Ellershaw, Sutcliffe, and Saunders, J Pain Symptom Manage 1995. McCann, Hall, and Groth-Junker, JAMA 1994.

Treating pneumonia in end-stage dementia aggressively decreases comfort

Overall, treating PNA improves survival but not comfort, and can decrease comfort the more aggressive the care is

- Antibiotic therapy associated with lower mortality for any route of administration (increased survival time approximately 9 months)

No survival difference between routes of administration

For those who survived 90 days:

- Greater comfort scores for those without antibiotics
- Greater comfort scores for those with less aggressive care (IV significantly associated with lower comfort scores)

Givens et al, Arch Intern Med 2010.

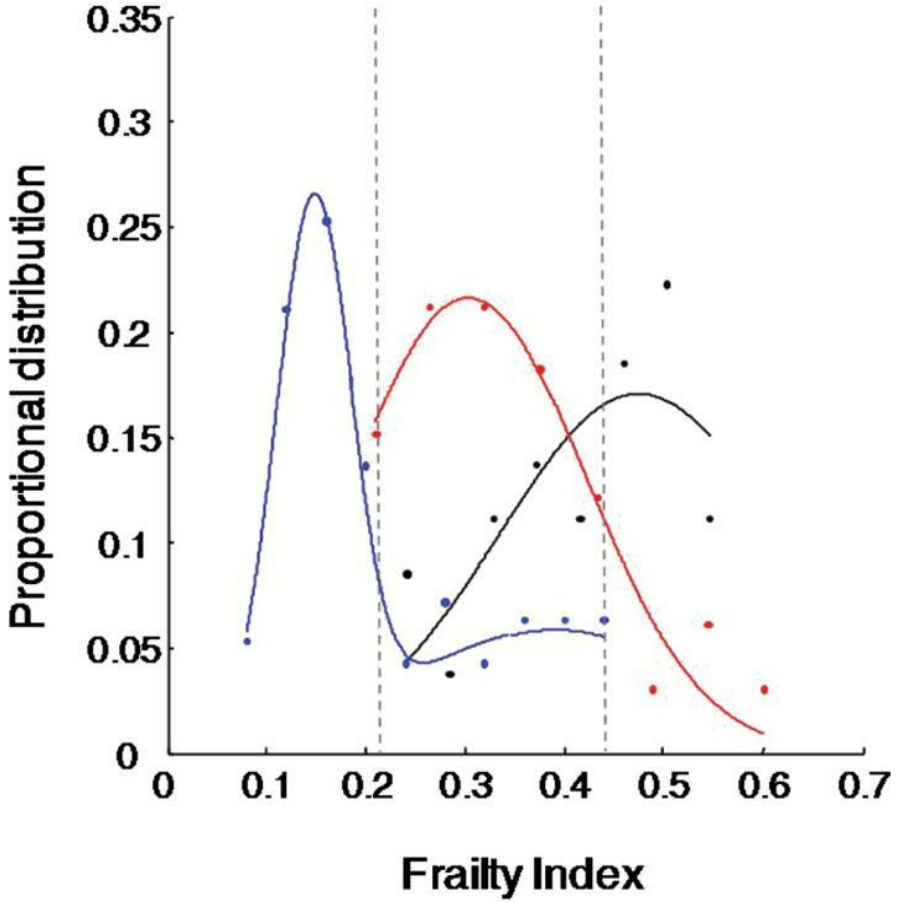
Frailty index predicts poor outcomes in ICU patients

Older adults >65 admitted to geri ICU in China

No one with a FI score >0.46 survived past 90 days (needing help with ADLs)

- Each 1% increase in the FI from the previous level was associated with an 11% increase in the 30-day mortality risk

All patients FI <0.22 survived 30 days



Zeng et al, J Gerontol 2015.

Quality of end-of-life care in LTC depends on previous expressed wishes

Quality of dying better for those who were competent to make their own decisions

- Similar quality of dying regardless of baseline goals

More family satisfaction with

- Previously expressed wishes available from patient
- Early baseline comfort care goal in those with length of stay less than 6 months
  - But not for those who lived longer than 6 months (e.g. for those with a worse prognosis, identifying this early is important)
  - Important to identify prognosis early

van Soest-Poortvliet et al, Palliat Med 2015.

Pain can be undertreated in end of life dementia patients in LTC

Consider a patient's pain history and other medical conditions that can lead to pain in dementia (arthritis, peripheral neuropathy, strokes)

Longitudinal study in dementia – pain, dyspnea, and agitation increase as dementia progresses (especially pain)

Nursing home studies suggest undertreatment of pain conditions

Dementia patients with cancer are more likely to get opioids in hospice compared to nursing homes

- Less likely to get opioids as cognitive impairment becomes more severe

Hospice patients with dementia get adequate pain control (similar to cancer patients and better than COPD patients)

Hendriks et al, JAMDA 2015. Liu and Leung, Pain Med 2016. Monroe et al, Geriatr Gerontol Int 2013. Romem et al, Palliat Med 2015.

Clinical pearls

In severe dementia, eating problems, febrile episodes, and lower respiratory tract infections often signal end-of-life dementia

Median survival approximately 16 months for advanced dementia patients in nursing home – 55% died within 18 months, 6 month survival 25%

Goals of care should be addressed early and prognostication should be done early

LEARNING OBJECTIVES

1) Understand the progression of various types of common dementias
2) Be able to recognize and prognosticate in end-stage dementia
3) When to initiate and discontinue medications in dementia

TREATMENT: nonpharmacologic

First link - a resource for caregivers (through the Alzheimer's society, for all types of dementias)

Nonpharmacologic - exercise, social stimulation, mental stimulation

Medication review - try to reduce anticholinergic burden (antispasmodics, TCAs, trazodone), reduce benzos

Pharmacotherapy - cholinesterase inhibitors (donepezil, rivastigmine, galantamine), NMDA receptor antagonists (memantine)

Cholinesterase inhibitors

Cholinesterase inhibitors are indicated throughout the spectrum of dementia, from mild to severe

- Benefits tend to be more in mild-moderate: slow down cognitive decline, neuropsychiatric symptoms, ADL function
- Most beneficial in Lewy body dementia > Alzheimer's > Vascular

Goal is to slow down cognitive decline and prolong function

Side effects of cholinesterase inhibitors

Side effects to consider:

- Bradycardia and syncope (always get a screening ECG), GI side effects (appetite loss, weight loss, diarrhea, nausea), urinary frequency, vivid dreams, myalgias
- Consider discontinuation of cholinesterase inhibitors if these side effects are severe

Contraindications:

- Anaphylaxis, heart block
- Relative: asthma

Start at a low dose (donepezil 2.5 mg PO daily) and uptitrate monthly to a max dose of 10mg or whatever is best tolerated

- Typically given in daytime, as nighttime can cause vivid dreams

Rivastigmine patch is an option (if extended health benefits) for GI side effects - may also work better in lewy body dementia

Cholinesterase inhibitors are beneficial in Lewy Body Dementia

Significant improvement in cognition, behavioural disturbances, and ADL function in meta-analyses

- Most patients with LBD should be tried on cholinesterase inhibitors (unless they have contraindications)
- But side effects requiring discontinuation - adverse events, nausea, tremor

Matsunaga et al, Int J Neuropsychopharmacol 2015.

Cholinesterase inhibitors for Alzheimer's improve symptoms

A large meta-analysis and meta-regression study of clinical trials (n=16106) showed improvement in cognitive function, global symptomatology, and global function - but also significant discontinuations for side effects.

Interestingly, a slight mortality benefit was suggested though has not been found in other trials

Blanco-Silvente et al, Int J Neuropsychopharmacol 2017.

In vascular dementia, cholinesterase inhibitors can be helpful for cognition

Some benefit in metaanalysis for cholinesterase inhibitors for vascular dementia, though limited and mixed evidence. Likely not as beneficial as other types of dementia

- May be worthwhile to give a try if no concern about side effects

Chen et al, Eur Neurol 2016.

Memantine seems to have little benefit in dementia patients

Initial studies showed improvement in cognition and function with moderate-severe dementia (no benefit in mild-moderate)

However, further studies showing combined cholinesterase inhibitors with memantine showed no significant benefit of memantine in preventing LTC admissions

It may be helpful in behavioural disturbances, but is not covered by Pharmacare at present

Howard et al, Lancet Neurol 2015. Thencharoen et al, Drugs Aging 2019.

Discontinuing cholinesterase inhibitors may worsen behaviours

There is no true consensus about when to discontinue cholinesterase inhibitors, aside from relating to side effects

Some patients showed a worsening of behavioural and cognitive functions when discontinued in meta-analyses.

Specifically in LTC patients, a retrospective analysis showed worsening behaviours and less time spent in leisure activities after discontinuation.

Renn et al, Am J Geriatr Psychiatry 2018. O'Regan et al, J Clin Psychiatry 2015. Daiello et al, Am J Geriatr Pharmacother 2009.

Frontotemporal dementia is treated symptomatically only

Cholinesterase inhibitors can worsen behaviours in FTD and do not provide benefit, given the different pathology

Treatment should be focused on supportive care including SSRIs

What kind of medications might help otherwise?

In general, risperidone is evidenced for agitation and aggression in dementia. 0.125 mg PO daily is a low starting dose and can reasonably go up to 0.250 mg PO BID (but not in Parkinson's disease dementia or LBD with neuroleptic sensitivity)

Quetiapine has less EPS side effects but is more sedating

Trazodone is also an option with little EPS effect

Clinical pearls

Patients with lewy body dementia and alzheimer's dementia (possibly vascular dementia but not FTD) may benefit from cholinesterase inhibitors

- Always screen with an ECG prior to initiation

Side effects that can occur include: weight loss, diarrhea, urinary frequency (it may be reasonable to trial off of these medicines to see if there is improvement off of the cholinesterase inhibitor). For severe BPSD, consider stopping them as well.

There is no true consensus on discontinuing cholinesterase inhibitors - can have a sudden decline in function. In general, may be reasonable to continue unless any side effects exist, patient is end-of-life, or having dysphagia and needing to reduce pill burden.

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Key points

Delirium can cause a more rapid cognitive decline and should be treated early

Eating problems, febrile episodes, and lower respiratory tract infections can herald ~50% 6 month mortality (end-stage dementia) in patients with severe dementia

Consider discontinuing cholinesterase inhibitors in people who are developing weight loss, bothersome urinary frequency or diarrhea, and worsening aggressive/agitated BPSD

Thank you!

Questions? Comments?