Dementia

Dr Craig Patrick

ST6 Old Age Psychiatry

Outline

- Definitions
- Subtypes
  - Features
  - Investigations
  - Management
- Behavioural and psychological symptoms of dementia (BPSD)
- Approach to dementia care

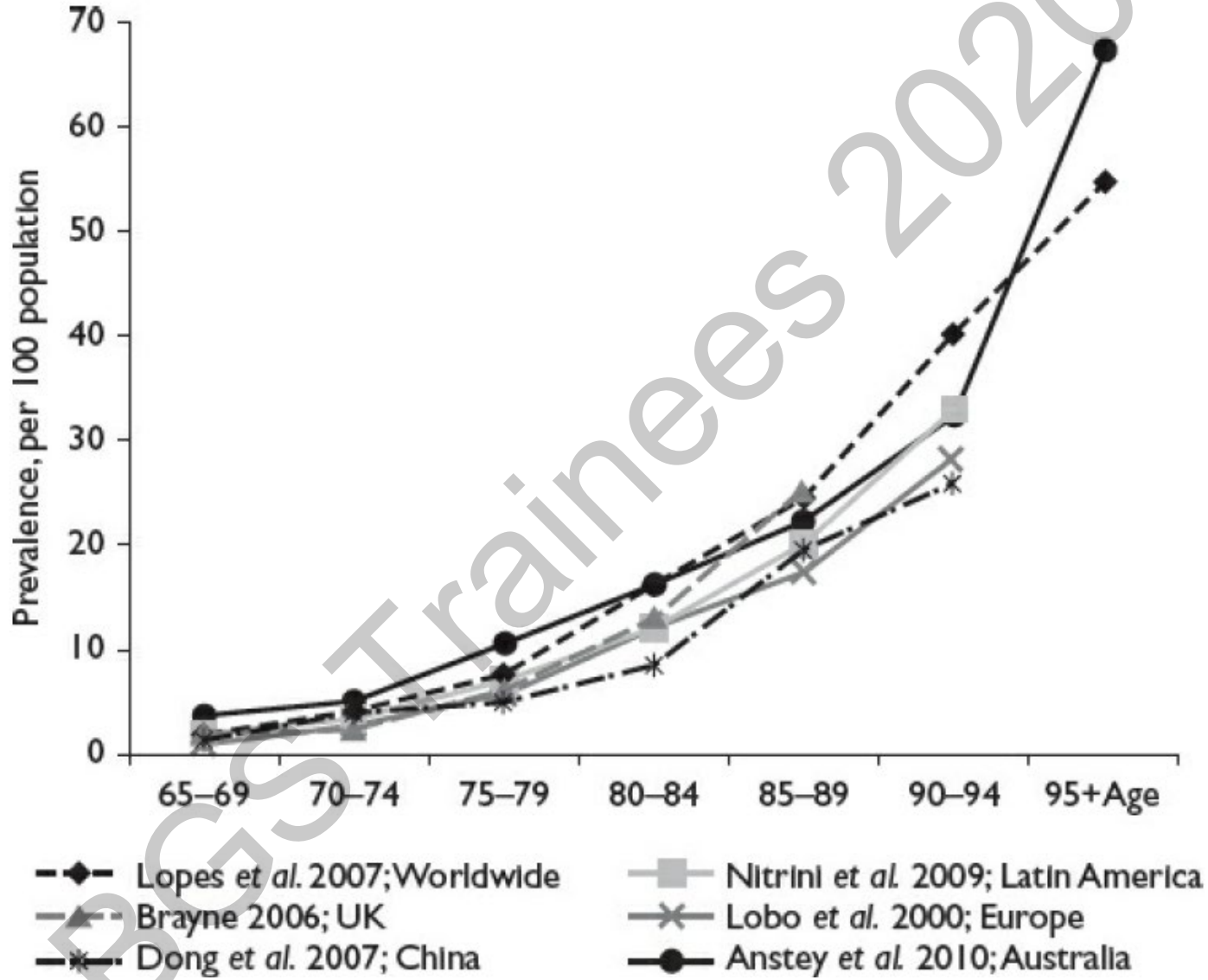
Dementia

1. **Decline in cognitive ± behavioural symptoms**
2. **Interfere with ADLs / social / occupation**

- Chronic, progressive decline from previous level of functioning
- No clouding of consciousness
- Not explained by delirium or other medical/psychiatric disorder
- Minimum 6 months' duration

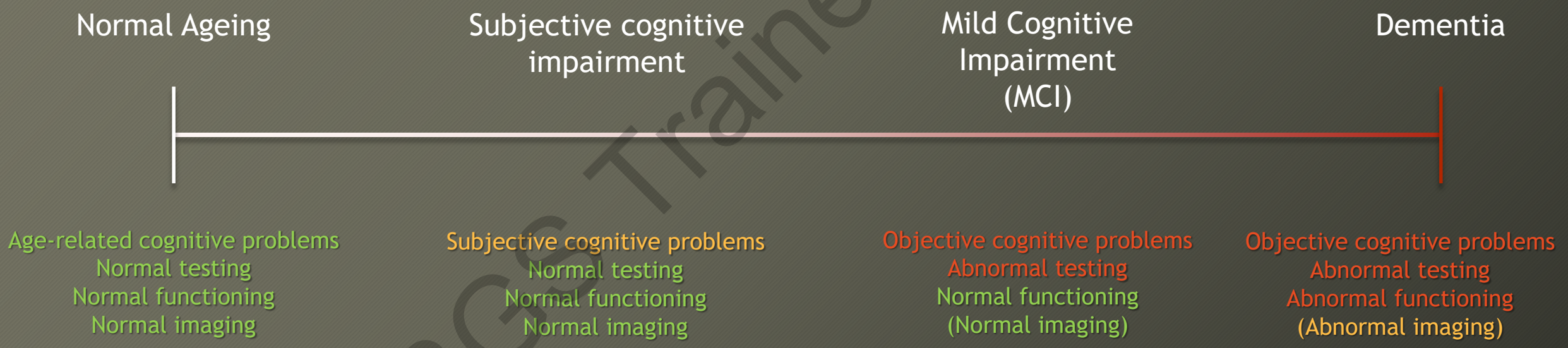
Dementia

- Memory
- Executive functioning
- Personality / Behaviour
- Language
- Visuospatial



Source: *Jorm, A.F. and Jolley, D. (1998). The incidence of dementia: a meta-analysis. Neurology,* ***51****, 728–33.*

Cognitive Impairment



Subtypes

- Alzheimer's (AD)
- Vascular (VD)
- Dementia with Lewy Bodies (DLB) / Parkinson's Disease (PDD)
- Frontotemporal (FTD)
- Other considerations

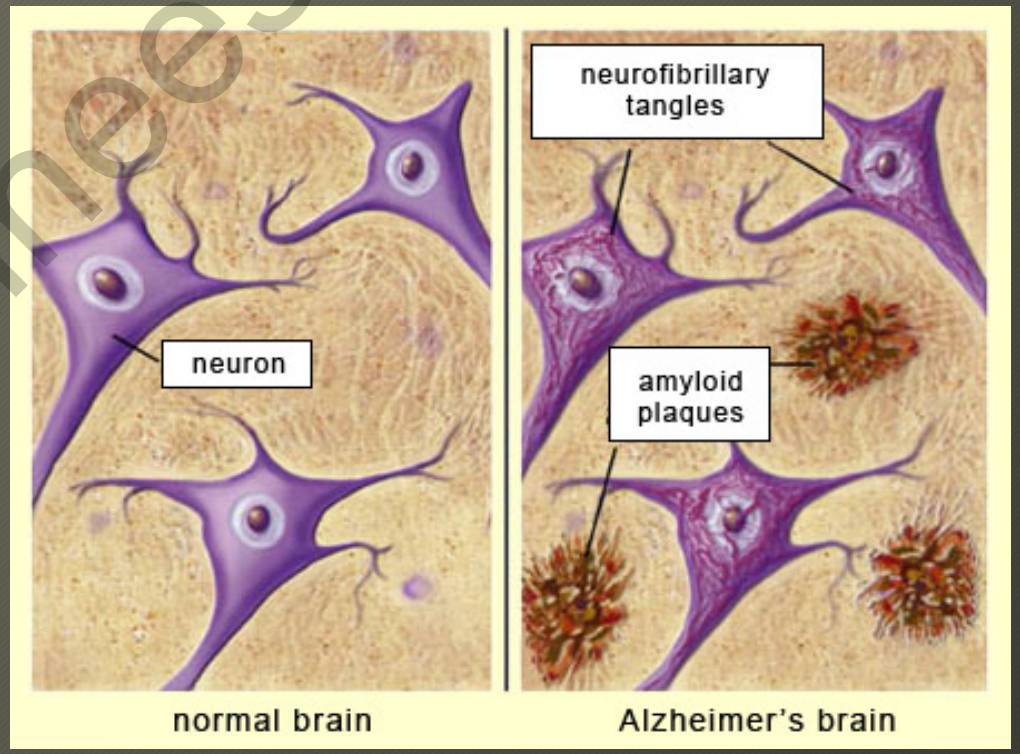
Alzheimer's Disease

- Insidious, gradual onset and progression
- Predominance of memory impairment (STM worse than LTM)
  - Registration
- Word-finding difficulties
- Disorientation for time / location
- Wandering, irritability

- Onset between 40-90 years old
  - Early onset (<65 years old) – greater genetic role esp. < 55 years

Alzheimer's Disease

- Pathology
  - Amyloid plaques
  - Neurofibrillary tangles
- Medial temporal lobe (memory)
- Acetylcholine loss
  - Basal forebrain nuclei pathology



Source: https://www.brightfocus.org/alzheimers-disease/infographic/amyloid-plaques-and-neurofibrillary-tangles

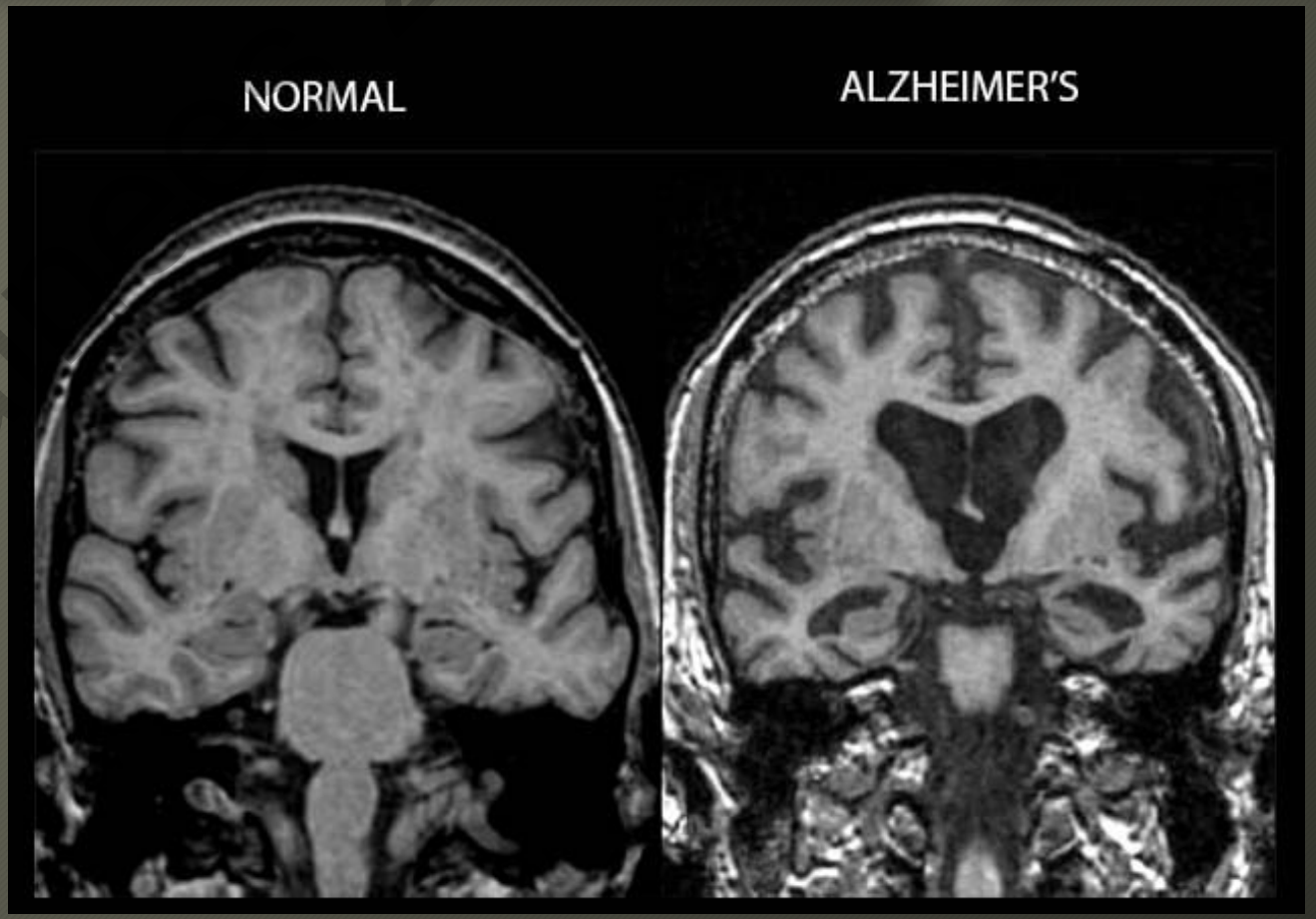
Alzheimer's Disease

- Risk factors
  - Vascular - smoking (x2-4 increased risk), HTN, CAD, obesity
  - Cognitive reserve – low educational achievement, mental/physical inactivity
  - Head injury
  - Depression
  - Down's syndrome (including family history of such) – APP gene (CR21)
  - Genetic esp. APOE4

- Poorer prognostic factors
  - Age < 65 years old
  - Male
  - Apathy / depression

Alzheimer's Disease

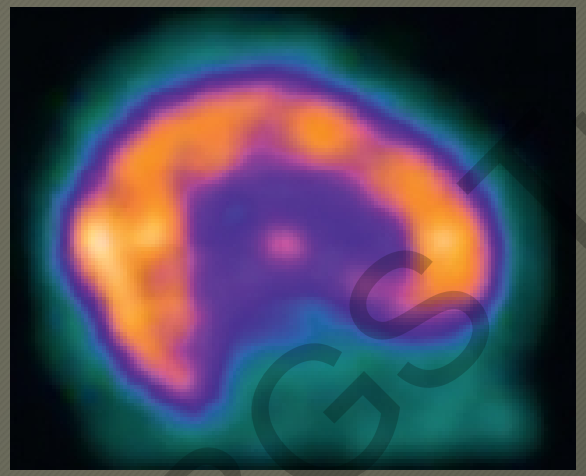
- CT / MRI head
  - Hippocampal / medial temporal lobe atrophy
  - Generalised atrophy



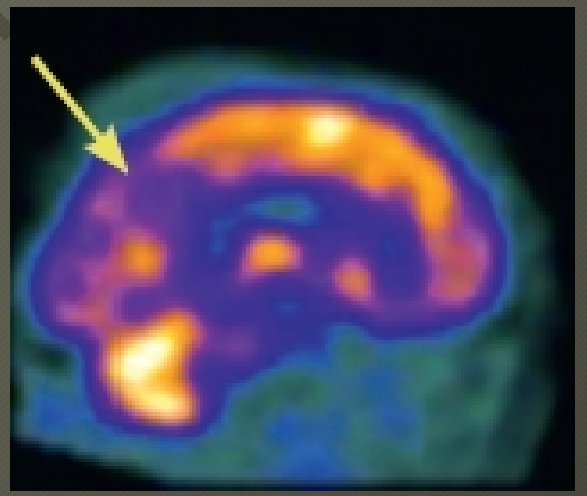
Source: https://www.hopkinsmedicine.org/research/advancements-in-research/fundamentals/in-depth/we-need-to-talk-about-alzheimers-disease

Alzheimer's Disease

- HMPAO SPECT (blood flow)
  - Decreased perfusion of temporal/parietal lobes (occasional frontal)



Normal



Hypoperfusion of temporoparietal lobe

Source: https://www.progressnp.com/article/neuroimaging-dementia-update-general-clinician/

Alzheimer's Disease

- Medication

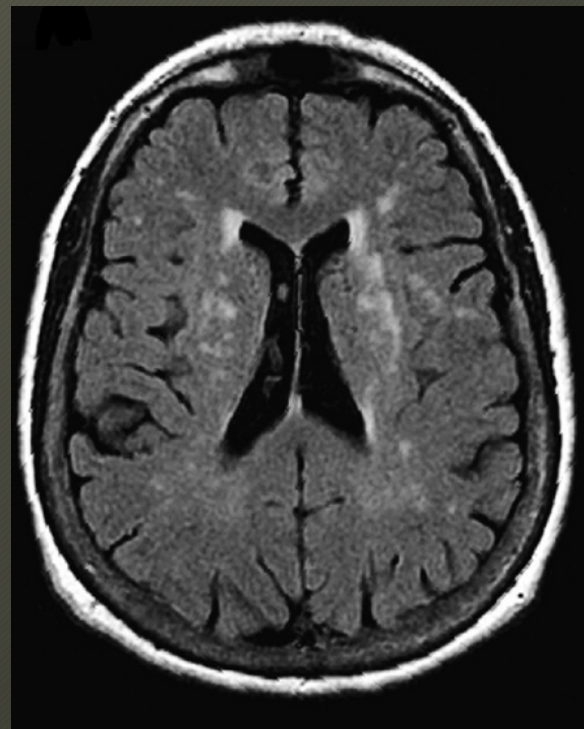
Mechanism	Medication	Side-effects
Acetylcholinesterase inhibitor (increases **acetylcholine**)	Donepezil Rivastigmine (patch) Galantamine	GI upset (less so with patch) Bradycardia Anxiety Sleep disturbance
NMDA receptor antagonist (reduces **glutamate** excitotoxicity)	Memantine	Constipation Can lower seizure threshold

Vascular Dementia

- Often mixed Alzheimer's / Vascular dementia
- Variable features – depends on underlying pathology
- Focal neurological symptoms/signs, poor balance, falls, stroke history
- Can be abrupt and step-wise change
- Subcortical ischaemic changes – can be gradual decline, affective symptoms (e.g. depression, emotional lability)

Vascular Dementia

- Imaging
  - ‘Significant’ evidence of cerebrovascular disease on CT/MRI
  - Extensive (>25% white mater volume) likely to produce clinical syndrome
- CT/MRI
  - MRI preferred but CT most often used
  - MRI – better at identifying lacunar infarcts/microhaemorrhages
- PET/SPECT (rarely used)
  - Non-specific areas of hypometabolism/hypoperfusion
  - Consider if diagnosis in doubt, to rule out other dementia types



Source: Gouw AA, Seewann A, van der Flier WM, *et al*. Heterogeneity of small vessel disease: a systematic review of MRI and histopathology correlations. *Journal of Neurology, Neurosurgery & Psychiatry* 2011;**82:**126-135.

Vascular Dementia

- Treatment
  - No cognitive enhancers specifically licenced
    - Treat mixed Alzheimer's/vascular with cognitive enhancers
  - Risk factor reduction – smoking, cholesterol, diabetes, BP etc.
  - Management of above risk factors
  - Carotid artery patency in some patients

Dementia with Lewy Bodies

- Pathology – Lewy bodies → neuronal cell degeneration
- Age of onset typically 50-80 years old
- Parkinson's disease dementia (PDD)
  - Dementia in a patient with established Parkinson's disease
- Parkinson's dementia or Lewy body dementia?
  - "1 year rule" – if cognitive symptoms develop before or within one year of Parkinson's symptoms → DLB

Dementia with Lewy Bodies

- Core symptoms

1. Visual hallucinations – well formed, passage hallucination, presence

2. Parkinsonism (eventually in 85% of patients)
   - Axial signs – stooped posture, slow gait, postural instability rather than tremor
   - Limited response to dopamine medications (e.g. levodopa)

3. Fluctuating cognitive levels – delirium-like, 'zoning-out'

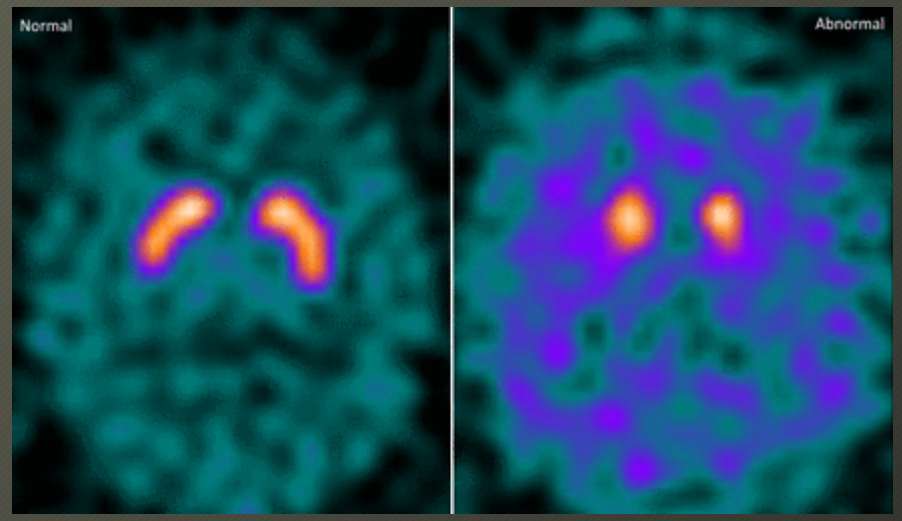
4. REM sleep disorder – acting out dreams, kicking, punching, shouting, vivid dreams

Dementia with Lewy Bodies

- Supportive features
  - Autonomic dysfunction – sweating, GU/GI upset, orthostatic hypotension
  - Neuroleptic sensitivity (destruction of dopaminergic pathways)
    - Can develop severe EPSE (**avoid haloperidol!**)
  - Delusions – usually later, paranoia

Dementia with Lewy Bodies

- Imaging
  - CT/MRI – sparing of MTL, structurally often normal
  - DaTSCAN – radioactive tracer, reduced putamen uptake



Source: Clinical Imaging in Dementia with Lewy Bodies - https://ebmh.bmj.com/content/21/2/61

Dementia with Lewy Bodies

- Management
  - Acetylcholinesterase inhibitors e.g. rivastigmine/donepezil
    - Useful for cognition, psychosis, apathy
  - Depression/apathy – consider SSRIs/mirtazapine, avoid anticholinergics
  - Antipsychotics (if severe behavioural disturbance, hallucinations)
    - Atypicals esp. quetiapine
  - REM sleep disorder – consider clonazepam at night, melatonin, AChEI/memantine

Frontotemporal Dementia

- Frontotemporal lobe atrophy
- Onset usually 45-65 years
- Can be associated with MND signs
- Family history in 50%

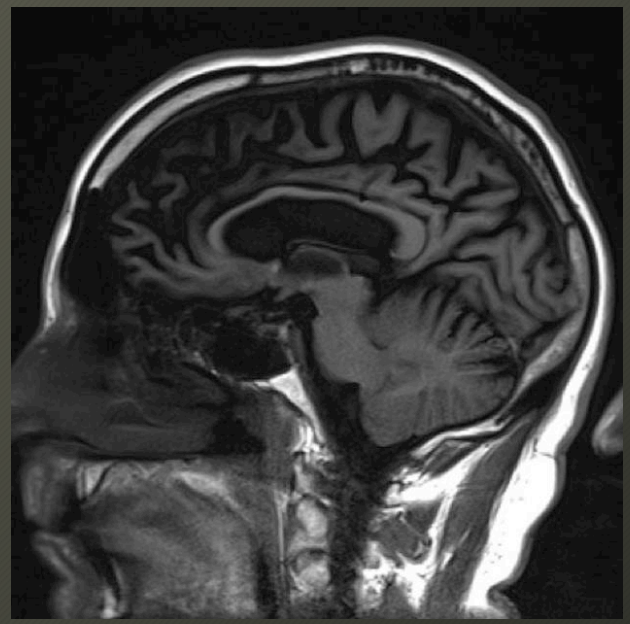
- Behavioural variant (bvFTD)
- Primary Progressive Aphasia (PPA) – language/speech
- Parkinson's plus syndrome – CBD, PSP

Frontotemporal Dementia

- Altered social conduct, personality change
- Emotional blunting
- Lacking insight
- Diet – overeating (hyperphagia, hyperorality), sweet foods
- Perseverative behaviours, echolalia
- Cognitive – poor planning/organisation, lack of self-monitoring

Frontotemporal Dementia

- Investigations
  - CT/MRI – frontotemporal atrophy (can be normal)
  - HMPAO SPECT (blood flow) – reduced frontotemporal flow
  - Neuropsychology – impaired frontal lobe function, speech and memory usually relatively preserved



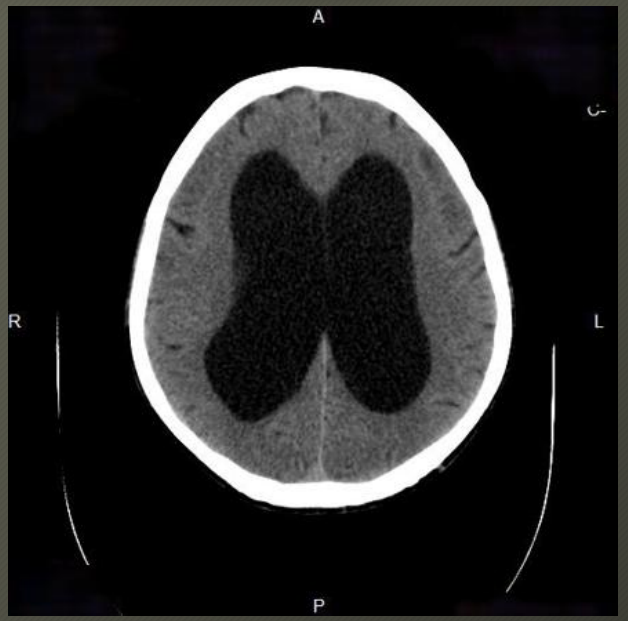
Source: https://radiopaedia.org/cases/behavioral-variant-frontotemporal-dementia-1

Frontotemporal Dementia

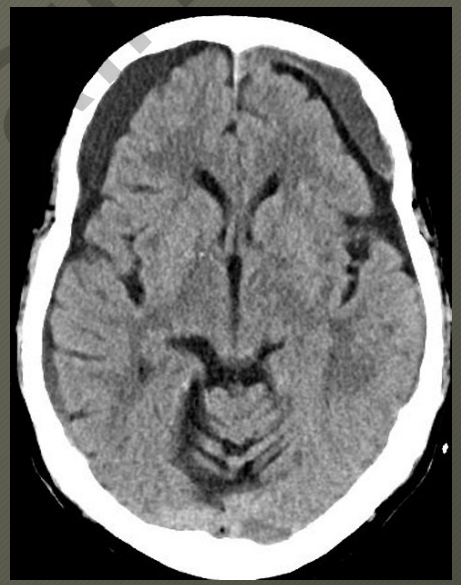
- Management
  - No specific treatments
  - AChEI no benefit – caution, can worsen behaviour
  - SSRI – consider if behavioural disturbance (disinhibition, sexual, apathy)

Other Considerations

- Normal pressure hydrocephalus (NPH)[1]
  - Dilatation of ventricles, normal pressures
  - Wet (urinary incontinence – late), wobbly (ataxia/falls), wacky (dementia)
  - Dementia syndrome reversible
  - LP and timed walk, consider shunt



- Chronic subdural haematoma (SDH)[2]
  - Insidious, fluctuating
  - Esp. if post-fall, alcohol, clotting disorder
  - CT head with contrast
  - Neurosurgery



1. Source: https://radiopaedia.org/articles/normal-pressure-hydrocephalus
2. Source: https://radiopaedia.org/cases/chronic-subdural-hematomas

Other Considerations

- Wernicke's encephalopathy / Korsakoff's psychosis – alcohol excess
- MS / MND / Huntington's disease
- HIV / syphilis
- CJD - very rapid progression, myoclonus

- Medication – anticholinergics, benzodiazepines

- Physical – hypothyroidism, anaemia, B12/folate deficiency, hypoglycaemia

- Psychiatric
  - Pseudodementia in depression
  - Chronic severe and enduring mental illness

Behavioural & Psychological Symptoms of Dementia (BPSD)

- Very common
- Main reason for admission to dementia unit
- Treat underlying causes, ABC charts, basic care
- Treat based on symptoms e.g. antipsychotics for agitation/hostility, antidepressants for low mood/apathy

Behavioural	Psychological
Restlessness and pacing Vocalisations Wandering Agitation Irritability Aggression Poor sleep	Anxiety Depression Delusions/hallucinations

Overall Approach to Dementia Care

- Memory clinics
- Discuss diagnosis and treatment
- Post Diagnostic Support (PDS)
  - Information for patient/families
  - Monitor medication
  - Social aspects – groups, benefits, driving
- Often discharged afterwards with GP monitoring as required

Overall Approach to Dementia Care

- Neuropsychology
  - Specially trained clinical psychologist
  - Specific cognitive tests
  - Dementia subtype clarification ?MCI ?normal ageing
  - Helpful if ongoing psychological issues e.g. depression/anxiety
- Occupational therapy and physiotherapy
- SALT
- Community Psychiatric Nurses (CPN)
- Specialist dementia services e.g. early onset dementia team

Thank you

Questions?

References

- Dening T, Thomas A. Oxford Textbook of Old Age Psychiatry, 2nd Edition
- David S et al. Lishman's Organic Psychiatry, 4th Edition
- Rodda J et al. The Old Age Psychiatry Handbook
- Butler R, Katona C. Seminars in Old Age Psychiatry, 2nd Edition
- World Health Organisation. International Classification of Diseases, version 10