



Alcohol related brain injury in later life

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Scope of today's talk

- ▶ Epidemiology of Alcohol in later life
- ▶ Specific alcohol related brain injuries
 - Wernicke's
 - Korsakoff's
- ▶ Non-specific alcohol related brain injury
- ▶ Alcohol as a comorbid factor

How old is a later life drinker?

50

Other numbers

- ▶ 1 unit of alcohol = $\frac{\text{volume of drink} \times \text{percentage alcohol}}{1000}$
- ▶ Recommended units per week = 14, 3 per day if woman, 5 per day if man (above that is a binge)
- ▶ This data is calculated from a total population perspective but:
- ▶ With physiological changes, toxicity of alcohol increases with normal ageing
- ▶ We do not know how these guidelines apply to eg a 40kg, 96 year old woman
- ▶ Individual Medical co-morbidities influence impact of alcohol

What defines alcohol dependency?

- ▶ A cluster of behavioural, cognitive, and physiological phenomena that develop after repeated substance use and that typically include a strong desire to take the drug, difficulties in controlling its use, persisting in its use despite harmful consequences, a higher priority given to drug use than to other activities and obligations, increased tolerance, and sometimes a physical withdrawal state.
- ▶ Saliency – motivation to eg drink
- ▶ Primacy – favouring drinking over relationships, other activities, eating
- ▶ Limited repertoire – only drinking beer etc.
- ▶ Not all features need to be present “I’m not an alcoholic cos I drink beer, wine and all the spirits”

Epidemiology of later life alcohol addiction

- ▶ Trend in increase in units/day in over 65 group (big reduction in 16-44 groups) 2005-2013
- ▶ “survivors” vs sick quitters
- ▶ Under reporting may bias low risk groups
- ▶ Social trends of ‘baby boomers’ and looser family groups/ awareness of abusive relationships influencing matters
- ▶ Parallel trend with prescribed and non-prescribed addictive drugs
- ▶ Street drinkers at risk of spice addiction: “get annihilated”
- ▶ Post retirement hedonists without commitments using stimulants
- ▶ Risk in younger drinkers is >30 unit/week; ??? Later life

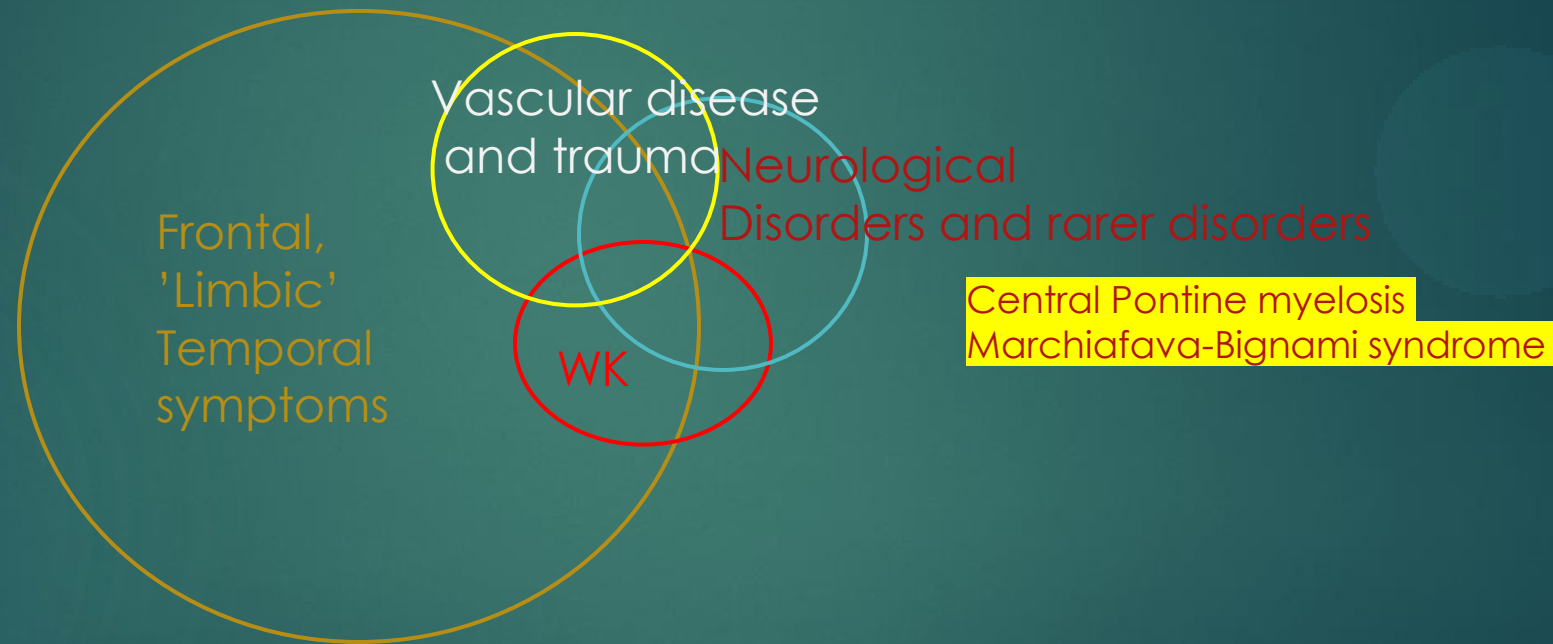
Why is it a problem?

- ▶ Physical health –
- ▶ Cardiovascular: congestive cardiac failure, atrial fibrillation, hypertension, coronary artery disease (including MI), other arrhythmia
- ▶ Gastrointestinal - alcohol related liver disease (including fatty liver), GORD, ulcers, diarrhoea/ constipation, vitamin deficiencies/nutrition problems
- ▶ Renal – chronic kidney disease
- ▶ Endocrine – poor diabetic control, obesity, impotence, gynaecomastia
- ▶ Musculoskeletal: FALLS, osteoporosis, fractures
- ▶ Oncology: cancers (breast, hepatocellular, upper GI, oropharynx)
- ▶ Mental health
- ▶ Withdrawals (90% mortality untreated, 8% treated), low mood, anxiety, cognitive impairment

What is dementia?

- ▶ A PROGRESSIVE, NON-REVERSIBLE condition
- ▶ Dementia (F00-F03) is a syndrome due to disease of the brain, usually of a chronic or progressive nature, in which there is disturbance of multiple higher cortical functions, including memory, thinking, orientation, comprehension, calculation, learning capacity, language, and judgement. Consciousness is not clouded. The impairments of cognitive function are commonly accompanied, and occasionally preceded, by deterioration in emotional control, social behaviour, or motivation. This syndrome occurs in Alzheimer's disease, in cerebrovascular disease, and in other conditions primarily or secondarily affecting the brain.

ALCOHOL RELATED BRAIN DAMAGE



Alcohol Related Brain damage

Clinical characteristics

Two main issues relevant to the concept of denial:
Tuck, Jackson 1991 N=641 patients referred

- ▶ Frontal lobe problems in 58%
- ▶ Memory loss in 32%

Cognitive impairment in alcoholics frequently takes the form of frontal lobe dysfunction and may be relatively subtle, requiring a neuropsychological examination for diagnosis. Signs of cognitive impairment may precede those of alcohol related neurological disorders by more than ten years.

Specific alcohol related brain syndromes: Wernicke's

Caused by Thiamine deficiency (vit B1)

Any cause of thiamine def. (eg crohn's colitis, anorexia nervosa, dialysis, beri beri) can cause it. (wet beri beri present in Glaswegian Alcoholics , mistaken to be CCF!)

Without thiamine, glucose is metabolized through less efficient anaerobic pathways that produce lactic acid. Acidosis affecting periventricular structures (i.e., thalami, mammillary bodies, oculomotor nuclei, cerebellar vermis) accounts for the clinical presentation.

A TRIAD of symptoms (only it's not!: only 10% have all three). Can be fluctuant.

Ophthalmoplegia (any, most usually lateral rectus)

Cerebellar dysfunction (ataxia, can be subtle)

confusion

Treatment and prevention of Wernicke's

- ▶ Parenteral vitamins (eg Pabrinex) for at least 3 days or until the patient stops getting better (may be for up to 10 days)
- ▶ Continue oral thiamine at least 50mg QDS for three months post discharge (or until able to take normal diet for 3 months)
- ▶ Some may continue thiamine if still improving but no trials have been done into this

Korsakoff's syndrome

- ▶ anterograde amnesia
- ▶ retrograde amnesia, severe memory loss
- ▶ confabulation,
- ▶ minimal content in conversation
- ▶ lack of insight
- ▶ apathy – the patients lose interest in things quickly, and generally appear indifferent to change.
- ▶ Fluctuant presentation
- ▶ Psychotic features can be present (but at risk of delirium)

Mamillary body – thalamic damage

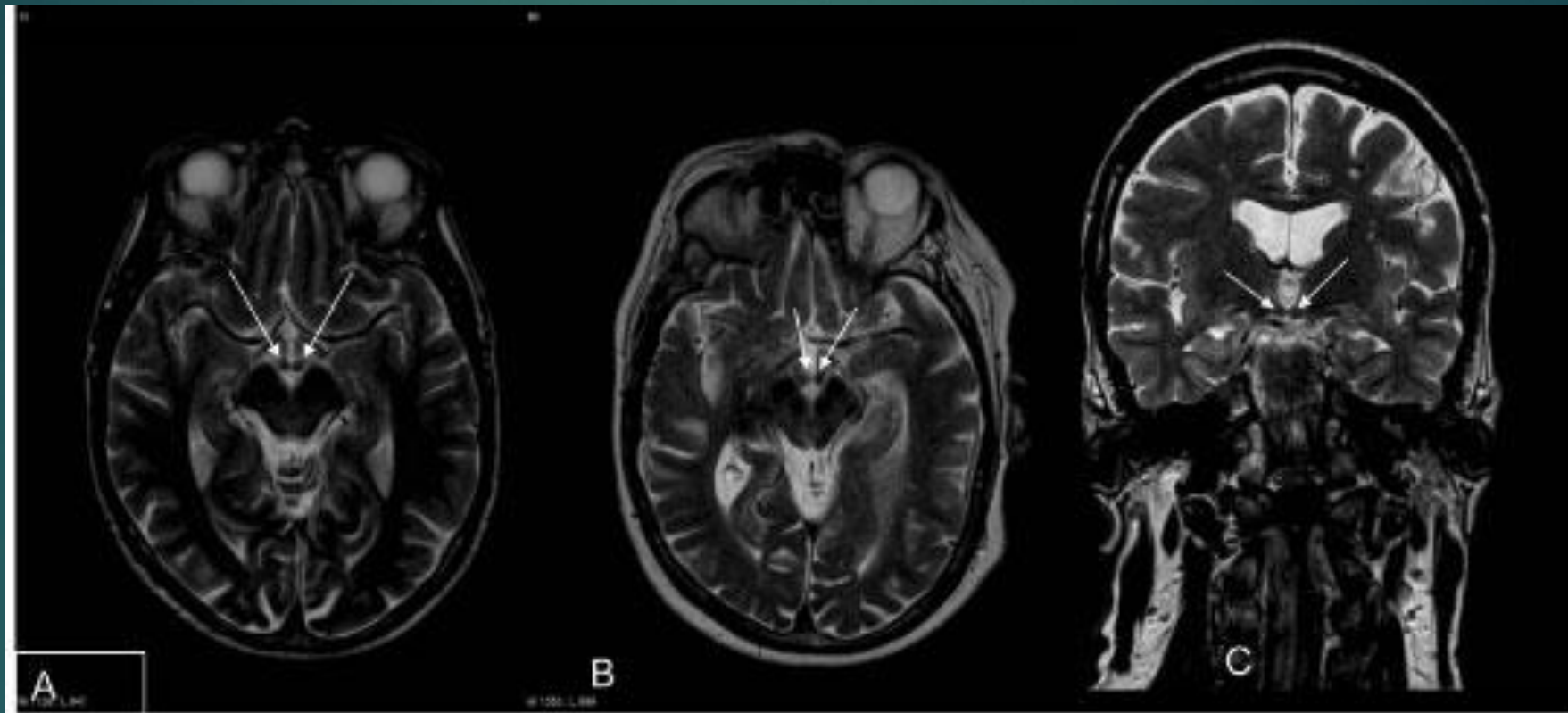


Figure 5: Changes of the mamillary bodies in Wernicke-Korsakoff syndrome. Mamillary bodies can best be seen on T2 sequence pictures (fig. 4A). In acute Wernicke's encephalopathy a contrast enhancement in the mamillary bodies on T1 sequence pictures can be seen (not shown). Among patients with or after Wernicke's encephalopathy smaller mamillary bodies can be discerned (fig. 4B and 4C) in comparison to the mamillary bodies of healthy individuals (fig 4A).

Treatment of Korsakoff's

- ▶ Prevention – pabrinex , Carbohydrate with alcohol protective
- ▶ If presenting with Korsakoff's for first time/ after further period of drinking, pabrimex for 5 days (some argue 10)
- ▶ Thiamine for 3 months after abstinence/ long term
- ▶ Social care interventions
- ▶ Safeguarding

Alcohol related brain injury

- ▶ Umbrella term – more accurate than alcohol dementia
- ▶ Broader syndrome than Wernicke' /Korsakoff's but may have features
- ▶ Frontal lobe damage a key feature
- ▶ Reversible after 6 months in abstinence (including atrophy) in majority of cases, some research suggests good diet

Alcohol related brain injury

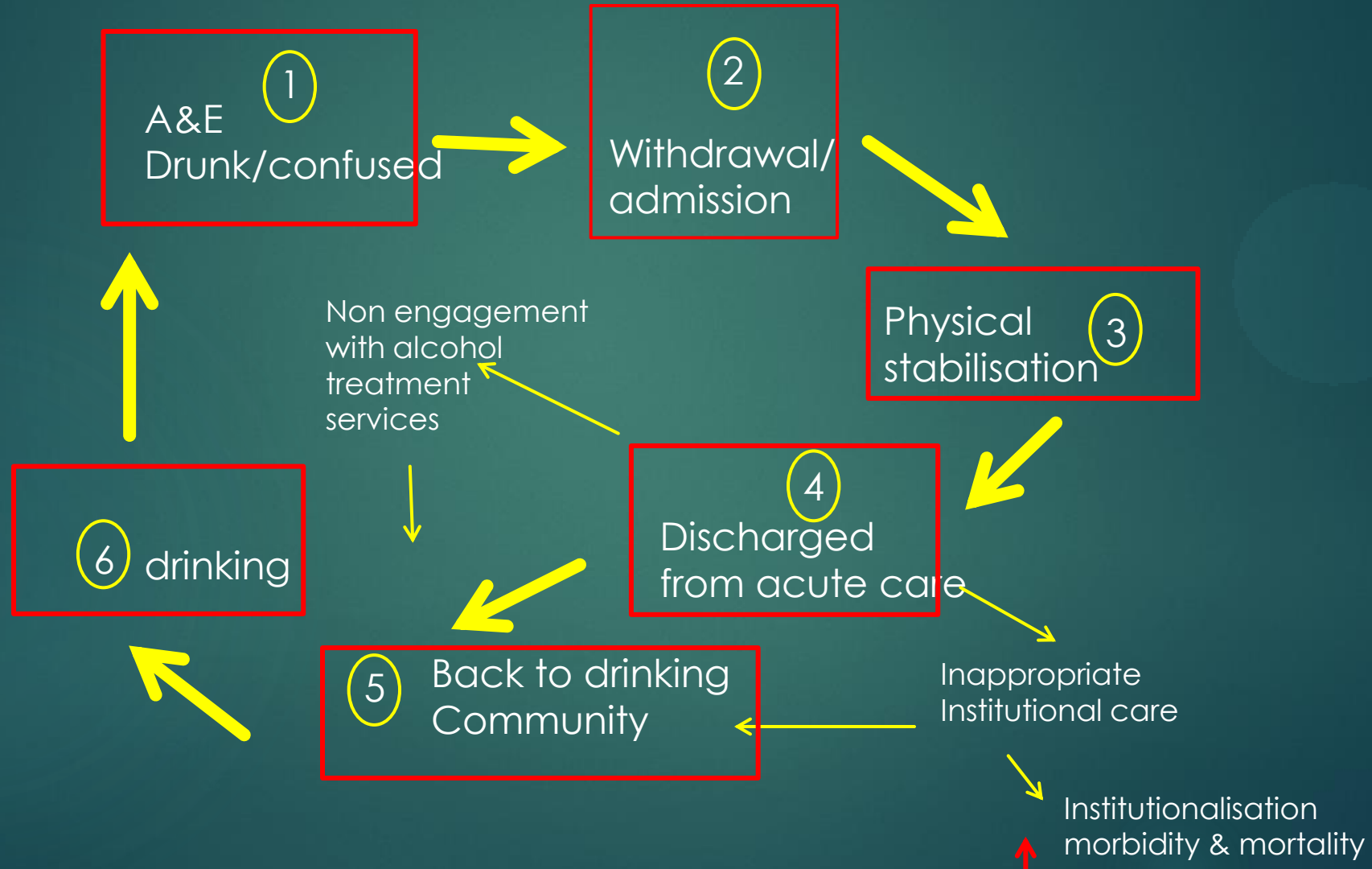
Principles of treatment

- ▶ Abstinence
- ▶ Diet
- ▶ B vitamins
- ▶ Investigate co-morbidity
- ▶ Support socially

Treating alcohol misuse in the elderly

- ▶ Ask about alcohol intake – take a proper history, inc other substances, prescribed, other peoples, novel psychoactives
- ▶ Refer to services and encourage self referral
- ▶ Who buys the booze? Help enablers realise their role and offer carer support and Al-anon (co-dependent relationships)
- ▶ Consider safeguarding issues - CAPACITY
- ▶ Driving and DVLA
- ▶ If abstinence is not possible, consider harm reduction including watering down alcohol in best interests (remember this it to reduce total units: 24 shandies not better than 10 cans of stella!)

The 6 steps of non-intervention for cognitively impaired alcohol dependents



Alcohol as a co-morbid factor

- ▶ “If I could invent a drug that would cause alcohol, I’d invent alcohol...”
- ▶ If someone truly meets criteria for depression, anxiety etc then treat as you would but:
 - efficacy is reduced when still drinking
 - alcohol causes dysphoria/anxiety so diagnosis is challenging
 - remember co-morbidities: risk of GI bleeds with SSRI’s, risk of falls, etc
 - don’t add to an addicts’ addictions
- ▶ Alcohol dependent individuals can get Alzheimer’s, Fronto-temporal dementia and vascular dementia as well.

Data question

- ▶ Mrs Bloggs drinks 2 standard bottles of wine per day. One bottle is 12%, and the other is 13.5%. She also drinks one third of a bottle of 24% 'British sherry' per day.
- ▶ What is her daily and weekly unit consumption, assuming she drinks this every day?

Answer

- ▶ Daily = 25
- ▶ Weekly = 175
- ▶ This is a real 76 year patient in Bolton