LEARNING OBJECTIVES

1. To be aware of the mechanisms of alcohol related neuronal damage

2. To improve knowledge around definition and clinical features of alcohol related dementia

3. To reflect on how alcohol related brain damage influences clinical practice
Mechanism of alcohol neurotoxicity

Direct toxicity - frontal and hippocampal damage

Malnutrition - Wernicke’s encephalopathy/Korsakoff’s syndrome

Metabolite toxicity

Electrolyte imbalance

Hepatic encephalopathy/Infection

Inflammatory (e.g. TNF α)

Modifying factors (e.g. Apo e allele/elevated homocysteine)
ALCOHOL RELATED BRAIN DAMAGE

(Wilson, 2014)
KORSAKOFF’S SYNDROME

Results from chronic alcoholism and consequent thiamine deficiency

Severe anterograde amnesia

Severe retrograde amnesia extending years before damage

Confabulation - make up stories to fill in absent memories

Preserved short term memory

Often unaware of deficit
62 year old man referred to Community Mental Health Team (CMHT) by local housing officer after neighbours witnessed series of falls on returning to his flat at night (No. 2)

Reported by neighbours to leave house early and return at night, often losing his balance and falling on his way back to flat

Unpaid rent for 6 months- Housing officer only managed “doorstep” visit, at which he was dishevelled, unshaven but did not look thin and dressed appropriately

At the same visit, he was irritable & abusive but not intoxicated and denied financial problems. Last seen by GP year before, who noted problems in keeping appointments. There was a suspicion of alcohol misuse from self report and blood investigations, but Mr he was unwilling to seek further help

HOW WOULD YOU PROCEED WITH THE ASSESSMENT?
ALCOHOL RELATED DEMENTIA

Evidence of cognitive impairment

Significant alcohol use as defined by the minimum average of 35 standard drinks per week for men and 28 for women, for a period of greater than 5 years

The period of significant alcohol use must occur within three years of clinical onset of cognitive impairment
A probable diagnosis of ARD is supported by presence of:

1. Alcohol related hepatic, pancreatic, gastrointestinal, cardiovascular or renal disease or other end organ damage.
2. Ataxia or peripheral polyneuropathy (not attributable to other non-alcohol related causes).
3. Neuroimaging evidence of cerebellar atrophy (esp. vermis)
4. Cognitive damage and evidence of ventricular or sulcal dilatation are likely to improve within the first 60 days, residual damage will be slower to improve and may be permanent

The following cast doubt on a probable diagnosis of ARD

1. Significant language impairment (e.g. nominal dysphasia) focal neurological signs or symptoms (except ataxia or peripheral sensory polyneuropathy)
2. Neuroimaging evidence of cortical or subcortical infarction, subdural haematoma or other focal brain pathology
3. Elevated Hachinski Ischemia scale score
Neuropsychological profile

• ARBD shows better performance on semantic and verbal memory but poorer performance on visuospatial tasks vs Alzheimer’s disease (Rao 2016)

• Longitudinally, continued cognitive decline despite abstinence suggests a primary dementia and an initial ARBD diagnosis may need to be changed

• Alcohol use disorders frequently complicate primary dementia, increasing adverse effects and cognitive decline

• Increased interest in the role of damage to fronto-cerebellar circuits: cerebellar damage per se may disrupt frontal processes such as executive function and poor response inhibition
72-year-old female retired teacher living alone since death of husband 1 year ago. Assessed by old age psychiatry services because of progressive memory changes over approximately 2 years (No.13)

• Drank bottle of wine per day with husband for many years; switched to bottle of spirits after his death. Daughter worried that mother still drives
• Independent with all domestic activities but in rent arrears and daughter reports money often “missing” from purse
• Medical history of gout, hypertension and Type II diabetes mellitus
• Smokes 20 filtered medium tar cigarettes per day but no other substance use or misuse
• Short Mini-Mental State Examination (sMMSE) score 20/30 and clinical picture consistent with probable alcohol related dementia

HOW WOULD YOU PROCEED WITH TREATMENT AND FOLLOW-UP?
FURTHER READING

Oslin DW, Carey MS. Alcohol related dementia; Validation of diagnostic criteria. American Journal of Geriatric Psychiatry 2003;11(4):441-7

