Alcohol Related Brain Damage in Older People

Dr Tony Rao
Consultant Old Age Psychiatrist
South London and Maudsley NHS Foundation Trust
Visiting Lecturer
Institute of Psychiatry, Psychology and Neuroscience
ALCOHOL AND BRAIN DAMAGE

IT’S NOT JUST ABOUT THIAMINE
Subdural haematoma
Extradural haematoma
Intracerebral haemorrhage
Intraventricular haemorrhage
Chronic ischaemia

Cerebrovascular

Alcohol Related Dementia

Korsakoff Syndrome

Thiamine Deficiency

Wernicke’s Encephalopathy

Direct damage

Demyelination
↑Receptor Sensitivity
↑Free radicals
↓Growth factors
→Cell disintegration

Modifying factors

Elevated homocysteine
Genetic factors
Hepatic encephalopathy

Metabolite toxicity
Electrolyte imbalance
Inflammation

Receptor Sensitivity
↓Growth factors

Electrolyte imbalance
Inflammation
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

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 he was unwilling to seek further help

WHAT WOULD BE YOUR IMMEDIATE MANAGEMENT?
WHAT SOURCES OF INFORMATION WOULD HELP TO MAKE A DIAGNOSIS?
Wernicke’s Encephalopathy

• ‘Classic triad’ of ocular motor abnormalities, cerebellar dysfunction & altered mental state present in only 20% of patients

• Altered mental state occurs in 80%
  – mental sluggishness, apathy, impaired awareness of an immediate situation, disorientation, poor attention, agitation, hallucinations

  – Cerebellar dysfunction occur in 25% (loss of equilibrium, gait disturbance, truncal ataxia, dysdiadochokinesia and occasionally, limb ataxia or dysarthria)
Korsakoff’s Syndrome

Results from alcohol dependence 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
ALCOHOL RELATED DEMENTIA

Evidence of cognitive impairment

Significant alcohol use as defined by the minimum average of 35 standard drinks (50 units) per week for men and 28 (40 units) for women, over more than 5 years

The period of significant alcohol use must occur within three years of clinical onset of cognitive impairment
Control Alcohol Related Dementia (ARD)

Corpus Callosum

Cerebellum

Thalamus

Mamillary Bodies

Alcohol Related Dementia (ARD)

Korsakoff’s Syndrome + ARD
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
WHAT’S DIFFERENT ABOUT ALCOHOL RELATED COGNITIVE IMPAIRMENT?

EARLIER DAMAGE TO FRONTAL LOBES!

Short Term Memory, “Executive Function”
- Working memory
- Problem solving
- Planning and initiating
- Inhibiting errors in tasks
- Weighing up alternatives

“Metacognition” Overall decision making
- “Energisation” Motivation
- Reaction time
- Verbal fluency

Behavioural and Emotional Regulation
- Reduced processing of risk/reward and deception
Montreal Assessment of Cognitive Function (MoCA)

A test of overall cognitive function

Includes tests of frontal lobe function

Helps to distinguish between mild, moderate and severe cognitive impairment

Requires training to administer
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

- 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 FOLLOW-UP?
MULTI-AGENCY WORKING FOR ALCOHOL-RELATED COGNITIVE IMPAIRMENT

- Community detoxification
- Community care coordination
- Old Age Psychiatry/Memory Service
- OT and Psychology
- ‘Wet’ Hostel
- Dietician
- Comprehensive medical review
- Specialist Dementia Care
- Specialist residential rehabilitation

Key services:
- Addictions Psychiatry
- Psychological Interventions
- Health and Social Care
- Care of the Elderly Medicine
- Specialist Housing & Continuing Care

Specialist residential rehabilitation

Old Age Psychiatry/Memory Service
FURTHER READING

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

