Background

- Studies suggest that long-term use of anticholinergic medication or use of benzodiazepines may increase an individual's future risk of cognitive decline and dementia.
- Benzodiazepines (BZD) including diazepam (Valium), and temazepam are used for anxiety, sleep disturbance, or alcohol withdrawal.
- Many medications confer an anticholinergic burden (ACB). Anticholinergic medications are used for symptoms of incontinence (e.g., oxybutynin), depression (tricyclics eg amitriptyline), allergies (first generation antihistamines), and Parkinson's disease.

Objectives

- The current analysis estimates the effect of ACB and BZD use on dementia incidence using data from the Medical Research Council Cognitive Function and Ageing Study (MRC CFAS).

Design and Participants

- 13044 participants representative of the population of England and Wales aged 65 and older were recruited in 1991 and followed for 10 years.
- Participants underwent interviews and comprehensive cognitive assessments at recruitment (year 0), 2, and 10 year follow-ups.
- Here we included participants who did not have dementia at the 2 year follow-up, and who survived to be assessed at 10 years.
- Medication exposure classification was based on the 0 and 2 year assessments.

Sample characteristics

Those who developed dementia by 10 year follow up were at baseline older, more disabled, less educated, reported worse health, had worse cognitive function, and more cognitive decline between 0 and 2 year assessments.

Exposures

- All participants were asked about any (prescription or over-the-counter) medication use at each assessment. Packaging and prescriptions were used to verify records.
- Benzodiazepines, including z-drugs (BZD).
- Definite anticholinergics (ACB3) and possible/probable anticholinergics (ACB1-2) were classified according the Anticholinergic Cognitive Burden scale.
- Medication users were defined as ever-user (recruitment or 2 year follow-up), recurrent (both recruitment and 2 year follow-up) new (only at 2 year follow-up), discontinuing (only at recruitment) or no-user (no use in any wave)

Outcomes

- Our outcome was incident dementia between 2 and 10 year follow-ups. Dementia was diagnosed using the Automated Geriatric Examination for Computer Assisted Taxonomy (AGECAT) algorithm.

Analysis and covariates

- Poisson regression was used to estimate incidence rate ratio (aIRR) adjusted for main indications of ACB and BZD, demographic characteristics, baseline cognition, disability and health conditions.
- Pre-specified stratification by age, sex and year 2 MMSE score.
- Loss to follow-up from 2 to 10 years was accounted for using inverse probability weights

Findings I – dementia incidence by pattern of medication use

Findings II – Effect of medication use on dementia incidence among subgroups of the population

Conclusions

Neither benzodiazepines nor possible/probable anticholinergics were significantly associated with dementia incidence.
A possible effect of definite anticholinergic use among those with good baseline cognitive function should be treated with caution owing to small sample size.
This finding should be explored further and interpreted alongside findings from similar studies.

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