Anticholinergics and Benzodiazepines medication use and 10-year cognitive decline in the MRC Cognitive Function and Ageing Study

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Anticholinergics, Benzodiazepines, Cognition and Dementia (ABCD) study

Background

Some studies suggest that long-term use of strong anticholinergics* (medication with anticholinergic activity that may cause delirium) or benzodiazepines increases cognitive decline.

Benzodiazepines, Z-drugs and medications with anticholinergic properties are widely used to treat depression, anxiety, sleep disturbance urinary incontinence and other chronic conditions.

Aims

We aimed to assess if cognitive function is affected by current medication use and how this effect changes with duration of use.

Method

We analyse how different patterns of anticholinergic and benzodiazepine (including Z-drugs) use affect Mini-mental State Examination (MMSE) scores over 10 year follow-up for 13,004 participants aged 65+ from England and Wales in the Medical Research Council Cognitive Function and Ageing Study (MRC CFAS)

Baseline: 1991-1993

This research was supported by funding from the Alzheimer’s Society (AS-PG-2013-017).

Anticholinergics

Strong Anticholinergics use was associated with greater cognitive decline

Baseline use

Fig 1. Association between anticholinergic use at baseline and cognitive decline

Benzodiazepines

Benzodiazepines use was not associated with greater cognitive decline

Baseline use

Fig 3. Association between benzodiazepine use at baseline and cognitive decline

Patterns of use

Fig 2. Association between new and recurrent anticholinergics users and cognitive decline

Patterns of use

Fig 4. Association between new and recurrent benzodiazepines users and cognitive decline

Predicted MMSE change with 95% CIs - baseline use

Predicted MMSE change with 95% CIs - patterns of use

Predicted MMSE change with 95% CIs - baseline users

Predicted MMSE change with 95% CIs - baseline users

Predicted MMSE change with 95% CIs - baseline users

Additional change vs no users

N= 8,172

Baseline to 2 years

2 to 10 years

No user

-0.84, p = 0.01

-0.15, p = 0.73

Baseline to 2 years

New (N = 341)

Discontinuing (N = 164)

Recurrent (N = 225)

-0.67, p = 0.01

-0.41, p = 0.47

-0.21, p = 0.26

-1.00, p = 0.02

There was no evidence of an increased cognitive decline for recurrent users of benzodiazepines

Conclusions: We observed no long-term increased cognitive decline with benzodiazepine use. Our analyses suggest that strong anticholinergic use is associated with cognitive decline, but whether these medications are being prescribed for patients who already have symptoms of dementia needs further analysis.

* www.agingbraincare.org/tools/abc-anticholinergic-cognitive-burden-scale