Increasing prevalence of anticholinergic medication use over 20 years in the UK older population: Cognitive Function and Ageing Study I and II

Carlota M Grossi, Ian Maidment, Kathryn Richardson, Chris Fox, Carol Brayne, Fiona E Matthews, Louise Robinson, George M Savva

1School of Health Sciences, University of East Anglia; 2School of Life & Health Sciences, Aston University; 3Norwich Medical School, University of East Anglia; 4Department of Public Health and Primary Care, University of Cambridge; 5MRC Biostatistics Unit, Cambridge; 6Institute of Health & Society, University of Newcastle. Email: g.savva@uea.ac.uk; Twitter: @ABCD_Study; Web: www.uea.ac.uk/drug-safety-and-dementia

Background

- Use data from the Cognitive Function and Ageing Study (CFAS I and II) to estimate whether potent anticholinergic use is associated with an increased dementia risk.
- Pre-planned subgroup analyses exploring specific anticholinergic medication classes.

Population and sample

- Data were obtained from the first waves of the Cognitive Function and Ageing Studies (CFAS I and II).
- CFAS is representative of the UK population aged 65 yrs and older.
- Participants with dementia and in long term care are included.
- Participants were recruited from: Cambridgeshire (rural) Nottingham (urban)

Methods: comparison of repeated cross-sectional data from CFAS I (c. 1989-91) and CFAS II (2008-11)

Analysis

- We estimated the prevalence of:
  - Any anticholinergic (use of any ACB 1, 2 or 3)
  - Potent anticholinergic (use of at least one ACB 3).
- Prevalence was calculated using inverse probability weights and standardised to the 2011 UK age and sex distribution to account for changes in population structure.
- Finally we used multivariable logistic regression to estimate the odds ratios corresponding to the difference in prevalence between 1991 and 2011.
- Three models were estimated, model 3 controlling for the effects of age, sex, education, social class and relevant morbidities on ACB 3 use.

Multivariable analysis (table below)

- The increase in anticholinergic antidepressant use is seen in both sexes.
- The increase is not accounted for by increases in depression or other comorbidities (comparing models 2 and 3).

Conclusions

- ACB 3 were more common among women, those aged 75 and older (compared to 65+), and those reporting depression, anxiety, Parkinsons disease, diabetes, stroke, arthritis or asthma (not shown).
- ACB 3 use was not independently associated with education or social class (not shown).

Sample characteristics and prevalence of anticholinergics (table opposite)

- CFAS I and CFAS II samples were similar in age and sex distribution.
- The prevalence of definite anticholinergic (ACB 3) use was twice as high among women than men at both time points.
- ACB 3 use increased markedly from 1991 to 2011 among men and women.

Results

- Antidepressants make up more than half of ACB 3 prescriptions.
- Antidepressants and urologicals use increase dramatically between studies, while other anticholinergic classes do not.

Conflicts of Interest

- The project was funded by the Alzheimer’s Society (AS-PG-2013-017).
- Drs Fox and Maidment received travel grants and Dr Fox received lecture fees from Astellas Pharma UK.
- All other authors report no conflict of interest.