Date: 24th June 2011

Word count: 1022

Sentences: 34

**Drug side effect linked with increased health risks for over 65s**

A side effect of many commonly used drugs appears to increase the risks of both cognitive impairment and death.

A side effect of many commonly used drugs appears to increase the risks of both cognitive impairment and death in older people, according to new research by the Universities of East Anglia (UEA) and Cambridge.

As part of the Medical Research Council’s Cognitive Function and Ageing Studies (CFAS) project (led by the University of Cambridge in collaboration with other universities), the study is the first systematic investigation into the long term health impacts of ‘anticholinergic activity’ – a known potential side effect of many prescription and over the counter drugs which affects the brain by blocking a key neurotransmitter called acetylcholine. The findings are published today by the *Journal of the American Geriatrics Society.*

Medicines with some degree of anticholinergic effect are wide-ranging and many are frequently taken by older people. The groups with the greatest impact include: anti-depressants such as *Amitriptyline, Imipramine* and *Clomipramine;* tranquilisers such as *Chlorpromazine* and *Trifluoperazine*; bladder medication such as *Oxybutynin*; and antihistamines such as *Chlorphenamine*. Other drugs with an anticholinergic effect include: *Atenolol, Furosemide* and *Nifedipine* for heart problems; painkillers such as *Codeine* and *Dextropropoxyphene*; the asthma treatment *Beclometasone*;the epilepsy treatment *Carbamazepine;* and *Timolol* eyedrops which are used for glaucoma*.*

The large cohort study was launched as part of the drive to find ways of reducing risk factors for dementia which affects 820,000 people in the UK. The collaboration included UEA, University of Cambridge, Indiana University and the National Health Service. The project was funded by the Medical Research Council (MRC) and the US National Institute on Aging.

More than 13,000 men and women aged 65 and over from across the UK were included in the two-year study. Around half were found to use a medication with potential anticholinergic properties.

In the study, each drug taken by the participants was given a ranking based on the strength of its anticholinergic activity, or Anticholinergic Cognitive Burden (ACB) – 0 for no effect, 1 for mild effect, 2 for moderate effect and 3 for severe effect.

The key findings were:

* Twenty per cent of participants taking drugs with a total ACB of four or more had died by the end of the two-year study, compared with only seven per cent of those taking no anticholinergic drugs -  the first time a link between anticholinergics and mortality has been shown.
* For every additional ACB point scored, the odds of dying increased by 26 per cent.
* Participants taking drugs with a combined ACB of five or more scored more than four per cent lower in a cognitive function test than those taking no anticholinergic medications – confirming evidence from previous smaller studies of a link between anticholinergics and cognitive impairment.
* The increased risks from anticholinergic drugs were shown to be cumulative, based on the number of anticholinergic drugs taken and the strength of each drug’s anticholinergic effect.
* Those who were older, of lower social class, and with a greater number of health conditions tended to take the most anticholinergic drugs.

Co-author Professor Carol Brayne, principal investigator of the MRC CFAS project at the University of Cambridge, said: “It is important to scrutinise medications given to older people very carefully to try to minimise harm as well as gain the desired benefit. The admirable wish to give the best possible treatment with good evidence for individual conditions has to be balanced against the fact that in many older people with multiple conditions this will lead to accumulated risk such as that shown by this scale.”

Lead author Dr Chris Fox, clinical senior lecturer at Norwich Medical School, University of East Anglia, said: “This is the first large scale study into the long-term impact of medicines which block acetylcholine – a common brain neurotransmitter – on humans, and our results show a potentially serious effect on mortality. Clinicians should conduct regular reviews of the medication taken by their older patients, both prescribed and over the counter, and wherever possible avoid prescribing multiple drugs with anticholinergic effects.

“Further research must now be undertaken to understand possible reasons for this link and, in particular, whether and how the anticholinergic drugs might cause the increased mortality. In the meantime, I strongly advise patients with any concerns to continue taking their medicines until they have consulted their family doctor or their pharmacist.”

Ian Maidment, a mental health pharmacist working within the NHS, added: “One of the issues is that as we age, we tend to be prescribed more medicines which have an anticholinergic effect, increasing the overall burden.”

Prof Chris Kennard, chairman of the MRC’s Neuroscience and Mental Health Board, which funded the research, said: “The Medical Research Council invests in cohort studies like CFAS because they provide vital clinical information through observation. Such projects require long-term commitment to fulfil their potential but having supported cohort studies for well over half a century, MRC funding and collaborations have made the UK an international leader in this field.”

A group of scientists led by the Regenstrief Institute in Indianapolis, US, supported by scientists from Norwich Medical School at UEA, and the NHS, developed the Anticholinergic Cognitive Burden scale ([www.indydiscoverynetwork.org/AnticholinergicCognitiveBurdenScale.html](http://www.indydiscoverynetwork.org/AnticholinergicCognitiveBurdenScale.html)).

Dr Malaz Boustani, Associate Professor of Medicine at Indiana University, who reviews the benefits and harms of these medications with patients at the Wishard Healthy Aging Brain Centre in Indianapolis, said: “Our findings make it clear that clinicians need to review the cumulative anticholinergic burden in people presenting with cognitive impairment to determine if the drugs are causing decline in mental status. Every clinician has the duty to protect the brains of their patients and every patient needs to bring over the counter and prescription drugs to their doctor’s appointment for a comprehensive review.”

CFAS is a large, multi-centre initiative launched 20 years ago to examine health and cognitive function in older adults. The study was conducted in Nottingham, Newcastle, Liverpool, Wales, Oxford and Cambridgeshire. See [www.cfas.ac.uk](http://www.cfas.ac.uk/)

*‘Anticholinergic medication use and cognitive impairment in the older population: The Medical Research Council Cognitive Function and Ageing Study (CFAS)’* will be published online by theJournal of the American Geriatrics Society on 24 June 2011.