

RGH Pharmacy E-Bulletin

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A joint initiative of the Patient Services Section and the Drug and Therapeutics Information Service of the Pharmacy Department, Repatriation General Hospital, Daw Park, South Australia. The RGH Pharmacy E-Bulletin is distributed in electronic format on a weekly basis, and aims to present concise, factual information on issues of current interest in therapeutics, drug safety and cost-effective use of medications.

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Anticholinergic agents, cognition and heat-related illness

Drug-induced adverse effects are probably the most readily reversible conditions in geriatric medicine. Medications with anticholinergic activity can have a detrimental effect on cognition and functional performance resulting from adverse effects such as sedation, agitation, confusion and delirium. In healthy older people the use of agents with anticholinergic activity has been shown to negatively affect verbal memory and executive function.

The adverse impact of the anticholinergic effects of drugs is of greater concern in patients with dementia, because compared with age-matched controls without dementia, the brains of patients with dementia are more sensitive to the adverse effects of most drugs. In a retrospective cohort study of patients with Alzheimer's disease treated with donepezil 10 mg/day, subjects were reviewed with annual Mini-Mental Status Examination (MMSE). The study found that in those patients who were also prescribed an anticholinergic agent, the average deterioration in MMSE at one year was 4.2 points and at two years 7.0 points, compared to 2.3 points and 3.1 points, respectively, in patients not taking concomitant anticholinergic agents.

Anticholinergic agents may also adversely affect the behavioural and psychological symptoms of dementia, with an increased risk of visual hallucinations, agitation, irritability, delirium and aggressiveness.

For all elderly patients, not only those with dementia, a methodical review of their medication profile including both prescribed and over-the-counter medications should be undertaken regularly to identify medications that may be contributing to total anticholinergic burden. Aim to reduce exposure to these medications, either by reducing the dose, ceasing the medication entirely, and/or seeking an alternative agent.

Agents with pronounced anticholinergic activity include atropine and homatropine, antihistamines, tricyclic antidepressants and some other antidepressants (paroxetine, mirtazapine, mianserin), antipsychotics (in particular chlorpromazine, clozapine, olanzapine, pericyazine, quetiapine), anticholinergics for urinary incontinence (darifenacin, oxybutynin, propantheline, solifenacin, tolterodine) and anticholinergics for Parkinson's disease (benzhexol, benztropine, biperiden, orphenadrine).

Another clinically important anticholinergic adverse effect is hypohidrosis (reduced sweating). This is particularly relevant during hot weather as the inability to adequately thermoregulate due to reduced heat elimination may lead to significant heat-related illness, in the most extreme cases, heat stroke. This is a significant risk for people of any age taking an agent with anticholinergic activity. Findings from a review of hospital admissions for heat-related illness during a heat wave in France in 2003 estimated that patients taking agents with anticholinergic activity were at six times greater risk of heat-related pathology, compared to those not taking anticholinergics.

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