**Good prescribing in dementia: a brief guide**

Daniel Harwood explains how certain medications prescribed for older people are especially likely to cause troubling side effects for people with dementia.

People with dementia have impaired cognitive function, they are more likely to be older people, and they frequently have other medical problems requiring the prescription of multiple medications. These three factors predispose them to the cognitive side effects of commonly used drugs. In addition, the person may lack the capacity to understand his or her medication regimen, and may be unable to communicate the presence of side effects. Frequent transitions in care, the onset of new medical problems and multiple practitioners involved in the care of a patient may also contribute to difficulties in ensuring safe prescribing in people with dementia.

Given all this, it is important for all staff working with people with dementia and their carers – not just doctors – to have a basic understanding of the principles of good prescribing in dementia and to know something about the drugs which are especially likely to cause side effects. An alert practitioner can avert a serious complication by spotting a potential problem and suggesting a review of medication by the GP or psychiatrist.

This brief paper has been written to support all healthcare staff who work with people with dementia. I have concentrated on common pitfalls and errors and how to avoid them – this is not meant to be a comprehensive review of a complex topic. Readers are referred to the references below for more detail, and unless staff are qualified doctors or nurse prescribers, they should of course always seek advice from a doctor or pharmacist before making any recommendations regarding prescribing. The British National Formulary (2013) is the standard reference for information on medication, including indications, interactions and side effects.

In this paper I am focusing on certain categories of drugs which are particularly likely to cause adverse effects on cognitive functioning or other significant side effects in people with dementia.

**Antimuscarinic (anticholinergic) drugs**

This is the name given to drugs which block the action of acetylcholine. Acetylcholine is one of the most important neurotransmitters in the brain. In all three of the common types of dementia – Alzheimer’s disease, vascular dementia and dementia with Lewy bodies – the neurons containing acetylcholine in the brain are damaged. This leads to the characteristic symptoms of poor concentration, poor memory, drowsiness and speech problems. The cognitive-enhancing cholinesterase inhibitors (donepezil, galantamine and rivastigmine) work by increasing the levels of acetylcholine. But acetylcholine is also a key neurotransmitter in the autonomic nervous system, which controls the bodily functions not under conscious control such as breathing, digestion, heart function and sweating. So acetylcholine-blocking drugs prescribed to alleviate symptoms arising in the autonomic nervous system, such as bowel or bladder spasm, can also reduce the activity of acetylcholine-containing nerve cells in the brain. This in turn can cause confusion and drowsiness. These drugs can also interfere with the action of cognitive-enhancing drugs. Anti-muscarinic drugs impair cognitive function even in healthy older people (Ancelin et al 2006).

Many commonly used drugs have a degree of anti-muscarinic activity, but there are some that are particularly potent:

- **Tricyclic antidepressants** such as amitriptyline, clomipramine and nortriptyline. One of the newer antidepressants such as sertraline or citalopram is a safer option if drug treatment is needed for depression in a person with dementia. Sometimes tricyclic antidepressants are used for the treatment of insomnia and bladder spasms. There are now many safer alternatives for treatment of these problems in patients with dementia.

- **Anti-spasmodic drugs used for urinary frequency and incontinence** such as darifenacin, oxybutynin, fesoterodine, propiverine, solifenacin and trospium. Drugs which act mainly on M3 receptors (the most important receptor in bladder muscle), such as darifenacin, or drugs which cross into the brain in low concentrations, such as trospium, may be less likely to cause cognitive side effects (Kay et al 2005). Drugs with a different mode of action can be helpful for some urinary symptoms, for example duloxetine for stress incontinence. Urinary symptoms are often multi-factorial in people with dementia, and may respond to non-pharmacological approaches such as managing fluid intake and regular prompting to go to the toilet. Unless there is convincing evidence of improvement of symptoms anti-muscarinic drugs are best avoided in people with dementia.
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➤ Anti-spasmodic drugs used for irritable bowel and gut symptoms: These include dicycloverine, hyoscine and propantheline. There are other anti-spasmodics without an anti-muscarinic effect such as alverine, mebeverine and peppermint oil which are safer options for people with dementia.

Anti-histamine drugs especially chlorpheniramine.

Anti-muscarinic drugs used to treat Parkinson’s disease, especially orphenadrine, procyclidine and trihexyphenidyl. There are now many other safer alternatives for people with Parkinsonian symptoms.

Hyoscine is licensed for the treatment of motion sickness and hypersalivation. This is a powerful anti-muscarinic drug which should be avoided in people with cognitive disorders.

Benzodiazepines especially alprazolam, although all benzodiazepines (including lorazepam and diazepam) will cause sedation and put patients at risk of falls (see below).

Bronchodilators used in the treatment of asthma such as theophylline and aminophylline.

Opiate analgesics especially codeine (opiates can exacerbate cognitive function due to their opioid effect). Although sometimes tolerated with no problems, opiates can have an unpredictable and dramatic effect on cognitive impairment and the new prescription of opiates should always be considered as a potential cause of an acute confusional state. Opiates also cause constipation which in turn can worsen cognitive function in people with dementia.

If at all possible, these drugs should be tailed off or substituted with a safer alternative if someone has dementia. Of course, sometimes people with dementia need to be prescribed one of the drugs above because of distressing physical symptoms, but in these cases, cognitive function should be monitored closely, the drug prescribed at a minimum dose, and the use of the drug reviewed regularly.

As noted above, a surprisingly common mistake is the prescription of an anticholinergic drug for a person who is also taking a cholinesterase inhibitor (donepezil, rivastigmine or galantamine) to treat dementia.

There is evidence that this practice may have adverse effects on cognition in the longer term (Lu & Tune 2003). In these cases, it is important that the patient’s GP is contacted, as there is no point in prescribing two drugs whose effects cancel each other out! The GP, and/or memory service psychiatrist, needs to make a decision with the patient and his/her family as to which symptom is the most troublesome (that is, the cognitive problem or the physical symptom such as urinary frequency), stop one of the two drugs, and monitor carefully.

Antihypertensive drugs

Hypertension is an established risk factor for dementia, but there is also evidence that low blood pressure is associated with cognitive decline and dementia (Maules et al 2008). Blood pressure can fall as the course of dementia progresses, due to weight loss and other physiological changes. Antihypertensive drugs can cause postural hypotension which increases the risk of dizziness and falls. In summary, treating hypertension in patients with dementia needs extra care. It is good clinical practice for anyone with hypertension and dementia to have their blood pressure monitored closely, with dose adjustment of antihypertensive agents according to their blood pressure reading.

There are many drugs used to treat hypertension, but common ones are bendroflumethiazide, beta-blockers such as atenolol (and other drugs with names ending in “ol”), the angiotensin-converting enzyme inhibitors (ACEIs) such as lisinopril and ramipril, and other drugs with names ending in “pril”), newer ACEIs such as candesartan, alpha blockers such as doxasosin, and calcium channel blockers such as amiodipine.

Sometimes antihypertensives are added to a patients’ regimen in order to treat apparently treatment-resistant hypertension, when the real problem is simply that the patient is forgetting to take their tablets. When the patient is admitted to hospital or residential care, they collapse with hypotension as they are now taking all their blood pressure lowering medications! So always check with a relative or carer before assuming a drug isn’t working.

Antipsychotic drugs

The potential dangers of using antipsychotic drugs in patients with dementia will be familiar to most readers of this journal, and were highlighted by Professor Banerjee in his report for the Department of Health, Time for action (2009), which summarised the results of a meta-analysis of trials of antipsychotic drugs in dementia. Banerjee’s report said that treating 1000 patients with behavioural and psychological symptoms of dementia with an antipsychotic drug for 12 weeks would result in:

• 91–200 patients showing a clinically significant improvement in these symptoms
• an additional 10 deaths
• an additional 18 cerebrovascular events
• an additional 58–94 patients with gait disturbance.

These drugs can be very helpful for a small number of people with dementia who have co-morbid psychotic disorders such as schizophrenia, in people with chorea due to Huntington’s disease, and in people with severe psychotic symptoms and other distressing behaviour disorders. But because of the risks of these medications, their use should be initiated and monitored by specialist dementia services. The common practice in the past of the almost routine prescription of these medications in care homes and for people with delirium in general hospital is no longer acceptable.

If you are asked about the use of these drugs by GPs or general hospital doctors, the simple advice is:
An alert practitioner can avert a serious complication by spotting a potential problem and suggesting a review of medication by the GP or pharmacist.

do NOT start antipsychotic drugs in people with dementia if the doctor can possibly avoid it, and if she is considering use of these drugs, the patient should be referred to specialist dementia services.

Staff in care homes and on general hospital wards should be encouraged to follow the guidance in Optimising treatment and care for people with behaviour and psychological symptoms of dementia (Alzheimer’s Society 2011) which documents a stepwise approach of prevention, simple first line interventions, ongoing assessment and watchful waiting, before considering more specialist interventions and antipsychotics. A recent briefing document written by an expert reference group of the British Psychological Society (2013) describes an approach based on a similar model of stepped care, with a thorough discussion of the evidence-based alternatives to antipsychotic medication. Both documents outline a person-centred approach, encouraging carers to ask the simple but crucial question “Why is the behaviour occurring?” before deciding on the treatment plan.

As 21 per cent of care home residents in England and Wales may be on antipsychotic drugs (Shah et al 2012) it is likely you will come across patients with dementia on antipsychotic medication in your daily practice. It is worth checking whether they are being monitored and reviewed according to good practice (Barnes et al 2012). Here are some questions it might be worth asking the care staff:

• Have the risks and benefits of the drug been discussed with the patient (if he or she has the capacity to be involved in the decision), relatives and/or care staff?
• Are the carers aware of the target symptom(s) for treatment?
• Is there a system in place for monitoring response to the target symptom? (for example using simple charts completed by nursing staff or carer)
• Is there a system in place to monitor and record side effects closely? (sedation, low blood pressure, blood sugar, muscle stiffness, tremor, mobility problems)
• Is there someone (preferably from the local specialist dementia service) responsible for monitoring the drug?
• Is the patient known to the local memory service or older adult CMHT?

If the answer to any of these questions is “no”, you might suggest to the care home manager that a GP reviews the patient and either considers tailing off the antipsychotic drug or makes an onward referral to a specialist dementia service.

Drugs causing falls

A recent systematic review of drugs associated with falls in nursing home residents showed that the use of more than one type of medication, antidepressant drugs and anti-anxiety drugs were all associated with an increased risk of falls (Sterke et al 2008). The older tricyclic antidepressant and antihypertensive drugs can cause falls by leading to postural drops in blood pressure. The newer (SSRI) antidepressants and mood stabilizers such as sodium valproate can be associated with a risk of falls as they can cause Parkinsonian symptoms and postural instability. Carbamazepine, sometimes used for the treatment of mood disorders, epilepsy and behavioural disorders, can cause problems with balance (ataxia).

Summary

This article is no more than a very brief summary of some of the drugs which commonly cause troublesome side effects in dementia. But I hope the paper will encourage staff to consider medication as a potential cause of an increased level of confusion in someone with dementia, and to increase your confidence in asking questions of carers and doctors about potentially risky prescribing practices which you come across. Medication is sometimes prescribed because the prescriber has not thought through the problem which is being presented to him or her. Asking some questions to open up a creative and person-centred approach is part of good basic dementia care, and can lead to better care and fewer prescriptions of unnecessary drugs for people with dementia.

References


