

16 Pharmacological treatments

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Depressive illness • Mania • Schizophrenia • Sleep disorders •
Rapid tranquillisation • Conclusion*

Pharmacokinetics

The pharmacological treatment of the elderly differs from that of younger patients, mainly because of altered pharmacokinetics and the higher proportion of patients with organic disorders. Pharmacokinetics describes the way in which drugs reach their target tissues.

Absorption

Absorption is not grossly affected in the elderly although there are reductions in gastric pH, area of absorptive surface, mesenteric blood flow and transport enzymes (Lader, 1994).

Distribution

Changes in distribution in the elderly include: reduction in lean body mass and increase in body fat (fat acts as a reservoir for psychotropics, increasing their half-lives); reduction in body water (increased concentration of water soluble compounds, e.g. alcohol); reduction in plasma proteins such as albumin (increased levels of free drug); and reduction in cerebral blood flow.

Metabolism

This is reduced and is particularly important with polypharmacy. Liver blood flow decreases (by up to a third in over 65-year-olds (Bender, 1965)) and liver microsomes are less efficient (with some exceptions).

Excretion

Excretion is decreased. Glomerular filtration reduces by up to a half by the age of 70 (Papper, 1978). Plasma creatinine may be unreliable, so creatinine clearance is the preferred test of renal function.

Pharmacodynamics

Pharmacodynamics describes the effects of drugs on body tissues. It is more difficult to study and is less well understood than pharmacokinetics. However, knowledge is increasing with the use of new technology such as positron emission tomography (see Chapter 12). Results about receptor numbers and characteristics do not always explain what is seen clinically, and these discrepancies may result from more complex changes (e.g. post-synaptic changes or receptor-effector system coupling).

Narcotics and sedative hypnotics

Generally there is an increased sensitivity to sedatives in the elderly. Fewer available receptors may mean that the same drug concentration results in increased receptor occupancy (Lader, 1994). The elderly are less sensitive to some drugs (e.g. isoprenaline).

Dopaminergic system

There are less dopaminergic cells in the basal ganglia. This contributes to an increased sensitivity to the extrapyramidal side-effects (excluding dystonias) of neuroleptics.

Cholinergic system

There are less cholinergic receptors. A cholinergic deficit is well established in Alzheimer's disease, and a number of medications (donepezil, rivastigmine, metritonate) have been developed to increase the availability of acetylcholine.

Noradrenergic system

Noradrenaline levels decrease with age. This may make the elderly more vulnerable to affective disorders.

Practical implications of these changes

'Start low, go slow' – changes in pharmacokinetics and pharmacodynamics mean that the elderly are generally two to three times more sensitive to many medications, including psychotropic drugs. It is important to reduce the dose and frequency of medications because a longer half-life means that it takes longer to reach a steady state.

Dementia

Pharmacological therapy is aimed at two areas in dementia: cognitive deficits and non-cognitive features (psychiatric symptoms and behavioural disturbances).

Cognitive deficits

Alzheimer's disease

Donepezil and rivastigmine, acetylcholinesterase inhibitors, are the first drugs aimed at improving cognitive function to be licensed in the UK, and others are likely to follow. Most medications targeted at cognitive function are based on the cholinergic hypothesis, with the common goal of increasing available acetylcholine. Three approaches have been described as:

- (a) Loading with acetylcholine precursors.
- (b) Cholinesterase inhibitors (i.e. inhibiting the enzyme which degrades acetylcholine).
- (c) Direct stimulation of the receptors.

Studies with precursors such as lethicin were initially successful but inconsistent results and a lack of efficacy have followed.

Anticholinesterases have been the most studied group of drugs with the most promising results. Donepezil appears to be less hepatotoxic and better tolerated than its predecessor tetrahydroaminoacridine. Trials have shown the drug to lead to an approximate six months delay in the course of the dementia, more evidence is required (Kelly *et al*, 1997).

Co-dergocrine mesylate is regularly prescribed in continental Europe and has been shown, in double-blind trials, to be effective at reducing symptoms of anxiety, depression, 'confusion' and 'impaired social care' (effects which can be of practical benefit to patients and carers). There is little evidence that it improves cognitive function. Negative results have been found in trials with thiamine and piracetam. Improvements in cognition have been described with desferrioxamine, indomethacin and N-acetylcarnitine (Burns, 1992).

Vascular dementia

There is some evidence that treating risk factors for stroke improves cognitive impairment. Reducing systolic blood pressure to between 135 and 150 mmHg improved cognitive function, but further reduction led to a deterioration (Meyer *et al*, 1986). Stopping smoking in normotensive patients with multi-infarct dementia was also beneficial. Prescribing 325 mg of aspirin per day can produce an improvement in cognitive function

and cerebral perfusion (Meyer *et al*, 1989). Low dose aspirin (75 mg per day) reduces the risk of stroke and death in patients with pre-existing vascular disease (SALT Collaborative Group, 1991).

Dementia with Lewy bodies

The clinical features of dementia with Lewy bodies include episodic confusion, hallucinations and cognitive deterioration. Patients with dementia with Lewy bodies may have profound cholinergic losses. McKeith *et al* (1992) reported high mortality when prescribed neuroleptics. Furthermore, patients with Alzheimer's disease who respond to tetrahydroaminoacridine have Lewy bodies at post-mortem (Levy, 1993). In view of the fluctuation in cognitive state there are difficulties in attributing improvement to specific medication. Behavioural disturbances can be controlled with chlormethiazole and benzodiazepines.

Non-cognitive features

This term is generally applied to psychiatric symptoms and behavioural disturbances (for a review see Burns, 1993) (see Chapter 6). It is important to define accurately what features are being targeted.

Neuroleptics

Neuroleptics are moderately effective at reducing agitation and aggression. Schneider *et al* (1992) in a meta-analysis, found that 18% of patients with dementia and agitation may benefit from neuroleptics. Individual studies showed no significant change, but together there was a small effect in favour of neuroleptics. Also behaviour deteriorated when neuroleptics were stopped. There is no established difference between thioridazine and haloperidol. Lower doses are required than for treating psychoses in younger patients. In fact very low doses, such as 5 mg of thioridazine, or 0.125 mg of haloperidol, may be effective. There is a concern that the anticholinergic effects of neuroleptics may contribute to cognitive decline in some patients with dementia.

Choice of neuroleptic

This depends upon individual preference and experience. Thioridazine is often prescribed but has marked anticholinergic effects. Haloperidol is another common choice but can cause extrapyramidal signs and symptoms. Sulpiride is useful when avoiding parkinsonian side-effects. Chlorpromazine is not recommended because of hypotension, and promazine may be too weak. Regarding the newer agents, there are good theoretical reasons why clozapine may benefit patients with dementia

with Lewy bodies. Risperidone and olanzapine may also be useful because of their side-effect profiles. Both clozapine and risperidone have been shown to be reasonably well tolerated and efficacious in psychosis in the elderly, and in the psychosis of Parkinson's disease (Kumar, 1997). The newer neuroleptics tend to be more expensive. Depot neuroleptics have been tried with some success and have the obvious advantage of improved compliance.

Other medications

A number of other medications have been used to control behavioural symptoms in dementia (Schneider & Sobin, 1994) (Box 16.1).

Box 16.1 Medications (other than neuroleptics) used for behaviour symptoms in dementia

Antidepressants have consistently been shown to be effective in alleviating affective symptoms in dementia. Monoamine oxidase inhibitors (type A and type B) are successful in improving memory and concentration, possibly by alleviating depressive symptoms. Selective serotonin reuptake inhibitors reduce aggression and irritability. They may be particularly effective in vascular dementia

Lithium has been shown in a few reports to control agitation, often dramatically, but the side-effect profile of the drug and the proven benefit of other drugs make it unlikely to become an agent of choice

Beta-blockers have been used in younger patients to control aggression, usually after brain damage

Carbamazepine has been reported to control aggression, although there has been no placebo controlled study that has shown any benefit

Benzodiazepines have a significant propensity to cause confusional states in the elderly, so their use is limited. However, from three recent studies, two have shown benzodiazepines to be more efficacious than thioridazine or haloperidol

Psychostimulants such as methylphenidate have only been shown to benefit patients in open trials. It is likely with the invention of newer drugs that these older agents will no longer be used

*Buspiron*e have been reported, in two out of three cases of dementia, to have shown an improvement

Trazodone has been highlighted by the attention given to the serotonergic deficit in Alzheimer's disease. It has been shown to help with aggression, not just in dementia

Delirium

Delirium is caused by physical disease, and treatment is aimed at the underlying condition such as a urinary tract infection (see Chapter 3). Appropriate nursing and medical care are important, and include reassurance, the presence of familiar people and a quiet, well lit environment. Prominent behavioural disturbance may be managed with psychotropic medication. Haloperidol and thioridazine remain the drugs of choice. Conditions such as delirium tremens require detoxification regimes along conventional lines, with a corresponding dose reduction of around a half. Rapid tranquillisation may be required for serious behavioural problems which put the patient or others at risk.

Depressive illness

Antidepressants

Antidepressants can be classified into:

- (a) Tricyclics: subdivided into traditional agents (amitriptyline, imipramine, dothiepin, doxepin, clomipramine, nortriptyline) and newer agents (lofepramine).
- (b) Atypical antidepressants (trazodone, mianserin).
- (c) The selective serotonin reuptake inhibitors (SSRIs) (fluoxetine, fluvoxamine, paroxetine, sertraline).
- (d) Monoamine oxidase inhibitors (MAOIs), subdivided into traditional agents (phenelzine, tranylcypromine) and the newer reversible inhibitors of monoamine oxidase A enzyme (RIMA agents) (moclobemide).

Choice of antidepressant

Efficacy

The recovery rate of adult patients with depressive illness treated with an antidepressant is similar at any age, around 60–70%. There is no evidence that any drug or class of drugs is superior in terms of response rate to another (Katona, 1993). Some concern has been expressed that SSRIs may be less effective in severe depression, but there is no evidence supporting this in older patients.

Safety

There is little doubt that the newer agents are safer than traditional tricyclics in over dosage. However, the use of the newer medications should not lead to a complacent approach to managing suicide risk, which is high in the elderly.

Contraindications

Contraindications for tricyclics include a history of acute (but not necessarily chronic) glaucoma; prostatism; a myocardial infarct within the preceding three months; a tachy- or brady-arrhythmia; poorly controlled (but not necessarily stable) heart failure; or a clinically relevant cardiac conduction disorder (for example bi- or tri-fascicular block). Severe renal or hepatic insufficiency are contraindications to using an SSRI.

Side-effects

There are important differences in side-effects (Table 16.1). For the traditional tricyclics, anticholinergic effects are prominent and frequently troublesome, but are less marked with lofepramine. Postural hypotension is arguably the most troublesome and dangerous side-effect of the tricyclics. They commonly cause sedation, as does trazodone. Tricyclics may provoke delirium, especially in the setting of acute physical illness or dementia; amitriptyline is the worst offender.

With relatively minor variations, all the SSRIs cause nausea (5–15%), diarrhoea (10%), insomnia (5–15%), agitation or anxiety (2–15%), headache and weight loss. Many of these are transient and early phenomena. Also, dosages of SSRIs were originally too high, possibly exaggerating this profile. However, studies in the elderly have not found a lower rate of side-effects in SSRIs than the older tricyclics, but a different pattern (Katona, 1993). Sedation is least likely with fluoxetine and more likely with paroxetine, while fluoxetine may lead to anxiety and agitation. Fluvoxamine causes nausea, but has a lower incidence of insomnia. Paroxetine has a specific indication for the treatment of anxiety in association with depression.

Table 16.1 Side-effects of antidepressants (numbered 0 to 5 by increasing intensity of effect)

	Anticholinergic effects	Orthostatic effects	Sedation
Amitriptyline	5	5	5
Imipramine	4	5	2
Dothiepin	4	3	3
Mianserin	0/1	0/1	4
Lofepramine	1/2	1	1
Trazodone	0	1	3
Fluvoxamine	0/1	0	0
Sertraline	0/1	0	0
Fluoxetine	0/1	0	0
Paroxetine	0/1	0	1/2
Moclobemide	1	1	1/2

Moclobemide appears to be of equal efficacy to tricyclics and SSRIs in late-life depression. It has a low risk of the 'cheese effect', a short duration of action and half-life and is safe and seems well tolerated. Adverse effects include agitation, anxiety and insomnia.

Interactions

All antidepressants may antagonise anticonvulsant medication. Concomitant antipsychotics lead to increased levels of tricyclic drugs, and the plasma concentration of haloperidol may be increased by fluoxetine. There is an increased risk of lithium central nervous system toxicity if combined with SSRIs. Two SSRIs, fluvoxamine and paroxetine, may enhance the effects of warfarin. Plasma concentrations of lipophilic beta-blockers may be increased by fluvoxamine. Imipramine and possibly other tricyclics may lead to increased levels of diltiazem and verapamil. Anxiolytics and hypnotics may enhance the sedative effects of tricyclics. Cimetidine may raise plasma levels of moclobemide and the tricyclics. Although the risk of a hypertensive crisis is low, drugs with sympathomimetic effect and opiate-based drugs should be avoided with moclobemide.

If changing to a MAOI from fluoxetine five weeks must elapse, two weeks for paroxetine and a week for sertraline. Mixing an SSRI with a MAOI may cause the serotonergic syndrome characterised by excitement, confusion, rigidity, tremor, hyperthermia, tachycardia, hypotension and convulsions. Lastly, although rare, there have been a number of reports of SSRIs leading to, or exacerbating, parkinsonism or akathisia.

Compliance

Lack of compliance correlates with the number of other drugs prescribed and polypharmacy is frequent among older depressed patients. Memory is less efficient in depression and may impair compliance. The once daily dosage regime of most of the SSRIs is an advantage over tricyclics.

Cost

Costs are generally much higher for the newer medications. While arguments have been put forward that cost-benefit analysis favours the newer agents because of increased compliance, there is no relevant data with older, depressed patients.

Comorbidity

Tricyclics are less well tolerated by elderly medically ill patients (Koenig *et al*, 1989) than SSRIs (Evans, 1993). There is little evidence about the best way of treating depression comorbid with dementia. In a double-

blind placebo controlled trial, using imipramine, Reifler *et al* (1989) found a significant improvement in mood in an elderly group of patients with Alzheimer's disease and depression. The mean dose was 80 mg daily, but it was noted that cognitive function remained stable only within a fairly narrow dose range. Other agents have been inadequately assessed in dementia. In one small open study, patients reported improvement in depression comorbid with dementia using 150–225 mg of moclobemide (Postma & Vranesic, 1985).

Treatment-resistant depression

This is defined as failure to respond to eight weeks of an adequate single agent therapy. There has been considerable interest in augmentation regimes, but little data about older depressives. Finch & Katona (1989) reported improvement and good tolerance with lithium augmentation in two-thirds of a small sample of patients resistant to either first line treatment or electroconvulsive therapy. Van Marwijk *et al* (1990) reported a similar improvement rate in a larger series, but encountered more side-effects, especially of lithium toxicity. Seth *et al* (1992), in an open study of eight refractory, mainly elderly, cases, reported improvement in all when given nortriptyline plus an SSRI. However, this combination may cause toxic plasma levels of the tricyclic.

Continuation therapy

Response to treatment often occurs later than in younger patients (Flint, 1992; National Institute of Health Consensus Development Panel on Depression in Late Life, 1992). A minimum trial is six weeks, although a significant minority of patients respond up to eight or nine weeks after starting therapy (NIH Consensus Development Panel on Depression in Late Life, 1992). The standard six months of continuation therapy after resolution of depressive symptoms is probably too short for elderly patients (Flint, 1992); a year is more realistic. The main risk period for recurrence and relapse is the first two years (Flint, 1992).

Prophylaxis

Some clinicians argue for the long-term treatment of all patients who have had a major depression in later life. Few elderly patients remain symptom free during extended periods of follow-up (Baldwin & Jolley, 1986) and even one further episode of depressive illness occurring to an older person is time lost from an already short life expectancy. However, this is controversial.

Clinicians are faced with the choice of either maintaining patients on antidepressants indefinitely, or attempting to wean them off after about

a year. As a guide, those patients who do best are characterised by having good health and an uncomplicated recovery from depression (Baldwin & Jolley, 1986). Both lithium (Abou-Saleh & Coppen, 1983) and dothiepin (Old Age Depression Interest Group, 1993) are reported to significantly reduce relapse rates in the medium term. For antidepressants the prophylactic dose should be as close as possible to the therapeutic one (Reynolds *et al*, 1993). However, weight gain associated with long-term tricyclic usage may be problematic; more work is needed on the role of the newer agents in prophylaxis.

Which antidepressant?

A meta-analysis of the efficacy and acceptability of SSRIs (Song *et al*, 1993) concluded that their routine use as first line agents in depressive illness was unwarranted. Tricyclic antidepressants can be recommended as a well-tryed, effective and cheap treatment for depression in old age, provided the patient has no contraindications and is tolerant of side-effects. In practice, the newer agents constitute an important advance in the treatment of those elderly patients, not inconsiderable in number, who do not fulfil these conditions, especially the physically frail.

Mania

Acute treatment

Neuroleptic drugs are the mainstay of treatment in the acute phase. Haloperidol, which has an extremely wide dose range, is popular. Drugs with lower potency such as thioridazine or promazine can be prescribed to reduce the risk of extrapyramidal side-effects. Practical problems include falls caused by a mixture of parkinsonism and sedation in an overactive patient and anticholinergic delirium caused by prescribing neuroleptics and anticholinergic agents (benzhexol, orphenadrine, benztropine). Mania may then be erroneously diagnosed.

Lithium is an option for the less disturbed patient but serum levels should be lower than for younger patients, on average 0.4–0.6 mmol/l (Shulman *et al*, 1992). There is a little evidence that valproate or carbamazepine may be effective, but much further work is required, including research to produce definitive guidelines for lithium treatment in older people (Shulman *et al*, 1992).

Prophylaxis

Lithium is also used for prophylaxis. As with acute treatment, dosages will generally be half that of younger adults. Lithium toxicity is a risk and is associated as much with poor monitoring as with the presence of organic

Box 16.2 Key learning points

Non-cognitive features in dementia are amenable to treatment with neuroleptics and non-neuroleptic drugs
In vascular dementia, removing risk factors and aspirin improve cognitive function
Patients with Lewy body dementia are particularly sensitive to neuroleptics
Remember inter-individual variation in drugs metabolism is much greater in elderly than younger patients
All antidepressant and antipsychotic agents are equally effective so prescribing decisions are largely based on side-effect profiles
The principles of prescribing to older patients are not different but are complicated by issues of comorbidity, poorer compliance and higher risk of side-effects
Suicide risk is not dealt with simply by prescribing a 'safer' drug

(not infrequently cerebral) pathology. Regular checks of renal and thyroid function and concurrent medication, particularly the inadvertent prescription of a diuretic, are essential.

Schizophrenia

Acute treatment

The principles of treating schizophrenia are similar at any age. Ageing results in reduced levels of dopamine and tyrosine hydroxylase, as well as lower counts of dopamine-rich neurons in the midbrain (Morgan *et al*, 1987). This raises susceptibility to neuroleptic-induced extrapyramidal symptoms.

Antipsychotic drugs can be classified into:

- (a) Phenothiazines, aminoalkyl compounds (chlorpromazine), piperazines (trifluoperazine) and piperidines (thioridazine).
- (b) Thioxanthenes (flupenthixol).
- (c) Butyrophenones (haloperidol and pimozide, a butyrophenone derivative).
- (d) Dibenzapines (clozapine).
- (e) Other newer agents: sulpiride (a substituted 0-anisomide), risperidone (a benzisoxazole), sertindole and olanzapine.

The first three groups have similar pharmacokinetics and are metabolised in the liver and excreted by the kidney. Their elimination half-lives are in the order of 10–30 hours, although pimozide is much

longer and clozapine and sulpiride somewhat shorter (5–15 hours). Clinical experience with clozapine, risperidone and olanzapine in the elderly is limited. However, the fact that these newer compounds may cause less extrapyramidal symptoms or tardive dyskinesia is of great significance to older patients.

Choice of neuroleptic

Effectiveness

All current antipsychotics are effective in late-onset schizophrenia.

Contraindications

Caution is necessary in patients with a history of myocardial disease (in particular with pimozide), hepatic disorder, prostatism and Parkinson's disease, but apart from agranulocytosis most contraindications are relative.

Side-effects

Choosing a neuroleptic depends largely on the anticipated side-effects. These are best understood by reference to neurotransmitter systems (Table 16.2):

- (a) Antidopaminergic effects cause parkinsonism and akathisia. The former is a particular hazard in elderly patients. Lowering the dose, if practicable, is the first move; otherwise changing to a lower potency neuroleptic may help. Routine prescribing of anticholinergic agents to suppress such symptoms is not recommended as it may increase the risk of tardive dyskinesia in older patients (World Health Organization, 1990). Age is a major risk factor for tardive dyskinesia so that drug treatment should be reviewed regularly. Drug holidays can make the problem worse. Treatment of tardive dyskinesia is difficult, but sulpiride benefits some patients (Schwartz *et al*, 1990).
- (b) Anticholinergic effects cause similar problems to those of the tricyclic antidepressants.
- (c) Antihistaminic effects may lead to oversedation, especially when combined with other centrally active drugs, including antidepressants and hypnotics. Weight gain may occur with long-term use.
- (d) Antiadrenergic effects may cause dangerous postural hypotension. Chlorpromazine is the worst culprit, it is not a drug of first choice for the frail elderly.

In addition, there are a number of idiosyncratic reactions of which the most important are the neuroleptic malignant syndrome, adverse liver effects (which are not confined to chlorpromazine) and agranulocytosis.

Table 16.2 Side-effects of antipsychotic drugs (+++ marked, ++ moderate, + mild, 0 none)

	Anti-dopaminergic	Anti-muscarinic	Anti-histaminic	Anti-alpha-adrenergic
Chlorpromazine	++	+	++	+++
Thioridazine	+	++	++	++
Perphenazine	++	+	++	+
Trifluoperazine	+++	+	+	+
Haloperidol	+++	+	+	+
Pimozide	++	+	+	+
Sulpiride	+	+	0	0
Clozapine	+	+++	++	+
Promazine	+	+	+++	+
Risperidone	+++	0	++	+
Olanzapine	++	+++	++	+

Long-term use is associated with corneal particulate material which could carelessly be attributed to cataract in the elderly.

Interactions

Interactions which alter plasma antipsychotic levels may occur with: lithium, phenobarbitol, carbamazepine, phenyldantoin, cimetidine, propranolol and antidepressant drugs. Cost is a major issue with the newer agents such as risperidone and clozapine. Many clinicians have locally produced protocols for their use.

Treatment-resistant schizophrenia

Clozapine is reserved for refractory schizophrenia and is not contraindicated in older patients, although dosages are typically half that of younger adults, and hypotension can be problematic. Surprisingly, age has not been identified as a risk factor for agranulocytosis (Ball, 1992).

Maintenance therapy

Post's seminal work (1966) suggested that only a third of patients with late paraphrenia, followed over 14 to 21 months, remained symptom free. Regrettably, the advent of the newer antipsychotics and specialised services have not convincingly altered this prognosis (Howard & Levy, 1992). They suggested that compliance, and therefore outcome, may be improved by the use of depot neuroleptics and the deployment of community psychiatric nurses. All the current depot neuroleptics have been used in

Box 16.3 Good practice points

'Start low, go slow' when prescribing to elderly patients – to start in very low doses, syrups are sometimes available
Exclude Lewy body dementia, as far as possible, before prescribing neuroleptics to a patient with dementia
Examine a patient with dementia to exclude vascular disease – treatment of risk factors and/or aspirin may help
Gain experience with prescribing at least one of the tricyclics and one of the newer agents; become familiar with their dose ranges and side-effect profiles
Take a good drug and alcohol history – polypharmacy accounts for much iatrogenic morbidity
A therapeutic antidepressant trial in older patients should last at least six to eight weeks
A reasonable period for continuation treatment is 12 months.
Lithium dose ranges are lower in the elderly, generally 0.4–0.6 mol/l

elderly patients and there is little to suggest that one is superior to another, or that any is less likely to precipitate parkinsonism. Dosages will generally be half that of younger adults. Parkinsonism may occur quite suddenly after weeks of treatment and may take months to wear off, or may expose latent Parkinson's disease. Many clinicians avoid the longer acting depot agents (haloperidol decanoate, pipothiazine palmitate) in elderly patients.

Sleep disorders

Disturbed sleep in the elderly is a common complaint and often results in a request for sedative medication. It is important to recognise that sleep disturbances are very often secondary to a physical disorder (obvious symptomatic culprits being pain, dysuria and nocturia) or a psychiatric disturbance (such as depression or delirium). Attention to the primary problem often leads to restoration of the normal sleep pattern. It is important to be aware of iatrogenic causes of sleep disturbance, notably steroids, theophyllines and psychoactive medication, as well as alcohol. Specific sleep disturbances of snoring, sleep apnoea and neuromuscular disorders such as akathisia may be responsible.

Specific agents to treat sleep disorders include chlormethiazole, which is effective and widely used; the only side-effect being nasal stuffiness. Benzodiazepines are still the most commonly used drugs for sleep disturbance and the shorter acting the drug the better, temazepam being the best. Chlordiazepoxide and diazepam are longer acting and newer

Table 16.3 Medications prescribed for sleep disorders

	Starting dose	Maximum dose	Side-effects
Chloral hydrate	1–2 tabs (as 414 mg per tablet) nocte	Up to 5	Gastric irritation
Triclofos sodium	1–2g nocte	Same	Fewer gastrointestinal effects
Chlormethiazole	1–2 caps nocte	Up to 3	Nasal congestion
Zopiclone	1/2 tab nocte	Up to 2 tabs	New drug, caution in elderly
Temazepam	5–15 mg nocte	Up to 30 mg	As with other benzodiazepines

agents such as zopiclone require more research. Medications are summarised in Table 16.3.

Rapid tranquillisation

The elderly, in common with their younger counterparts, can become aggressive and agitated requiring emergency sedation. One has to exercise more caution with sedation as coexisting physical illness may interact detrimentally with prescribed medication. For example, heavy sedation in a person with a confusional state secondary to cerebral hypoxia could be fatal. Bearing this in mind, the principles of rapid tranquillisation are the same as in younger patients, although doses need adjusting accordingly. Intravenous treatment is rarely required and intramuscular injections usually suffice. Prolonged and sustained aggression is not as often a management problem and hence long-term treatment is rarely necessary. Haloperidol is particularly effective at controlling aggression

Box 16.4 Controversial issues

Donepezil may be helpful in alleviating the cognitive deficit in Alzheimer's disease. A careful diagnostic assessment and follow-up is necessary

The newer antidepressants are regarded by some, but by no means all, old age psychiatrists as drugs of first choice when prescribing to elderly depressives

There is a trend to life-long maintenance therapy in major depression of later life, but not all agree with this

and a suggested regime for management is: (a) haloperidol 1 mg orally every hour (1–5 mg intramuscularly in an emergency); (b) continue with 0.5 to 2.0 mg, eight hourly; when settled for 48 hours, reduce dose by 25%, continue with this until signs of aggression 'break through'; (d) aim to discontinue drug after a maximum of four weeks.

Conclusion

Care must be exercised when prescribing for the elderly. Changes in pharmacokinetics and pharmacodynamics mean that doses often need to be reduced and side-effects are more common. Good prescribing behaviour is summed up by the adage 'start low, go slow'. However, consideration must be taken not to treat mental illnesses in the elderly inadequately. In recent years, new treatments have become available for dementia, depression and schizophrenia. More studies, in the elderly, will be necessary to gain the maximum benefits for patients.

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