iSOLVE Integrated SOLutions for sustainable fall preVEntion

MEDICATIONS AND FALL PREVENTION

ANTIDEPRESSANTS

Tricyclic, TCA (*amitriptyline, dothiepin, doxepin, imipramine, nortriptyline*)

Tetracyclic (*mianserin, mirtazapine*)

Selective serotonin reuptake inhibitor, SSRI (*citalopram, escitalopram, fluoxetine, fluvoxamine, paroxetine, sertraline*)

Serotonin and noradrenaline reuptake inhibitor, SNRI (*desvenlafaxine, duloxetine, venlafaxine*)

Adverse effects: Drowsiness (TCA, Tetracyclic, SNRI) Anticholinergic (TCA, mianserin, SNRI) Orthostatic hypotension (TCA, Tetracyclic, SNRI) Impaired sleep quality causing daytime drowsiness, nocturia (SSRI) Insomnia (SSRI, SNRI) Agitation (SSRI)

Practice points:

- Non-pharmacological treatments first (e.g. exercise, cognitive behavioural therapy, supportive counselling).
- Use a low dose and increase slowly.
- Taper and withdraw gradually to avoid withdrawal symptoms.

HYPNOTICS OR SEDATIVES

Benzodiazepines, BZD: short-acting (*oxazepam, temazepam*), medium-acting (*lorazepam*), long-acting (*diazepam, nitrazepam*)

Z class (*zolpidem, zopiclone*)

Adverse effects: Drowsiness, oversedation, impaired balance and coordination, impaired alertness

Practice points:

- Treat underlying condition disrupting sleep.
- Non-pharmacological treatments first (e.g. behavioural techniques, relaxation techniques, sleep hygiene principles, environmental modifications).
- If medication is required for insomnia, consider melatonin or a short-acting BZD (e.g. temazepam). If BZD is required, use lowest dose for the shortest time possible, and agree to a time limit with the patient.
- For treatment of anxiety, consider an SSRI or buspirone instead of BZD.
- Permanent withdrawal may be difficult and patients may need post-withdrawal support.
- Review additive sedation effects from other medications (e.g. psychotropics, opioids, antiepileptics, sedating antihistamines).

ANTIPSYCHOTICS

Atypical, second generation (*quetiapine, risperidone, olanzapine, clozapine, aripriprazole, amisulpride, ziprasidone*)

Typical, first generation (*haloperidol, chlorpromazine, trifluoperazine, pericyazine*)

Adverse effects: Drowsiness, extrapyramidal side effects (less with atypical), anticholinergic, orthostatic hypotension

Practice points:

- Non-pharmacological treatments first (e.g. behavioural therapies, changes to the environment).
- If medication is required, atypical is preferred.
- Use a low dose and increase slowly if required.
- Regularly review treatment (3 monthly).
- Taper and withdraw gradually to avoid rapid relapse and withdrawal symptoms.

ANTICHOLINERGIC MEDICATIONS

Adverse effects: Dizziness, blurred vision, urinary retention/incontinence, confusion, cognitive impairment

Practice points:

- Avoid medications with anticholinergic activity and withdraw those not indicated.
- If indicated, choose a medication with lower anticholinergic activity and/or reduce other anticholinergic medications.
- Avoid prescribing anticholinergic medications to compensate for the cholinergic effects of anticholinesterases (donepezil, galantamine, rivastigmine, pyridostigmine).

Depression: SSRIs and SNRIs have less anticholinergic effects than TCAs. Nortriptyline is less likely to cause hypotension, sedation and anticholinergic effects compared to other TCAs.

Urinary incontinence: Non-pharmacological treatments first (e.g. lifestyle, physical and/or behavioural therapies). Review medications as a cause of incontinence. Darifenacin and solifenacin may be less likely to cause cognitive impairment or dry mouth.

Antihistamines: Intranasal corticosteroids for allergic rhinitis instead of antihistamines. Less sedating antihistamines (less anticholinergic effects) such as loratadine or fexofenadine for urticaria. Also review use of sedating antihistamines for sleep.

Pain: Non-pharmacological treatment or paracetamol before opioids, which have anticholinergic effects. For neuropathic pain, consider gabapentin or pregabalin instead of amitriptyline.

Psychotic disorders: Risperidone or haloperidol (short-term use only) have lower anticholinergic effects than chlorpromazine, clozapine and trifluoperazine.

COPD: If prescribing anticholinergics, consider ipratropium before tiotropium as it has less anticholinergic effects (avoid prescribing both). Consider long-acting beta2 agonists with corticosteroids to reduce exacerbations.

Parkinson's disease: Most Parkinson's medications have anticholinergic effects. Use a low dose and increase slowly. Advise falls risk and fall prevention strategy.

ANALGESICS

Opioids (*codeine, morphine, tramadol, oxycodone, hydromorphone, methadone, fentanyl, tapentadol, dextropropoxyphene*)

Adverse effects: Drowsiness, impaired coordination, cognitive impairment, dizziness, urinary retention, orthostatic hypotension

Practice points:

- Opioid dose sensitivity increases progressively with age, hence, an increased risk of adverse effects.
- Use a low dose and increase slowly to effect.
- Patients may need support during and after withdrawal to alleviate drug dependence.

OTHER MEDICATIONS ASSOCIATED WITH FALLS

Hypoglycaemic medications: Relaxed glycaemic control is reasonable in frail elderly to reduce risk of hypoglycaemic events.

Diuretics: Review potential for urge incontinence contributing to falls.

Digoxin: Monitor side effects (drowsiness, dizziness, blurred vision) and use lower dose.

Anticoagulants: Review risk of bleeding (e.g. history of bleeding, falls/ injury, NSAIDs use) in patients with falls risk.

COMMON MEDICATIONS CAUSING ORTHOSTATIC HYPOTENSION

Cardiovascular medications: beta blockers, nitrates, potassium-sparing diuretics *(amiloride)*, alpha-blockers *(prazosin, terazosin)*
Antidepressants: TCAs, tetracyclics, SNRIs
Antipsychotics: See antipsychotics
Opioids: See Opioid
Parkinson's medications: levodopa, dopamine agonists, MAOI-B inhibitors, amantadine, entacarpone

Practice points:

- Advise patient of orthostatic hypotension, risk of falling and management strategies.
- Avoid prazosin if possible and consider tamsulosin if needed for BPH symptoms.

COMMON MEDICATIONS CAUSING HYPOTENSION

Cardiovascular medications: ACE-inhibitors, beta blockers, calcium channel blockers, thiazides, ARBs (sartans)

Practice points:

- To reduce hypotension at initiation of therapy (first 45 days), start at a lower dose.
- Review dose and monitor for side effects when continuing therapy.
- Consider splitting dose or changing administration times for antihypertensives.

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