3. Hot Topics: Further reading and deprescribing

Deprescribing is a term that is used to refer to *the stopping or reduction in dose of prescribed medications.* It should be undertaken in the context of reviews for appropriate polypharmacy and should not be the main purpose for the review. Any decision about stopping or reducing medication should be done in partnership with the patient as part of joint decision making following the *7- Steps* process

The following hot topics provide further detail regarding common areas that are considered to be potentially problematic.

3.1 Anticholinergics

Why are anticholinergics problematic?

Anticholinergics have long been recognised as causing symptoms such as dry mouth, constipation and urinary retention. Exposure to anticholinergic agents has also been linked to impaired cognition and physical decline. There may also be an association with falls, and increased mortality and cardiovascular events. The table below shows that anticholinergic effects are dose dependent.[14] Of note is, however, that there is significant inter-individual variability regarding anticholinergic dose and manifestations of signs and symptoms of toxicity, which is why it is essential to understand the patient's perspective.

Table 3a: Anticholinergic effects

Atropine dose equivalent	Digestive tract	Urinary tract	Skin	Eyes	Cardiovascular	CNS
10 mg			Red, hot, dry	+++Mydriasis +++Blurred vision	+++ Tachycardia Fast and weak pulse	Ataxia Agitation Delirium Hallucinations Delusions Coma
5 mg	Decreased gut motility	Urinary retention	Hot and dry	++Mydriasis	++ Tachycardia	Restlessness Fatigue Headache
2 mg	++ Mouth dryness			+Mydriasis Blurred vision	+ Tachycardia Palpitations	
1 mg	+ Mouth dryness Thirst			Mydriasis	Tachycardia	
0.5 mg	Mouth dryness		Anhidrosis			

Drugs with anticholinergic properties continue to be commonly prescribed to older people and those with mental illness, who are particularly susceptible to adverse effects, even at therapeutic doses.

Anticholinergic burden principles:

- Anticholinergic effect of individual drugs vary greatly between individual patients
- Anticholinergic effect of multiple drugs are accumulative
- The comparative degree of anticholinergic drugs are based partly on clinical evidence and partly on pharmacological theory

How to assess and reduce the anticholinergic burden

Not all drugs with anticholinergic properties may individually put patients at risk of severe adverse effects, however when used in combination, effects may accumulate. Reducing the anticholinergic burden may result in improvements in short term memory, confusion, behaviours and delirium.

A scale or table that assigns a cumulative anticholinergic score to a patient's prescribed medication can be used to assess *Anticholinergic Burden*. A number of these scoring systems are available. While this approach is valid, the overall aim is to reduce overall anticholinergic exposure as much as possible. The table below is intended to be a guide as to which areas anticholinergic burden is likely to be the highest.

Table 3B Reducing *Anticholinergic Burden*

AVOID IF POSSIBLE Highly anticholinergic drugs	**CAUTION** Drugs with some anticholinergic activity	**Alternatives and general notes**
Antidepressants		
Tricyclic antidepressants	**SSRIs*** **Mirtazapine**	**Venlafaxine**, **trazodone** and **duloxetine** have low anticholinergic activity *SSRIs, **Sertraline** best choice. Avoid **paroxetine**
Antipsychotics		
Fluphenazine **Chlorpromazine** **Clozapine** **Doxepin** **Levomepromazine**	**Olanzapine** **Quetiapine** **Risperidone** **Haloperidol**	**Aripiprazole** is an acceptable choice **Trifluoperazine** and **perphenazine** have unknown activity (conflicting data)
Nausea and vertigo		
	Prochlorperazine	**Metoclopramide** has unknown activity (conflicting data). However, carries specific MHRA caution regarding parkinsonian and cognitive side effects **Domperidone** does not usually penetrate the CNS, but caution is required for QT prolongation Nausea treatments all cause potential problems. Keep courses as short as possible
Urinary antispasmodics		
Oxybutynin **Tolterodine** **Fesoterodine** **Flavoxate** **Darifenacin** **Solifenacin** **Propiverine**	**Dosulepin**	**Mirabegron** has no recorded anticholinergic activity and may be an option It is essential to ensure that medication is effective and stop if not
Sedatives		
		Zolpidem and **zopiclone** no anticholinergic activity but falls risk Avoid sedative antihistamines Non-drug measures are preferred

AVOID IF POSSIBLE Highly anticholinergic drugs	**CAUTION** Drugs with some anticholinergic activity	**Alternatives and general notes**
Antihistamines		
Chlorphenamine **Promethazine** **Hydroxyzine** **Clemastine** **Cyproheptadine**	**Cetirizine** **Loratadine** **Fexofenadine**	Consider locally acting products for hayfever symptoms If taken for seasonal conditions check this is happening
H2-receptor antagonists		
	Ranitidine **Cimetidine**	PPIs have no anticholinergic burden. Prescribe at the lowest dose to control symptoms **Omeprazole** or **pantoprazole** may be preferred over **lansoprazole**. Caution with increased risk of *Clostridium difficile* infection
Drugs used in Parkinson's Disease		
Procyclidine **Trixehiphenidyl** (**benzhexol**) **Orphenadrine**	**Amantadine** **Bromocriptine**	**Entacapone** has small potential for anticholinergic activity **Co-careldopa**, **pramipexole**, **ropinirole** and **selegiline** have no significant anticholinergic activity
Spasticity		
Tizanidine	**Baclofen** **Diazepam** **Methocarbamol**	
Analgesia		
	Opiates	**Paracetamol** and NSAIDs are not thought to have anticholinergic activity G**abapentin** has minimal anticholinergic activity
Others		
Atropine **Hyoscine** **Propantheline** **Dicycloverine** **Ipratropium**	**Loperamide** **Carbamazepine** **Theophylline** **Lithium**	**Furosemide** and **digoxin** have unknown anticholinergic activity. The following have no or negligible anticholinergic activity: **Corticosteroids**, **statins**, **beta-blockers**, **ACE inhibitors**, **calcium channel blockers**, **triptans**, **valproate**, **phenytoin**, **phenobarbitone**, **topiramate**.

Notes: This is a developing area with disagreements between different sources. Some of this table is based on incomplete or poor evidence, or on expert opinion. The anticholinergic effects of drugs may become better understood with time. Some of these therapeutic areas are highly specialised (for example Parkinson's disease) and would require expert advice before considering a change. As noted here less anticholinergic alternatives often have other concerns. If an anticholinergic agent must be used, consider reducing the dose. [15-21]