

Medicines Safety Alert

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To : All Family Practitioners in Primary Care

Heads of Pharmacy and Medicines Management, HSC Trusts for onward distribution

Dear Colleague

RE: Anticholinergic Syndrome

1 Introduction

I am writing to you to highlight the condition of Anticholinergic Syndrome, which can occur in patients when taking anticholinergic drugs. The HSCB has been made aware of a case where a patient may have suffered from this syndrome while using hyoscine hydrobromide (Scopoderm TTS) patches. Anticholinergic (antimuscarinic) adverse effects of medicines are well established: such effects include constipation, urinary retention, dry mouth and pupil dilation.

2 Anticholinergic Syndrome

This is a confusional state with characteristic features related to dysfunction of the autonomic parasympathetic (cholinergic) nervous system. Symptoms classified into systemic and CNS manifestations:

Systemic (peripheral) symptoms

Blurred vision, photophobia, non-reactive mydriasis, loss of accommodation response, flushed and dry skin, dry mouth, tachycardia, hypertension and fever. Gastrointestinal and urinary motility are frequently reduced.

CNS symptoms

Delirium, agitation, disorientation, and visual hallucinations. Ataxia, choreoathetosis, myoclonus and seizures may also occur without peripheral symptoms.

Many medication groups e.g. antihistamines, tricyclic antidepressants, drugs for asthma and COPD, cold preparations, hyoscine have varying degrees of anticholinergic effects and have the potential to cause Anticholinergic Syndrome.

Clinicians should be aware of the risk for chronic anticholinergic toxicity and the fact that not all the symptoms may manifest in patients and if they do suffer some symptoms they could be wrongly attributed to another diagnosis.

3 Anticholinergic Burden Score (ACB)

A drug is given an anticholinergic burden (ACB) score (ref: www.indydiscoverynetwork.org/AnticholinergicCognitiveBurdenScale.html.) on the basis of the strength of its anticholinergic activity (see attached list), with 0 being no effect, 1 a mild effect, 2 a moderate effect and 3 a severe effect. The cumulative ACB score for all medication prescribed for a patient can be worked out.

A large scale study which looked at the long term effect of drugs on health (BMJ 2011:342d4037) found that the combined anticholinergic effects of many common drugs increased the risk of cognitive impairment and death in people aged over 65 years. It is important that clinicians conduct regular medication reviews for all patients especially older patients and wherever possible avoid prescribing multiple drugs with anticholinergic effects. Patients should always be asked about other over the counter medications they purchase as many of them have an ACB score e.g. antihistamines, hyoscine used in the prevention of travel sickness.

4 Children

Children are more susceptible to adverse effects of anticholinergic medicines. The benefits and risks should be carefully considered in the use of these medicines (even in short term) in children.

5 Unlicensed Indications

If an anticholinergic medicines is prescribed for an unlicensed indication the prescriber must “ take responsibility for prescribing the medicine and for overseeing the patient's care, monitoring and any follow up treatment, or arrange for another doctor to do so” (ref: http://www.gmc-uk.org/guidance/good_medical_practice.asp). In taking responsibility for the unlicensed medicines, practitioners should be fully cognizant of the potential liabilities and ensure that patients are fully informed and consent to the use of an unlicensed medicine.

6 Conclusion

Clinicians should:

1. Be aware of the risks of Anticholinergic Syndrome and the particular risks in children
2. When initiating new medications consider the implications of Anticholinergic Syndrome and take appropriate action as required
3. As part of regular medication reviews the anticholinergic burden (ACB) score of medications prescribed should be calculated and appropriate action as required
4. Report **suspected** adverse reactions to the MHRA as appropriate via the Yellow Card reporting system, see “Adverse reactions to drugs” section in BNF or www.yellowcard.gov.uk
5. Follow professional guidance in respect of unlicensed medicines

If you have any further queries please do not hesitate to contact your Medicines Management Adviser

Yours sincerely



Joe Brogan
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Pharmacy & Medicines Management

Drugs on the Anticholinergic Burden (ACB) scale

(A total ACB scale score of three or more is considered clinically relevant)

ACB Score 1 (mild)	ACB Score 2 (moderate)	ACB Score 3 (severe)
Alimemazine	Amantadine	Amitriptyline
Alprazolam	Belladonna alkaloids	Amoxapine
Alverine	Carbamazepine	Atropine
Atenolol	Cyclobenzaprine	Benztropine
Beclometasone dipropionate	Cyproheptadine	Chlorpheniramine
Bupropion hydrochloride	Loxapine	Chlorpromazine
Captopril	Meperidine	Clemastine
Chlorthalidone	Methotrimeprazine	Clomipramine
Cimetidine hydrochloride	Molindone	Clozapine
Clorazepate	Oxcarbazepine	Darifenacin
Codeine	Pethidine hydrochloride	Desipramine
Colchicine	Pimozide	Dicyclomine
Dextropropoxyphene		Diphenhydramine
Diazepam		Doxepin
Digoxin		Flavoxate
Dipyridamole		Hydroxyzine
Disopyramide phosphate		Hyoscyamine
Fentanyl		Imipramine
Fluvoxamine		Meclizine
Furosemide		Nortriptyline
Haloperidol		Orphenadrine
Hydralazine		Oxybutynin
Hydrocortisone		Paroxetine
Isosorbide preparations		Perphenazine
Loperamide		Procyclidine
Metoprolol		Promazine
Morphine		Promethazine
Nifedipine		Propentheline
Prednisone/Prednisolone		Pyrilamine
Quinidine		Scopolamine
Ranitidine		Thioridazine (withdrawn)
Theophylline		Tolterodine
Timolol maleate		Trifluoperazine
Trazodone		Trihexyphenidyl
Triamterene		Trimipramine
Warfarin		

Notes:

1. Certain medicines eg Risperidone (mild ACB), Quetiapine (severe ACB) and Olanzapine (severe ACB) were licensed after 1990 and therefore not prescribed to the original CFAS cohort.
2. Brand names may conceal generic drug names.
3. Some combination medicines contain anticholinergic drugs.
4. This list is indicative and some related medicines were taken by patients in the CFAS study; if appropriate these related medicines were given an ACB score based on the ACB of the related medicine in the Aging Health publication (see below).

References:

1. Boustani MA, Campbell NL, Munger S, Maidment I, Fox GC. Impact of anticholinergics on the aging brain: a review and practical application. *Aging Health*. 2008;4(3):311-20.
2. Campbell N, Boustani M, Limbil T, Ott C, et al. The cognitive impact of anticholinergics: a clinical review. *Clinical Interventions in Aging*. 2009;4(1):225-33