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Drug Safety News: Drugs and the Risk of Falling (2009-03)

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Falls are a major cause of morbidity and mortality in the elderly population around the world. While many factors can contribute to the risk of falling, drugs are one of those risk factors, increasing that risk by 50-100%. A new document describing an approach to prevent medication-related falls has been created in British Columbia by the BC Falls and Injury Prevention Coalition (see below). This document is evidence-based and goes beyond providing a list of "risky" drugs, since for many drugs there is only minimal scientific evidence of their impact on falls. An individualized approach is emphasized, focusing of potential adverse drug reactions, notably drowsiness and dizziness, that increase the falls risk.

Note that it is not just a matter of reducing the chance of the patient falling; some medications such as warfarin do not increase the risk of falling, but can lead to serious outcomes such as cerebral hemorrhage if a patient does fall. Ideally, this document can form the basis of a medication review both before a patient falls, and in patients who have fallen. For further information on Falls Prevention, see the BC Injury Research and Prevention Unit website at www.injuryresearch.bc.ca.

Examples of drugs that can increase the risk of falling, or of a serious outcome if a fall occurs (and possible mechanisms)

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Falls are often caused by multiple factors. This list should be used in conjunction with other fall prevention strategies. A patient should not be denied beneficial or necessary drug therapy based on this list.

Methsuximide (1,2,5) Chlorpheniramine ACE Inhibitors (3) Methylprednisolone Opiates/harcotics Benazepril Oxcarbazepine Clemastine Prednisolone (1,2,3)Captopril (1, 2, 5, 6)Cyproheptadine Prednisone Alfentanil Phenobarbital (1,2) Diphenhydramine Butorphanol Cilazapril Triamcinolone Enalapril/enalaprilat Phenytoin (1,2,5,7) Hydroxyzine Codeine Fosinopril Primidone (1,2) Medizine Digoxin (mechanism Fentanyl Promethazine Hydromorphone Lisinopril Topiramate (1.2) unknown) Perindopril Valproic acid (1,2,5) Trimeprazine Meperidine Quinapril Vigabatrin (1,2) Eye drops (6) Methadone Ramipril Morphine Antipsychotics Trandolapril Herbal and Oxycodone **Antidepressants** (1, 3, 4)Natural health Oxymorphone Alcohol (1,5) Chlorpromazine products Nalbuphine Amitriptyine Clozapine Natural sleep aids Pentazocine Flupenthixol Natural products Propoxyphene Alpha Receptor Bupropion Citalopram Fluphenazine Sufentanil Blockers (2,3 for sexual especially initial Clomipramine Haloperidol enhancement (possible adulteration Desigramine Loxapine Sedative/hypnotics doses) Alfuzosin Doxepin Methotrimeprazine with undeclared Benzodiazepines Doxazosin Escitalopram Olanzapine drugs) Barbiturates (1,2,5) Prazosin Fluoxetine Paliperidon e Alprazolam Tamsulosin **Fluvoxamine** Perphenazine Metoclopramide Bromazeoam Chloral hydrate Terazosin Imipramine Pimozide (1,2,4)Maprotiline Pipotiazine Clorazepate Mirtazapine Prochlorperazine Diazepam Anticoagulants (8) Dalteparin Modobemide Quetiapine Muscle Relaxants Diphenhydramine Nortriptyline Risperidone Doxylamine (1.2)Danaparoid Paroxetine Thioproperazine Badofen Flurazepam Enoxaparin Phenelzine 1,2,3 Thiothixene Carisoprodol Lorazepam Heparin Sertraline Trifluoperazine Chlorzoxazone Midazolam Nadroparin Tranylcypromine 2,3 Zuclopenthixol Cyclobenzaprine Nitrazepam Trazodone Nicoumalone Dantrolene Oxazepam Tinzaparin Trimipramine Methocarbamol Pentobarbital Wartarin Venlafaxine Corticosteroids, Orphenadrine Phenobarbital Temazepam Tizanidine oral (7) Corticosteroids, Triazolam Nitrates (2,3) Anticonvulsants Antihistamines, inhaled, high-Zopidone (1,2,5,6,7)cedating (1) dose (7) Isosorbide dinitrate Carbamazepine Cold Medications Beclomethasone Isosorbide (1, 2, 6)Betamethasone mononitrate Thiazolidinediones that contain Ethosuximide (1,2,5) Budesonide sedating Nitroglycerin Fosphenytoin antihistamines Cortisone Pioglitazone (1,2,5,7)Dexamethasone NS AIDs Rosiglitazone

Possible mechanisms (often unclear): (1) Drowsiness; (2) Dizziness; (3) Hypotension; (4) Parkinsonian effects; (5) Ataxia/gait disturbance; (6) Vision disturbance; (7) Osteoporosis or reduced bone mineral density increases the fracture risk if a fall occurs; (8) Risk of serious bleeding if a fall occurs.

Fludrocortisone

Hydrocortisone

Fluticasone

ASA/acetylsalicylic

acid (8)

Drugs are listed by generic (chemical) name under each drug group. For Brand (manufacturer's) names, check in the CPS to find the generic name.

This list includes only those drugs for which there is evidence of increased risk of falls or their consequences. There may be other drugs that increase this risk in certain patients.

2009

Gabapentin (1,2,5,6)

Levetiracetam (1,2,5)

Lamotrigine (1,2,6)

Azatadine

Cetirizine

Brompheniramine