Potentially Harmful Drug-Disease Interactions in the Elderly

Patients with a History of Falls and Receiving Tricyclic Antidepressants, Antipsychotics, or Sleep Agents

- Approximately one-third of adults 65+ years old fall at least once a year.[1]
- One in 10 falls result in a serious injury and account for 10% of ER visits and 6% of urgent hospitalizations among elderly persons.[2]
- Among those who fall, 5% will experience a fracture.[1]
- A fracture in the older adult often leads to disability and death.[1]
- Unintentional injury is the fifth leading cause of death in the elderly. Falls are responsible for two-thirds of these deaths.[3]

This document serves as a guide and may not apply to all patients and clinical situations. Information presented is not intended to override clinicians' judgement.

The following table details the drugs to avoid and the recommended agents to be considered as alternatives.

Drugs to Avoid	Alternative Treatment
Sleep Agents	
• zolpidem (Ambien) • eszopiclone (Lunesta®)* • Benzodiazepines (Ativan, Klonopin, Valium, Xanax) • Benadryl	• ramelteon (Rozerem) • Melatonin • mirtazapine (Remeron) low dose • trazodone (Desyrl)
Tricyclic Antidepressants	
• amitriptyline (Elavil) • amoxapine (Asendin) • amitriptyline/perphenazine (Etrafon Forte, Triavil) • doxepin (Sinequan) • imipramine (Tofranil) • nortriptyline (Pamelor) • protriptyline (Vivactil®) • trimipramine (Surmontil®)	• bupropion • capsaicin (neuropathic pain) • lidocaine (neuropathic pain) • mirtazapine (insomnia/anorexia) • citalopram (Celexa), escitalopram (Lexapro™), fluoxetine (Prozac) • paroxetine (Paxil), escitalopram (Lexapro), sertaline (Zoloft) • duloxetine (Cymbalta), venlafaxine (Effexor), desvenlafaxine (Pristiq)
Antipsychotics	
• aripiprazole (Abilify®) • clozapine (Clozaril) • haloperidol (Haldol) • mesoridazine (Serentil®) • olanzapine (Zyprexa®) • perphenazine (Trilafon) • prochlorperazine (Compro) • quetiapine (Seroquel®) • thioridazine (Mellaril) • trifluoperazine (Stelazine) • olanzapine/fluoxetine (Symbyax™) • chlorpromazine (Thorazine) • fluphenazine (Prolixin) • loxapine (Adasuve) • molindone (Moban®) • pimozide (Orap®) • promazine (Sparine) • risperidone (Risperdal®) • thiothixene (Navane) • trifluprомazine (Vesprin) • lurasidone (Latuda) • asenapine (Saphris) • brexpiprazole (Rexulti)	• Reassess need for medication • Eliminate or reduce dose[3–4]

* Denotes non-preferred product based on a Medicare Part D choice formulary. Formulary status is based on members benefit design and is subject to change.

Agents Included

I. Sleep Agents

Sedative hypnotics have potential adverse reactions such as cognitive impairment, daytime sedation, motor incoordination, and increased risk of motor vehicle accidents and falls. More information is needed for the effectiveness and safety for use of these agents long-term.

II. Tricyclic Antidepressants

Tricyclic antidepressants are thought to increase risk of falls and hip fractures because of the cardiovascular, anticholinergic, and antihistaminergic adverse effects. The mechanism that causes increased risk of falling is complex and may include orthostatic hypotension, arrhythmias, sedation, and confusion.

III. Antipsychotics

Antipsychotic medications may cause sedation and confusion that may lead to an increase risk in falls. There is a consistent association between an increase in fall risk and psychotropic medication use in all settings (community, hospital, long-term care, and rehabilitation).[5]

Recommendations

The following table details the nonpharmacologic treatment alternatives to be considered.

Nonpharmacologic Interventions	
Fall Prevention	
• Improve physical mobility	• Environmental modifications
Insomnia	
• Stimulus control for chronic therapy • Try to avoid napping during the day • Progressive muscle relaxation • Cognitive behavioral therapy • Bright light exposure during the morning and afternoon hours	• Sleep hygiene education • Biofeedback • Tai Chi • Yoga

References:

1. Takkouche B. Montes-Martinez A. Gill S. and Etminan M. Psychotropic medications and the risk of fracture: a meta-analysis. Drug Safety 2007; 30(2): 171-184.
2. Tinetti M. Preventing falls in the elderly persons. N Eng J Med 2003;348:42-49.
3. American Geriatric Society, British Geriatrics Society, and American Academy of Orthopaedic Surgeons Panel on Falls Prevention. Guideline for the prevention of falls in older persons. American Geriatrics Society. J Am Geriatr Soc 2001;49:664-672.
4. McLeod PJ, Huang AR, Tamblyn RM, Gayton DC. Defining inappropriate practices in prescribing for elderly people: a national consensus panel. CMAJ 1997;156:385-391.
5. National Guideline Clearinghouse. Fall prevention for older adults. (Accessed February 1, 2008 at http://www.guidelines.gov/summary/summary.aspx.).