

Beers Criteria for Potentially Inappropriate Medication Use in Older Adults Part II: 2002 Criteria Considering Diagnoses or Conditions

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WHY: Recently published studies confirm that inappropriate medication use remains a serious problem for the elderly (Bonk, et al, 2006; Lau, et al, 2005). Nursing knowledge of potentially inappropriate medications will enable attentive monitoring for adverse effects, and increase awareness of disease and condition-specific medication concerns in older adults.

BEST TOOL: The 2002 *Criteria for Potentially Inappropriate Medication Use in Older Adults* (Fick, et al, 2003) update the 1997 Beers Criteria, and identify medications noted by an expert consensus panel to have potential risks that outweigh potential benefits. The criteria provide an outcome severity rating (high vs. low) and a brief summary of the prescribing concerns. Try This: Part I presents the criteria independent of diagnosis or condition; Try This: Part II presents the criteria considering diagnosis or medical condition.

Try This: Part II focuses on Table 2 from the 2002 Criteria. It lists 20 diseases or conditions and medications to be avoided in older adults with these conditions. Sixty-six of these potentially inappropriate drugs were considered by the expert panel to have adverse outcomes of high severity. New conditions and diagnoses that were addressed in this update included depression, cognitive impairment, Parkinson disease, anorexia, and malnutrition, syndrome of inappropriate antidiuretic hormone secretion, and obesity.

TARGET POPULATION: The criteria apply to the general population of adults older than 65 years of age. There may be additional medications that are inappropriate for a significantly older or frailer population.

VALIDITY AND RELIABILITY: The criteria were developed using a modified Delphi method to achieve consensus among 12 experts in geriatrics and/or pharmacology. The criteria have been used to screen populations for possible medication-related problems. Use of inappropriate medications has been associated with negative outcomes (Fu, et al, 2004; Lau, et al, 2005; Perri, et al, 2005). Additional studies are needed to support predictive validity and address potential confounding variables such as severity of underlying illness (Lau, et al, 2005; Zuckerman, et al, 2006).

STRENGTHS AND LIMITATIONS: The criteria will assist nurses to identify patients who may benefit from monitoring or medication review. The criteria do not identify all cases of potentially inappropriate prescribing or medication-associated adverse events, and do not address polypharmacy or underuse of helpful medications. The criteria are designed for population-based screening and are not intended to substitute for professional judgment regarding the individualized needs of particular older adults.

FOLLOW-UP: Nurses may use the criteria to increase awareness of medications that may increase risk for adverse drug reactions. Nurses, primary care providers and pharmacists may collaborate to optimize individualized medication regimes and provide appropriate clinical monitoring and education. The suggested references provide further information on medication risk and older adults.

MORE ON THE TOPIC:

Best practice information on care of older adults: www.ConsultGerIRN.org.

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Table 2: 2002 Criteria for Potentially Inappropriate Medication Use in Older Adults: Considering Diagnoses or Conditions

Disease or Condition	Drug	Concern	Severity Rating (High or Low)
Heart failure	Disopyramide (Norpace), and high sodium content drugs (sodium and sodium salts [alginate bicarbonate, biphosphate, citrate, phosphate, salicylate, and sulfate])	Negative inotropic effect. Potential to promote fluid retention and exacerbation of heart failure.	High
Hypertension	Phenylpropanolamine hydrochloride (removed from the market in 2001), pseudoephedrine; diet pills, and amphetamines	May produce elevation of blood pressure secondary to sympathomimetic activity.	High
Gastric or duodenal ulcers	NSAIDs and aspirin (>325 mg) (coxibs excluded)	May exacerbate existing ulcers or produce new/additional ulcers.	High
Seizures or epilepsy	Clozapine (Clozaril), chlorpromazine (Thorazine), thioridazine (Mellaril), and thiothixene (Navane)	May lower seizure thresholds. May prolong clotting time and elevate INR	High High
Blood clotting disorders or receiving anticoagulant therapy	Aspirin, NSAIDs, dipyridamole (Persantin), ticlopidine (Ticlid), and clopidogrel (Plavix)	values or inhibit platelet aggregation, resulting in an increased potential for bleeding.	
Bladder outflow obstruction	Anticholinergics and antihistamines, gastrointestinal antispasmodics, muscle relaxants, oxybutynin (Ditropan), flavoxate (Urispas), anticholinergics, antidepressants, decongestants, and tolterodine (Detrol)	May decrease urinary flow, leading to urinary retention.	High
Stress incontinence	α -Blockers (Doxazosin, Prazosin, and Terazosin), anticholinergics, tricyclic antidepressants (imipramine hydrochloride, doxepin hydrochloride, and amitriptyline hydrochloride), and long-acting benzodiazepines	May produce polyuria and worsening of incontinence.	High
Arrhythmias	Tricyclic antidepressants (imipramine hydrochloride, doxepin hydrochloride, and amitriptyline hydrochloride)	Concern due to proarrhythmic effects and ability to produce QT interval changes.	High
Insomnia	Decongestants, theophylline (Theodur), methylphenidate (Ritalin), MAOIs, and amphetamines	Concern due to CNS stimulant effects.	High
Parkinson disease	Metoclopramide (Reglan), conventional antipsychotics, and tacrine (Cognex)	Concern due to their antidopaminergic/cholinergic effects.	High
Cognitive impairment	Barbiturates, anticholinergics, antispasmodics, and muscle relaxants. CNS stimulants: dextroAmphetamine (Adderall), methylphenidate (Ritalin), methamphetamine (Desoxyn), and pemolin	Concern due to CNS-altering effects.	High
Depression	Long-term benzodiazepine use. Sympatholytic agents: methyl dopa (Aldomet), reserpine, and guanethidine (Ismelin)	May produce or exacerbate depression.	High
Anorexia and malnutrition	CNS stimulants: DextroAmphetamine (Adderall), methylphenidate (Ritalin), methamphetamine (Desoxyn), pemolin, and fluoxetine (Prozac)	Concern due to appetite-suppressing effects.	High
Syncope or falls	Short- to intermediate-acting benzodiazepine and tricyclic antidepressants (imipramine hydrochloride, doxepin hydrochloride, and amitriptyline hydrochloride)	May produce ataxia, impaired psychomotor function, syncope, and additional falls.	High
SIADH/hyponatremia	SSRIs: fluoxetine (Prozac), citalopram (Celexa), fluvoxamine (Luvox), paroxetine (Paxil), and sertraline (Zoloft)	May exacerbate or cause SIADH.	Low
Seizure disorder	Bupropion (Wellbutrin)	May lower seizure threshold.	High
Obesity	Olanzapine (Zyprexa)	May stimulate appetite and increase weight gain.	Low
COPD	Long-acting benzodiazepines: chlordiazepoxide (Librium), chlordiazepoxide-amitriptyline (Limbitrol), clidinium-chlordiazepoxide (Librax), diazepam (Valium), quazepam (Doral), halazepam (Paxipam), and chlorazepate (Tranxene). β -blockers: propranolol	CNS adverse effects. May induce respiratory depression. May exacerbate or cause respiratory depression.	High
Chronic constipation	Calcium channel blockers, anticholinergics, and tricyclic antidepressant (imipramine hydrochloride, doxepin hydrochloride, and amitriptyline hydrochloride)	May exacerbate constipation.	Low

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