

## Geriatric Medications: Dangerous Side Effects & Adverse Reactions

Contributing Authors: Anne Meyer BSN, RN, LNCC, MSCC & Cathy Weitzel, APRN, BC

Caring for an elderly patient in today’s healthcare environment can be both challenging and intimidating. There is increased litigation surrounding issues of polypharmacy, unrecognized side effects of medications & adverse events. Better awareness and earlier assessment by nurses & physicians is needed to recognize medication effects that can be dangerous & life-threatening in this very specialized population.

Elderly patients are at high risk for medication side effects due to an age-related progressive decline in kidney (site for drug excretion) & liver (site for drug metabolism) function.

**Medications for this population must be dosed lower when starting the medication then titrated slowly.**

Medical professionals administering or prescribing medications must know basic pharmacokinetics. Because the elderly patient has slowed metabolism the half-life of drugs is extended, allowing medications to accumulate in the system over time. This can ultimately lead to toxicity & in a worst-case scenario, death.



Anne Meyer BSN, RN, LNCC, MSCC  
&  
Jennifer Kem RN, CCM, LNCC, CLCP, MSCC

### Contact us at:

888-5MED-LAW (888-563-3529)  
Info@MedLawConnection.com  
www.MedLawConnection.com



Most drug-to-drug interactions occur by way of the Cytochrome P-450 Enzyme System. Lists of medications that interfere with this system are readily available. Unfortunately, practically all medications have significant drug-to-drug interactions. We have included in this newsletter a list of high risk categories to consider when caring for elderly patients.

Ted was a 78 year-old nursing home patient with dementia, taking numerous medications that included an antipsychotic & antidepressant. He was agitated & quickly became dehydrated. He then developed a severe & painful cervical dystonia within 24 hours of adding Depakote to the medications he was already taking. Depakote is a frequently prescribed off-label drug to control anger outbursts & aggression. Neck rigidity, protruding cervical muscles & Ted’s inability to raise his head/look forward are evident in this photo. This drug-induced cervical dystonia ALWAYS constitutes a medical emergency and is often overlooked or dismissed by staff.

### “DEFINITIONS “

**Side Effect** - An action as a result of taking a medication that was not intended.

**Adverse Reaction** - An action that occurs as a result of taking a medication that was not intended AND affects the patient’s morbidity & mortality.

**Dystonia** - Adverse medication reaction affecting the muscles. Quickly progresses to severe muscle spasm & rigidity. Can lead to laryngospasm (difficulty or inability to swallow). **Medication-induced dystonia is a medical emergency.**

**Off-label** - Not FDA approved for use in these symptoms.

**Pharmacodynamics** - Effects of the drug on the body.

**Pharmacokinetics** - What the body does with the drug i.e. absorption, distribution, metabolism & excretion.

**Cytochrome P-450 Enzyme System** – A group of enzymes involved in drug metabolism and detoxification after a drug has been taken in by mouth. These enzymes change many drugs into less toxic forms that are easier to excrete.

**Drug half – life** - The length of time it takes for half of the drug to be eliminated from the bloodstream.

**Polypharmacy** - the use of multiple medications by a patient, especially when multiple forms of medication are used by a patient.

## \*\*GERIATRIC DOSING CLINICAL PEARL:

Always start low & go slow.

**In many of the cases we review as nursing consultants there is a common theme:**

- \* Many elderly patients have co-morbidities that require them to see multiple medical providers. Often the physicians do not know what the other prescribed and there can be over dosing and adverse drug interactions.
- \* Using more than one pharmacy does not allow for cross checking of medications and drug to drug reactions
- \* Patients that are displaced from their homes related to increasing care needs, often become depressed, experience a decreased appetite, insomnia, perhaps increased confusion related to the trauma of change and a strange environment. Anti-depressants are prescribed. The patient starts to have adverse reactions to the new medication(s) i.e. behavioral problems, unsteady gait, and increased confusion. Often additional medications are prescribed to treat this new onset of symptoms instead of identifying that the original medication is causing or contributing to these symptoms. Patients will then often experience frequent hospitalizations related to dehydration, urinary tract infections, falls, etc.

**If you have a case that involves polypharmacy or medication adverse reactions the following questions may be helpful to ask in deposition or discovery:**

- What policy does the facility have for medication reconciliation upon admission and re-admission?
- What is the education of the person administering the medication?
- What resources do the people administering the medication have readily available to them to look up drug information?
- What ongoing education is provided to nursing staff to ensure updating of new medication information?
- What ongoing education is provided related to caring for the aging population and their many co-morbidities?
- Is there pharmacy oversight of physician orders for medication and review for contraindications?
- Can the nurse identify visual signs and symptoms of drug toxicity?
- Are consents obtained for the administration of psychotropic medications?
- What monitoring for side effects/adverse reactions is in place for psychotropic medications?
- What documentation of behavioral issues and effectiveness of medications is in the medical record?
- What communication or education is done with other disciplines caring for this patient re: medication side effects? i.e. CNA's, therapists, activity personnel.



### HIGH RISK CATEGORIES

- Age > 60 y/o
- Multiple medical care providers
- Polypharmacy
- Dehydration
- Multiple physical symptoms/disease states
- Agitation
- Dementia or any cognitive decline
- Psychotropic medications (antidepressants, Lithium, Depakote, Cogentin, others)
- Antipsychotic medications (all have FDA Black Box Warning for use in elderly)
- Anticholinergic medications (due to severe drying/antihistaminic effects)
- Controlled substances (sleep medications/hypnotics, anti-anxiety medications, pain medications)
- Medications that cause EKG changes (QTc prolongation; can lead to sudden death)
- Patients that self medicate &/or use over the counter preparations
- Organic brain disease, mental retardation, history of closed head injury
- Patients with history of medication sensitivity/multiple medication allergies
- Previous episode of Delirium or medication toxicity



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22435 Kimberly Road, Suite 170 North Bettendorf, Iowa 52722  
888-5MED-LAW (888-563-3529)