

## Don't scratch that itch: Resisting risky medication use in the elderly

Kerry Guyer, MD

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University of Colorado Internal Medicine

### **Story from the Front Lines**

An elderly woman with dementia, hypothyroidism and normal pressure hydrocephalus managed with a ventriculoperitoneal shunt presented to the emergency department for somnolence. The patient was brought to the emergency department after she was found by her son to be minimally responsive, in the setting of several days of progressive lethargy and behavior change. Neurology and neurosurgery were promptly consulted, with subsequent work-up including shunt interrogation and computed tomography of the brain. Without positive findings and in the presence of ongoing symptoms, magnetic resonance imaging was ordered.

The patient had difficulty tolerating the MRI, attempting to climb out of the scanner and requiring administration of intravenous (IV) lorazepam. She then developed an urticarial rash over the left arm with ongoing restlessness that prompted IV diphenhydramine and additional IV lorazepam. MRI showed no explanation for the patient's altered mental status. Unfortunately at this point the patient was too somnolent to be safely discharged and was thus admitted for observation.

Upon further interviewing, the son reported that the patient had been recently prescribed lorazepam by her primary physician to treat insomnia related to generalized pruritus of unclear etiology. She started taking this medication four days prior to presentation, correlating with symptom onset, and the diagnosis of benzodiazepine intoxication was made. The patient spent a total of four days in the emergency department and hospital prior to returning home.

### **Teachable Moment**

In this case, the patient underwent multiple expensive tests and was admitted to a hospital after receiving a medication that is known to be high-risk for use in the elderly. Despite their common use in the general population, benzodiazepines are featured on the Beers List due to the particular health and safety risks they pose to elderly patients.<sup>i</sup>

Why are benzodiazepines dangerous to the elderly? The body mass of elderly patients tends to be higher in fat and lower in muscle mass, thus increasing the volume of distribution of lipophilic drugs and decreasing that of water-soluble medications. In addition, impaired organ function may contribute to increased circulating drug levels, either through slower first-pass metabolism in the liver and/or through decreased renal excretion. Lastly, elderly patients are more likely to have age-related cognitive decline and have been shown to demonstrate heightened sensitivity to centrally-acting agents. These age-related physiologic changes place elderly patients at higher risk for drug accumulation and thus increase the risk of toxic or unintended effects.<sup>ii,iii</sup>

The potential harms of benzodiazepines span well beyond cognitive effects.<sup>iv</sup> The drugs also increase the risk of falls, with one study finding an odds ratio of about 1.6 for increased fall risk – among the highest of the classes studied.<sup>v</sup> The drugs have also been associated with increased risk of hip fracture, often a sentinel event in the functional decline of a patient.<sup>vi</sup> More recently, associations have been drawn

between benzodiazepine use and increased incidence of dementia, though a causal relationship has not been clearly defined.<sup>vii,viii</sup>

Despite these well-catalogued risks, benzodiazepines are still often prescribed to elderly patients. While it is ultimately the responsibility of prescribers to limit use of high-risk medications in the elderly, patients can be empowered to have more input into their drug regimens. In one study, authors found that educating patients on the risks of a medication and offering a tapering schedule is effective in reducing overall consumption of the targeted drug.<sup>ix</sup> Increased restraint in prescribing patterns, in addition to patient and family education, could help limit benzodiazepine use in the elderly and potentially reduce iatrogenic morbidity.

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## References

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