

resulting in higher blood levels—even though the same dose might be safe in younger people—and, possibly, increased side effects.

Increased sensitivity to many drugs

The aforementioned problems can cause many drugs to accumulate in older patients, reaching dangerously high levels than in younger people. These age-related problems are further worsened by the fact that even at “normal” blood levels of many drugs, older adults have an increased sensitivity to their effects, often resulting in adverse effects. This is seen most clearly with drugs that act on the central nervous system, such as many sedative-hypnotics, alcohol, antipsychotics, opioid analgesics such as morphine or pentazocin, and most drugs that have anticholinergic effects.

Decreased ability to maintain blood pressure

Mechanism to maintain blood pressure is impaired in older adults and this may result in unwanted fall of blood pressure when they use certain drugs, including antihypertensive drugs. Antihypertensive drugs -because they lower blood pressure-are particular problem in this regard. Other categories of drugs that

cause an exaggerated blood pressure drop include sedative-hypnotics, antipsychotics, antidepressants, antianginal and antiarrhythmics.

Decreased temperature compensation

Younger adults are better able to withstand extreme of temperatures in comparison to older people. They sweat and dilate blood vessels to get rid of excess heat when the ambient temperature is high, and constrict blood vessels to conserve heat when it is low. Older adults have impairment in this mechanism. Many older adults’ deaths during heat waves or prolonged cold spells can be attributed to drugs that interfere with temperature regulation.

More likely to have diseases that affect the response to drugs

Older adults are much more likely than younger adults to have at least one disease – such as liver or kidney damage (not just the decreased function of older age), poor circulation and other chronic condition - that alters their response to drugs. Little is known about the influence of multiple diseases on drug effects in the elderly.

More likely to take multiple drugs

Because older adults use significantly

more prescription drugs than younger people, they have greatly increased risk of adverse effects caused by the dangerous drug interactions. Often, older adults take one or more over-the-counter drugs in addition to their prescription drugs. This further increases the likelihood of adverse drug interactions. The most common kind of adverse drug interaction is the ability of one drug to cause a second drug to accumulate to dangerous levels in the body.

Inadequate testing of drugs in older adults before approval

Although older adults use a disproportionate share of prescription drugs, few of these drugs are adequately tested in older adults before being approved.

Conclusion

In summary, older patients are at increased risk for adverse drug reactions. Increasing awareness of this problem should result in the prescription of far fewer drugs to older adults, and those that are prescribed will be given at lower doses in most instances.

Reference:

Worst Pills, Best Pills 2008; 14 (5):5-6

Brief Information

Adverse reactions with botulinum toxin A

Botulinum toxin type A is a neurotoxin approved for the treatment of strabismus, blepharospasm and facial nerve disorders, spasmodic torticollis, various spasticity disorders (including dynamic equinus foot deformity due to cerebral palsy), spasmodic dysphonia, axillary hyperhidrosis, and treatment of brow furrow (glabellar) lines. A haemagglutinin complexed form of botulinum toxin type A is also available for similar but more limited indications.

Serious systemic reactions including respiratory compromise and death following the use of botulinum toxin have been reported from US and Canada. The reactions are suggestive of botulism, which occurs when the toxin spreads in the body beyond the site where it is injected.

In the US, deaths occurred mainly in children treated for cerebral palsy-associated limb spasticity; the most serious non-fatal cases included respiratory insufficiency requiring gastric feeding tubes and ventilatory support. Deaths associated with respiratory insufficiency have been reported in adults and children in Canada.

Reactions reported most commonly are of muscle weakness at sites adjacent to or distant from the injected area, which include dysphagia (including severe enough to warrant hospitalisation), respiratory failure or dyspnoea associated with intercostal and/or diaphragmatic muscle weakness. Other reactions reported most commonly are rash or other allergic reactions, diplopia and fatigue.

Most adverse effects with botulinum toxin appear to be non serious, of 'mild to moderate intensity' and transient. Serious adverse reactions are rare and usually relate to 'leakage' of the toxin to non-target areas (*vis*, dysphagia, muscle weakness and sequelae such as aspiration pneumonia), generally but not always, attributed to excessive volume of injection which in turn relates to the concentration used or incorrect administration.

Correct injection technique and expert knowledge of human anatomy relevant to the specific indication are prerequisites for the administration of botulinum toxin. Treatment should be initiated with the lowest effective dose and repeated at the longest interval consistent with effectiveness.

Drug Committee, TUTH

A new Drug Committee has been constituted in TUTH from Poush, 2065. It is a nine member-committee comprising Clinical Pharmacology, Anesthesiology, Surgery, Internal Medicine, Matron, Administration, Finance, a representative from Faculty Doctors Association, and chief of the Pharmacy as a member secretary. The new committee has met three times since it has been constituted to discuss the various issues in improving hospital pharmacy services.

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A Quarterly Bulletin from
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Nine reasons why older adults are more likely than younger adults to have adverse drug reactions

Response to drugs may be significantly different in younger and older patients, a fact that many doctors and patients do not realize. For many drugs, older adults should be started on lower doses and kept on minimal number of drugs necessary.

Smaller bodies and different body composition

Older adults generally weigh less than younger adults, and have a smaller amount of water and a larger proportion of fat. Body weight typically increases from age 40 to 60, mainly due to increased fat. Therefore, the amount of a drug per kilogram of body weight or

body water will often be much higher in an older adult than it would be if the same amount of the drug were given to a younger person. In addition, drugs that concentrate in adipose tissue may have prolonged effect because larger proportion of adipose tissue in which the drugs can accumulate.

Decreased liver function

Because of decreased liver function in older adults, certain drugs are metabolized slower, so the drugs can therefore be excreted from the body less efficiently. Elimination of drugs such as diazepam, chlordiazepoxide and many others is affected by this decrease in liver function.

Decreased renal function

The ability of the kidneys to excrete drugs begins to decrease steadily starting around age 35 or 40. By age 65, glomerular filtration rate is already decreased by 30 percent. A given dose may not be excreted as efficiently,