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TOXICOLOGY TIMES

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Negative Aspects of Benzodiazepine Use and Abuse

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Characterized as short, intermediate or long-acting, benzodiazepines are used for their sedative, sleep-inducing, anti-anxiety, anti-convulsant and muscle relaxant properties. Because benzodiazepines have a much larger therapeutic window (i.e. the range of dosage that will not cause adverse effects) than the barbiturate class, they largely replaced barbiturates in medical use. Regular use of benzodiazepines can present great risks to patients depending on the individual situation. A decline in cognitive abilities associated with benzodiazepines can cause accidents such as slips and falls or while operating machinery. Overdose deaths have skyrocketed when benzodiazepines are combined with other drugs. It is estimated that benzodiazepines are involved in thirty percent of overdose deaths. Withdrawal from benzodiazepine use is painful and dangerous for the patient and must be medically supervised.

Benzodiazepine prescriptions have risen rapidly in the past two decades. During the 1980s in the United Kingdom 32 million prescriptions were written in a country that is currently around 61 million residents. In the US the number of adults who filled a prescription rose 67% from 1996 to 2013.[1] Very recently there has been a modest decline in people with at least one benzodiazepine prescription from 9.2% to 7.3% in the US from 2010 to 2016.

A study of benzodiazepine prescription issuance discovered that primary care physicians write many of the prescriptions for benzodiazepines, but there has been little data correlation with the diagnosis for prescription. Between July 2011 and June 2012, researchers discovered that the typical benzodiazepine recipient was over twice as likely to have substance abuse or depression issues, and over 1.5 times as likely to have chronic obstructive pulmonary disease or osteoporosis. All these issues can be negative indications for benzodiazepine treatment, particularly considering patient-adjusted dosage to accommodate tolerance.[2]

However, benzodiazepine prescription is not without risk. Problems associated with acute use are drowsiness, dizziness and lack of coordination that can be the cause of accidents and falls. The American Geriatric Society has issued guidelines regarding the chronic use of benzodiazepines, which leads to tolerance and dependence while adverse effects accumulate.[3] Researchers have stated that long-term benzodiazepine use is no better than a placebo for sleep or anxiety treatment.[4] A common patient reaction to tolerance is to increase the dose or switch to another benzodiazepine, if possible. This can be particularly hazardous when combined with alcohol or other drug abuse.

Longer-term use can lead to a degradation of cognition, including sustained attention, verbal learning, memory and psychomotor ability.[5] Normal decline in cognition in the elderly is amplified by benzodiazepines, although this appears to improve with withdrawal. This improvement is also true for the general population, although in all cases improvement may take weeks to months to return to baseline levels. Long-term use has also caused or exacerbated mental or physical health problems.[6]

Another claim against benzodiazepine therapy is that long-term use can cause dementia and even brain damage. The addictive qualities of benzodiazepines were known early on, but it was not until 1984 that researchers noted brain abnormalities by CT scan, although this topic is still under debate.[7] However, another researcher noted a "striking deterioration in personal care and social interactions" in long-term benzodiazepine users.[8]

Withdrawal from benzodiazepines can be prolonged and unpleasant. Symptoms can include insomnia, tremors, agitation, fearfulness, and muscle spasms. Previous symptoms may recur and worsen, in a rebound phenomenon. Withdrawal symptoms can occur for months even with a tapered dose and up to 10% of patients can experience a prolonged withdrawal, sometimes lasting over a year.

??? Did You Know ???

Supportive services are critical components of a behavioral health system and can help people meet their treatment goals. Supportive services take a variety of forms. Case or care management can coordinate behavioral health services with housing, employment, education, and other supports. Frequently, when individuals are involved in multiple public systems it is important for a single point of contact to coordinate care and engage all the system partners in service planning and delivery. For young people, this is often done through a wraparound process. For people with serious mental illnesses, this can be done through an Assertive Community Treatment (ACT) – 2008 team. Source: SAMHSA

Question of the Month

Question: *Why are different cutoff levels used for urine and saliva testing?*

Answer: The body processes and eliminates urine differently than it does saliva. Urine is stored in the bladder until a person voids; which is on average about 4x per day. Between urine voids, urine is still produced, which further concentrates in the bladder. The accumulation and concentration of the drug are the reasons that the cutoffs are set higher for urine drug testing. Saliva, on the other hand, is constantly being produced and eliminated by means of swallowing, eating or spitting. Therefore, saliva concentrations for drugs are found to be much lower. Saliva cutoffs are similar to blood cutoffs as they are both at constant rates of absorption and elimination.

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