SDRL Laboratory

TOXICOLOGY TIMES

SDRL Laboratory

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A FREE Monthly Newsletter for Substance Abuse and Opioid Treatment Programs from San Diego Reference Laboratory

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Methylphenidate (Ritalin)

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Methylphenidate was first synthesized in 1944 and approved for medical use in the United States in 1955. Methylphenidate is a sympathomimetic amine that is prescribed primarily for attention deficit hyperactive disorder (ADHD) but can also be prescribed for narcolepsy.

Methylphenidate improves function by improving the action of catecholamine in the brain.[1] Off-label uses for methylphenidate include treatment-resistant bipolar disorder and major depressive disorder.[2] In 2013 it was estimated that 2.4 billion doses were taken world-wide, with 80% of the consumption in the United States.

For ADHD, methylphenidate is estimated to be effective in 70% of legitimate cases. It is considered a safe, cost-effective compound to manage ADHD. When used effectively, patients generally have better relationships with family and peers, perform better at work and school, and are less likely to engage in risky behaviors. However, as ADHD diagnosis around the world increases, the risk of misdiagnosis can occur and some say that the drug can cause more harm than good in some populations.

Therapeutic doses of methylphenidate can improve memory, performance and concentration, so most methylphenidate misuse is often found in higher education and overworked individuals. Higher doses of methylphenidate can interfere with any improvement seen with lower doses, and it has been suggested that students using methylphenidate as a study aid may be compensating for other issues.[3] 26% of teens believe that methylphenidate is a legitimate study aid.[4]

Side effects can include nervousness, insomnia, rash, anorexia, dizziness and nausea. Patients should be checked for blood pressure and heart rate before taking any stimulant treatment, and periodically thereafter. Methylphenidate can cause serious heart or blood vessel problems, particularly in patients with a family history of heart disease. Raynaud phenomenon, a circulatory problem where the small blood vessels in the extremities over-react to temperature changes, can occur more frequently in patients treated with methylphenidate.

There is an alarming ease of access of stimulant drugs to the public. Methylphenidate is listed by the Drug Enforcement Agency (DEA) as one of the "most stolen" medications. In 2013, 12% of US teenagers reported misusing a prescription stimulant drug in their lifetime, 5% within the last month. The DEA has collected reports indicating that those who legitimately receive Methylphenidate may give or sell it to peers who misuse it. Methylphenidate may also be diverted through "Attention Deficit Scams" in which an adult obtains several prescriptions for methylphenidate for a child. The adult may use the drug themselves or divert it for personal gain.

Severe toxic effects of methylphenidate injection have been observed in the IV drug-user population. A Swiss study noted that of the four IV-use cases reported to them, injection resulted in one abscess and two amputations. However, the researchers did note that the individuals were multiple-substance abusers and had a history of IV drug use.[5] This is most likely due to the tablet fillers that do not dissolve in water when a solution is prepared for injection. The illicit use for memory enhancement and recreational use can certainly lead to serious medical problems which are, in the long term, not worth the risk. The legal and prescribed use of Methylphenidate is safe and effective for treating certain disorders under the care of a physician.

??? Did You Know ???

Because people with mental and substance use disorders often have more physical health problems than the general population, assistance in coordinating care across behavioral and physical health care providers can be a valuable support. One important outcome for people with serious mental illnesses is employment, and supported employment services can be an important link to a job that not only supports independence, but also provides important social interaction. People may face barriers like lack of transportation or child care, so the ability to provide some flexible supports can be the difference between wellness and failure to receive treatment. Source: SAMHSA

Question of the Month

Question: *Is it true that propoxyphene (PPX) is no longer available in the United States? Should we still be testing our patients for it?*

Answer: In November of 2010, the U.S. Food and Drug Administration asked manufacturers of propoxyphene and propoxyphene-containing products – including generic products – to discontinue production and remove the drugs from the U.S. market due to potential cardiac complications. Additionally, the FDA advised healthcare providers to stop prescribing the drug to patients. It's always a good idea to review your drug panel from time to time to make sure it still matches your programs' goals and your patients' needs. If Propoxyphene is no longer of importance to your program and it is on your drug-testing panel, you might consider removing the drug as it is most likely a factor in your drug screen price.

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