The potential for misuse and abuse of medications in ADHD: a review.

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Abstract
This article reviews the literature concerning attention-deficit/hyperactivity disorder (ADHD) medication misuse, abuse, dependence, diversion, and malingering. The review covers nonmedical use (NMU) of both stimulant (methylphenidate and amphetamine) and nonstimulant (α-adrenergic agonists and atomoxetine) prescription medications, and provides a discussion on the relevance for ADHD treatment today. The neural basis for ADHD medication mechanisms of action (increased norepinephrine and dopamine signaling) and their neurobiochemical relationship to the abuse potential is explored. Regionally-specific, stimulant-induced elevations in brain dopamine appear to be integral to both efficacy in ADHD and potential for abuse. In addition to the prevalence of misuse and diversion, additional topics discussed include the potential safety concerns associated with NMU of prescription ADHD medications and the cost to payers of prescription drug diversion (eg, increased emergency department visits associated with misuse). The evidence describing the difficulty in detecting malingering for the purpose of illicit access to ADHD medications for subsequent misuse or diversion is also summarized. Moreover, the effect of ADHD medications in patients with comorbid substance use disorder and the controversial potential linkage of stimulant prescription use with subsequent substance use disorder are explored. Overall, the data suggest that ADHD medication misuse and diversion are common health care problems for stimulant medications, with the prevalence believed to be approximately 5% to 10% of high school students and 5% to 35% of college students, depending on the study. Stimulant effectiveness and speed of action are deemed desirable to enhance attention and focus performance for activities like studying, but stimulants are also misused recreationally. Conversely, the data suggest a lack of abuse potential and lack of actual medication misuse for the nonstimulant medications. Although they can be efficacious for the treatment of ADHD, the nonstimulants lack a mechanism of action linked to the abuse potential and they lack the desirable effects (speed of action, stimulant feel) that make stimulants susceptible to NMU. In light of these findings, the data suggest a need for close screening and therapeutic monitoring of ADHD medication use. In addition, nonstimulants might be an appropriate alternative for patients with concern about abuse and physicians concerned with general misuse and diversion.