# Diagnoses of Cardiovascular Disease or Substance Addiction/Abuse in US Adults Treated for ADHD with Stimulants or Atomoxetine: Is Use Consistent with Product Labeling?

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Abstract

BACKGROUND:
Among US adults, utilization of pharmacotherapy for attention-deficit hyperactivity disorder (ADHD) has increased more than ninefold since 1995-1996. Potential contraindications to ADHD pharmacotherapy include serious cardiovascular disease (CVD) and, for stimulants, addictions and bipolar disorder (BPD).

OBJECTIVE:
To assess the prevalence of potential contraindications among adults treated with ADHD pharmacotherapy.

METHODS:
A retrospective cohort analysis was performed using the Truven Health MarketScan® database. Subjects filled ≥ 1 prescription for atomoxetine or ≥ 1 stimulant in 2014-2015, were aged 18-64 years, commercially insured throughout observation, and diagnosed with ADHD on two or more medical claims. Diagnoses and medical procedures were measured in the 12 months prior to pharmacotherapy initiation. Metrics included serious CVD (cardiomegaly, cardiomyopathy, cerebrovascular occlusion, congestive heart failure, myocardial infarction, pacemaker, or valvular disorder) and any CVD (serious CVD, other atherosclerotic CVD, arrhythmia, congenital heart anomaly, or hypertensive heart disease). Rates of substance addiction or abuse were measured in a range to address nonspecific diagnostic coding.

RESULTS:
Only 2.0% of treated adults (n = 91,588) had one or more diagnosis indicating serious CVD. CVD prevalence increased monotonically with age. Of patients aged 55-64 years (n = 5,237), 7.2% had serious CVD; 15.9% had any CVD; and 1.9% had been hospitalized with one or more CVD. Of patients treated with stimulants (n = 87,167), 11.3-18.5% were diagnosed with addiction/abuse and 4.1% with BPD.

CONCLUSIONS:
CVD prevalence is generally low among adults using ADHD medication but increases with age. Although difficult to estimate precisely, the rate of addiction/abuse among stimulant-treated patients appears unexpectedly high. Further research should assess cardiovascular events and other potential harms associated with contraindicated use in high-risk adults.