ADHD drugs do not raise risk of serious heart conditions in children, study shows

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(Medical Xpress)—Children taking central nervous system stimulants such as Adderall and Ritalin do not face an increased risk of serious heart conditions during treatment, according to a new University of Florida study that confirms findings reported in 2011. Published in the *British Medical Journal* in August, the study contributes to a decade-long clinical and policy debate of treatment risks for children with attention deficit hyperactivity disorder, or ADHD.

"This is a question that has been lingering for about 10 years," said Almut Winterstein, a pharmacoepidemiologist and a professor in pharmaceutical outcomes and policy in the UF College of Pharmacy.

Stimulant drugs are one of the most commonly prescribed medications for children—after antibiotics and antidepressants, Winterstein said.

Winterstein's results show that every year, children have an approximately one in 30,000 risk of suffering a severe cardiac event. She found no increased risk for children who were taking stimulant drugs. A cardiac event includes sudden cardiac death, heart attack or stroke, and is typically caused by underlying heart disease. These results confirm previous study conclusions that there are no serious cardiac events resulting from short-term use of central nervous system stimulant drugs by children and young adults.

In 2007, Winterstein conducted the first large population study to investigate the risk associated with the use of central nervous system

stimulants in children and young adults between ages 3 and 20. Published in the journal *Pediatrics*, her results showed a 20 percent increase in emergency clinic or doctor's office visits with cardiac-related symptoms, but no increase in death or hospital admission for serious heart conditions.

In that study, she analyzed records from 55,000 children under Medicaid who had ADHD and were undergoing treatment between 1994 to 2004. But this population was still not large enough to determine if these drugs were indeed safe for children, Winterstein said.

The new study, funded by the Agency for Healthcare Research and Quality and in part by the National Center for Advancing Translational Sciences, examines a larger U.S. population of 1.2 million youths eligible for Medicaid programs in 28 states. It follows a similarly large investigation published in December 2011 in *The New England Journal of Medicine* by Dr. William O. Cooper, who looked primarily at privately insured patients.

"We complemented Dr. Cooper's study by utilizing Medicaid patients who are typically more vulnerable and at higher risk for serious adverse events," Winterstein said. "This allowed us to examine patients with severe underlying heart conditions who received stimulants."

Although the study confirmed there are no short-term effects from central nervous system stimulants, the study did not reveal how these drugs affect patients in the long term.

"Neither of the studies was able to answer what happens in the long term," Winterstein said. "It's an important issue to address, but we won't be able to answer the question until this generation of ADHD children, who began using stimulant drugs in the 1990s, reaches adulthood into their 50s, 60s and 70s."

Another concern the study raised to UF researchers is related to children who were on continuous stimulant medication for more than 10 years into their adulthood. The effects of even minor increases in blood pressure and heart rate over a sustained period of time are unknown, Winterstein said.

A decade ago, when initial alarms were raised about stimulant use in children, health-care providers were cautious, but now the practice has increased with the knowledge of little risk of serious effects.

Dr. Regina Bussing, a professor in the UF College of Medicine's division of child and adolescent psychiatry, said concerns about possible serious cardiovascular risks may have resulted in children not getting needed ADHD treatment.

"Dr. Winterstein and her colleagues' study yields important information for clinicians," Bussing said.

Recommended evaluation practices should continue for young patients, Bussing said, including cardiovascular monitoring. Parents will still be advised to stop medication and take the child to the emergency room should he or she develop sudden onset of chest pain or shortness of breath, but the study alleviates doctor and parent concerns for the most serious cardiovascular events.

Though her research does cast a positive light on the safety of central nervous system stimulants, Winterstein agrees that parents should continue to seek medical care if symptoms arise. She also has concerns about the increasing use of stimulant drugs for children without weighing the long-term risks and benefits.

Provided by University of Florida