

## ACC: ECG Before Starting Stimulants for ADHD Called a Cost-Effective Screen

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ORLANDO, March 31 -- A screening ECG before starting stimulant medications for kids with attention deficit hyperactivity disorder (ADHD) may be a cost-effective way of picking up unrecognized cardiac problems, researchers said.

### Action Points

- Explain to interested patients that the single center study was not randomized and had no comparator group.
- Note that this study was published as an abstract and presented as a poster at a conference. These data and conclusions should be considered to be preliminary until published in a peer-reviewed journal.

Screening of 1,470 children in the metropolitan Atlanta area identified cardiac disease in 0.3%, all of whom were ultimately cleared to receive medication, William T. Mahle, M.D., of Emory University in Atlanta, and colleagues found.

Their study -- presented at the American College of Cardiology meeting here -- found a low positive predictive value of 4.2%.

To screen enough children to identify one with complex congenital heart disease or potentially life-threatening arrhythmia, the cost was \$42,904, which Dr. Mahle called cost-effective.

But these findings don't answer any of the questions that have made pre-prescription cardiac screening so controversial, commented Timothy Gardner, M.D., president of the American Heart Association.

In April 2008, the AHA called for, among other things, a baseline electrocardiogram before children are given stimulant medications in order to identify cardiovascular abnormalities such as hypertrophic cardiomyopathy, long-QT syndrome, and Wolff-Parkinson-White syndrome. (See: [AHA Recommends ECG Before Starting Stimulant Therapy for ADHD](#))

The rationale was to find kids at risk of serious heart arrhythmia since stimulant drugs used to treat attention

disorders affect the heart much like exercise and could trigger events in vulnerable children.

However, the American Academy of Pediatrics challenged this guideline, saying that the blanket requirement for screening in every child was overkill.

Some physicians even thought it was pointless because it wouldn't pick up any heart disease, Dr. Mahle said.

In that sense the results of the current study were reassuring, he said.

His group reviewed all ADHD screening electrocardiograms sent for interpretation at a single center from an outpatient cardiology practice, a hospital laboratory, and community hospitals.

Among the 1,407 cases from April 21 through Sept. 21, 2008, which was the period of highest screening uptake, 92% had a normal or class I abnormality on their initial electrocardiogram.

The five children confirmed to have significant cardiovascular disease included two with bicuspid aortic valve, one with secundum atrial septal defect, and two with Wolff-Parkinson-White syndrome.

The total direct and indirect cost to screen a single child was \$58; the cost to identify one case of any form of heart disease was \$17,162.

However, Dr. Mahle noted that cost-effectiveness depends upon the risk of adverse cardiac events from stimulant medications, "which at present is not clear."

Although screening was not useful from the standpoint of identifying any children with cardiac problems that led to a child being prohibited from taking a stimulant medication, it was still worthwhile in identifying cardiac problems that needed follow-up or treatment, he said.

But the low predictive value suggested that additional strategies may be needed, Dr. Gardner said.

Drs. Mahle and Gardner reported no conflicts of interest.

**Primary source:** American College of Cardiology

Source reference:

Mahle WT, et al "Electrocardiographic screening for cardiac disease among children with attention deficit disorder" ACC 2009; Abstract 1026-230.

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