

NAFLD Detected in 19% of Obese Youth

BY MIRIAM E. TUCKER

FROM THE ANNUAL MEETING OF THE AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS

BOSTON — Nonalcoholic fatty liver disease was found in nearly 1 in 5 of 156 obese children and young adults aged 5-20 years in a cross-sectional analysis.

In the study—the first to assess the prevalence of nonalcoholic fatty liver

els (232 vs. 130 mg/dL), significantly lower HDL cholesterol levels (34 vs. 43 mg/dL), and significantly more insulin resistance (homeostatic model assessment of insulin resistance [HOMA-IR], 7.4 vs. 3.3). There was a significant positive correlation between ALT and triglycerides, HOMA-IR, BMI, and blood pressure, while HDL correlated negatively with ALT, he reported.

The prevalence of NAFLD was twice as high in the males as the females, with 27% vs. 13% having ALT levels above 40 IU/L. Males with NAFLD had significantly higher triglycerides than did females with NAFLD (231 vs. 193 mg/dL), and also had lower HDL cholesterol (34 vs. 35 mg/dL). Males and females with NAFLD did not differ significantly with respect to age,

BMI, or HOMA-IR.

The prevalence of NAFLD rose with age, from 14.5% for 5- to 10-year-olds to 18% for 11- to 15-year-olds, to 31% for 16- to 20-year-olds. However, when broken down by sex, the prevalence of NAFLD actually dropped with age in the females, from 15.1% in the youngest group to 14.7% in the 11- to 15-year group to 7.1% in the older teens/young adults. In contrast, among males the NAFLD, prevalence rose with age from 13.6% to 24.2% to 53%. ■



Over half of obese males aged 16-20 years had NAFLD, said Dr. Rishi Gupta.

VITALS **Major Finding:** Nonalcoholic fatty liver disease in obese children, adolescents, and young adults was twice as high among males as females, with 27% vs. 13% having ALT levels above 40 IU/L. The NAFLD prevalence increased with age in males but decreased with age in females.

Data Source: A prospective, cross-sectional study of 156 obese youth aged 5-20 years.

Disclosures: Dr. Gupta stated that he had no conflicts of interest.

disease (NAFLD) in obese children by sex and age—more than half of the males aged 16-20 years had NAFLD. “Obesity in children is not a cosmetic disease. There are real complications,” Dr. Rishi Gupta reported at the meeting.

The findings suggest that liver function testing should be considered in obese children with dyslipidemia and/or insulin resistance, said Dr. Gupta, a pediatric endocrinology fellow at the State University of New York Downstate Medical Center, Brooklyn.

The multiethnic group of 86 females and 70 males all had body mass indexes (BMIs) greater than the 95th percentile, but did not have diabetes, abnormal thyroid function, or liver disease due to hepatitis or Wilson’s disease. A total of 30 (19%) had levels of alanine aminotransferase (ALT) greater than 40 IU/L, generally considered the cutoff to indicate NAFLD. More recently, cutoffs of greater than 30 IU/L for males and 19 IU/L for females are now being used in Europe and in some U.S. labs.

The subjects with elevated ALT did not differ from those with ALT levels at or below 40 IU/L in age (average, 12 years) or BMI (34 kg/m²), but they did have significantly higher triglyceride lev-

Labs Incorrectly ID ALT Thresholds

MY TAKE The findings by Dr. Gupta and associates are consistent with the existing literature and society guidelines created because of the high rates of NAFLD in overweight and obese children.

The Study of Child and Adolescent Liver Epidemiology was a large autopsy series in a community-wide setting. Based upon liver histology, this study estimated the prevalence of NAFLD at 9.6% in children aged 2-19 years. Moreover, it was demonstrated that fatty liver prevalence increases with age, is higher in boys than girls, and is high in Hispanics and low in African Americans (Pediatrics 2006; 118;1388-93).

Three years ago, an expert committee assembled by the Centers for Disease Control and Prevention, the American Medical Association, and 15 health organizations released recommendations on the Assessment, Prevention, and Treatment of Child and Adolescent Overweight and Obesity. Within those guidelines are recommendations that children aged 10 years and older should receive biannual screening for NAFLD if they have a BMI at the 95th percentile or greater (obese) or a BMI between the 85th and 94th percentiles (overweight) and other risk factors. Furthermore, the committee recommended that an ALT or aspartate transaminase (AST) result twice that of normal levels should prompt a consultation with a pediatric hepatologist (Pediatrics 2007;120:S164-92).

Two years ago, the Lawson Wilkins Pediatric Endocrine Society and the Endocrinology Society published guidelines suggesting that obese children, regardless of age, be screened for NAFLD (J. Clin. Endocrinol. Metab. 2008;93:4576-99).



Last month, a new publication from our group showed that ALT is incorrectly interpreted in many children’s hospitals throughout the United States. Imagine that a primary care physician keeps up with the latest guidelines and correctly screens a child for liver disease but never knows that the child has liver disease because the electronic medical system does not flag the results with an “H,” because the laboratory is using the incorrect threshold for detection. The newly derived thresholds for ALT in boys and girls, if applied, will greatly improve the rate of detecting NAFLD (Gastroenterology 2010;138:1357-64).

Fatty liver disease is important because a small subset of children will develop cirrhosis and end-stage liver disease. As if that was not enough, data from a large study of overweight children with and without NAFLD, showed that having fatty liver is an important risk factor for developing type 2 diabetes and cardiovascular disease (Circulation 2008;118:277-83).

There is no doubt that, since the guidelines have come out, there is a greater level of awareness among primary care providers about the risk of liver disease in overweight and obese children. However, the resulting level of action is still not where it needs to be. More attention needs to be paid toward providing guidance and resources to primary care physicians once they do identify a young patient with NAFLD.

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CDC: Youth Lacking in Opportunities for Physical Activity

VITALS **Major Finding:** Fifty percent of American youths have no parks, community centers, or sidewalks in their neighborhoods. Only 17% of high school students are physically active.

Data Source: Data from a variety of behavioral surveys administered between 2006 and 2009.

Disclosures: None

Only 20% of census blocks nationwide have parks within a half-mile of their boundary, according to a report issued by the Centers for Disease Control and Prevention. Furthermore, 50% of U.S. youths say they lack access to parks, community centers, and sidewalks in their neighborhoods.

The State Indicator Report on Physical Activity, 2010, also documented that only 17% of high school students

report getting the recommended 1 hour of exercise per day. Only 65% of adults reported being physically active, which the report defined as 150 minutes per week of moderate physical exercise, 75 minutes per week of vigorous physical exercise, or a combination of the two.

In a prepared statement, First Lady Michelle Obama tied the lack of physical activity to this lack of access. “Today’s report shows that too many kids are spending too much time in front of the computer or TV or a video game or have limited access to physical activity, because they live in neighborhoods that aren’t safe, go to schools where PE classes have been cut, or live in communities where there are no sports leagues or after-school activity programs,” she said. “We need parents and teachers, business and community leaders, and the public and private sectors to come

together to create more opportunities for kids to be active so they can lead happy, healthy lives.”

In preparing the report, the CDC compiled data from various behavioral surveys administered during 2006-2009. The report also included data on state-level efforts to promote physical activity between 2001 and 2009.

Other findings from the report include:

- ▶ Nationwide, only 30% of high school students take daily physical education classes.
- ▶ A total of 25% of adults say they engage in no leisure-time physical activity whatsoever.
- ▶ Only 20 states require or recommend that elementary schools provide scheduled recess.

The full report is available at http://www.cdc.gov/physicalactivity/downloads/PA_State_Indicator_Report_2009.pdf.

—Robert Finn