小児期の中性脂肪により将来の心血管イベントが予測できる

小児期の中性脂肪増加は成人期の心血管イベントのリスクを上昇させる

Elevated triglycerides in childhood increase risk for cardiovascular events in adulthood

血中中性脂肪レベルの上昇している小児は成人期早期の心血管疾患（CVD）イベントのリスクが高い可能性があるとの研究結果が2009年第58回American College of Cardiology学会で発表された。CVDのないコントロール789人と比較し、CVDを発症した者は小児期中性脂肪の平均値（127対76mg/dl、P<0.0001）およびボディマスインデックス（BMI, 24.3対20.0kg/m^2、P=0.012）が上昇していた。中性脂肪およびBMIの差は小児期の年齢、性別および人種でコントロールと症例をマッチングさせた後も依然として有意であった。多変量解析の結果、CVD歴のある者はまた、CVDのない者と比較し、たばこ乱用、過剰体重または肥満があり（BMI33.2対28.6、P=0.0078）、糖尿病を有し（血糖122対90mg/dl、P=0.0001）、中性脂肪が上昇（251対135mg/dl、P=0.0016）している率が有意に高かった。このリスクファクターの差は成人期の年齢、性別および人種で補正してもなお認められた。この若年者を対象としたスタディではCVD症例数は少なかったが、今回のデータから小児期の中性脂肪上昇および肥満は若年期のCVD発症の原因となっていることが示唆された。

Full Text

Children with elevated levels of triglycerides may be at increased risk of cardiovascular disease (CVD) events in early adulthood, according to research presented at ACC09: the American College of Cardiology's 58th annual scientific session.

This finding is based on a 25 to 30 year follow-up study of 808 out of 1756 subjects, first evaluated as school children between 1973 and 1976. Researchers restudied eligible participants to compare childhood and adult CVD risk factors in those who did and did not develop CVD in their 30s and 40s. Of these, 19 reported cardiovascular events as adults, the most common being heart attacks, angioplasties to re-open clogged coronary arteries, and bypass surgeries.

"Pediatric triglycerides are an exceptionally strong, independent predictor of early onset cardiovascular events," said John Morrison, Ph.D., professor emeritus of Preventive Cardiology, Cincinnati Children's Hospital. "Those who developed cardiovascular disease events tended to have higher levels of triglycerides and were more likely to be overweight or obese in childhood."

Compared to the 789 CVD-free controls, participants who developed CVD had higher average childhood triglyceride (127 vs. 76 mg/dl, p < 0.0001) and body mass index (24.3 vs. 20.0 kg/m^2, p = 0.012). The differences in triglycerides and BMI remained significant after matching the controls and cases (15 to 1) by childhood age, sex and race.

In multivariate analyses, those with a history of CVD were also significantly more likely to abuse tobacco, be overweight or obese (BMI 33.2 vs. 28.6, p =0.0078), live with diabetes (blood sugar 122 vs. 90 mg/dl, p =0.0001), and have elevated triglycerides (251 vs. 135 mg/dl, p =0.0016) as adults compared to the CVD-free group. These risk factor differences remained significant even after adjusting for adult age, sex and race. Normal triglyceride levels are less than 150 mg/dl.

In conducting this longitudinal childhood-to-adulthood study, researchers found participants who had moved away by researching family names and birthdates through various search engines.

Participants' blood was drawn at hospitals in their area and sent overnight to Cincinnati Children's Hospital. Comparisons of the original childhood data between participants and non- participants (those who were not followed) indicated that participants had higher BMI as children (p = 0.004). After adjusting for age, sex and BMI, differences in total cholesterol, LDL cholesterol, HDL cholesterol, and triglyceride levels between the participants and non- participants in childhood were not significant, indicating those who were followed did not differ from those who were not followed with respect to lipid profile.

Although there were few cases of CVD in this young study group, the data suggest pediatric triglycerides and obesity play a role in the development of early CVD.

"In the last decade, we have started to appreciate more the role of triglyceride-rich remnant particles in cardiovascular risk, and how they can accelerate the formation of lipid deposits in the arteries," Morrison said.

"While lowering LDL-cholesterol levels remains a primary therapeutic target, pediatric triglycerides and obesity, as well as smoking and early onset type 2 diabetes, remain serious risk factors for early CVD," said Samrat Yeramaneni, M.D., Clinical Research Associate, Jewish Hospital Cholesterol Center. "Based on our findings, we encourage pediatricians and family practitioners to take notice of elevated levels of triglycerides, which are a part of standard lipid profiles, and screen for overweight and obesity as indicators of future risk of CVD and initiate early interventions."

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