

Letters to the Editor

NAFLD in Children and Adolescents

Original Article: Nonalcoholic Fatty Liver Disease: Common Questions and Answers on Diagnosis and Management

Issue Date: November 15, 2020

See additional reader comments at: <https://www.aafp.org/afp/2020/1115/p603.html>

To the Editor: We thank Dr. Westfall and colleagues for their comprehensive article about nonalcoholic fatty liver disease (NAFLD). The article focused on adults and did not discuss the prevalence of NAFLD in children and adolescents. A retrospective review of liver histology in 742 child autopsies performed from 1993 to 2003 identified an adjusted NAFLD prevalence of 9.6% in two- to 19-year-olds that was standardized for age, gender, race, and ethnicity, and the study found a prevalence ranging from 0.7% in toddlers and preschoolers to 38% in children who were obese.¹ In a more recent study of unexpected childhood deaths in New York City, NAFLD was found histologically in 4.5% of children.²

Obesity, race, and metabolic and genetic factors with comorbidities are associated with NAFLD in children younger than 18 years. Although the literature considers risk factors, biomarkers, and imaging tools to be helpful for diagnosis, opinions differ about the use of invasive diagnostic procedures. A liver biopsy provides a definite diagnosis and allows for the assessment of disease severity; however, concerns about the risks of liver biopsies in adults also apply to children.³

The North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN) issued a clinical practice guideline for the diagnostic evaluation of suspected NAFLD.⁴ The American Academy of Pediatrics (AAP) endorsed the guideline and key recommendations⁵:

- Screen children nine to 11 years of age who have risk factors such as obesity using an alanine transaminase test.

- Rule out other medical conditions (e.g., Wilson's disease, hepatitis C) using additional tests.
- Consider liver biopsy to detect the presence of fat deposits.
- Recommend diet modifications (e.g., reduction of sugar-sweetened beverages) and increased physical activity.

The NASPGHAN and AAP guidelines, pediatric gastroenterologists, and referral centers for patients with NAFLD are valuable resources that can assist family physicians in the diagnosis and management of this complex disease in children.

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References

1. Schwimmer JB, Deutsch R, Kahen T, et al. Prevalence of fatty liver in children and adolescents. *Pediatrics*. 2006; 118(4):1388-1393.
2. Fernandes DM, Pantangi V, Azam M, et al. Pediatric non-alcoholic fatty liver disease in New York City: an autopsy study. *J Pediatr*. 2018;200:174-180.
3. Schwimmer JB. Clinical advances in pediatric nonalcoholic fatty liver disease. *Hepatology*. 2016;63(5):1718-1725.
4. Vos MB, Abrams SH, Barlow SE, et al. NASPGHAN clinical practice guideline for the diagnosis and treatment of non-alcoholic fatty liver disease in children. *J Pediatr Gastroenterol Nutr*. 2017;64(2):319-334.
5. Jenco M. AAP endorses new guidelines on non-alcoholic fatty liver disease. *AAP News*. December 2, 2016. Accessed December 8, 2020. <https://www.aappublications.org/news/2016/12/02/FattyLiver120216#main-content>

In Reply: Thank you for raising awareness of NAFLD in children and adolescents. NAFLD in this population was considered outside the scope of our article; however, this topic warrants family physicians' attention. Your letter describes the prevalence of and risk factors for NAFLD in children and provides current expert consensus recommendations. Adults with the onset of NAFLD in childhood may be most at risk of complications; therefore, primary care clinicians should identify these patients to allow for early intervention.¹

The American Association for the Study of Liver Diseases does not recommend screening for NAFLD in children who are overweight or obese; however, they acknowledge the risk of NAFLD in children with metabolic syndrome, diabetes mellitus, and excess weight.¹ Several national

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This series is coordinated by Kenny Lin, MD, MPH, deputy editor.

organizations provide guidance for the evaluation of suspected NAFLD in children, including the NASPGHAN and AAP. The National Institute for Health and Care Excellence guidelines are based on expert opinion and recommend that clinicians offer liver ultrasonography to children and adolescents with type 2 diabetes who do not use alcohol.² If the results are normal, ultrasonography should be repeated every three years.^{1,2}

Interventions for NAFLD affecting both children and adults include intensive lifestyle modifications. Family physicians can apply their expertise in treating the whole patient (and family) in a compassionate, contextual, and comprehensive way to engage patients in behavior changes.

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References

1. Chalasani N, Younossi Z, Lavine JE, et al. The diagnosis and management of nonalcoholic fatty liver disease. *Hepatology*. 2018;67(1):328-357.
2. Glen J, Floros L, Day C, et al.; Guideline Development Group. Non-alcoholic fatty liver disease (NAFLD): summary of NICE guidance. *BMJ*. 2016;354:i4428.

Updated Statistics for Liver Biopsy Risk

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To the Editor: Overall, the article by Dr. Westfall and colleagues was well written; however, we have concerns about the 1.6% death rate the authors quoted for liver biopsy. This statistic was obtained from a 1999 article that provided the complication and fatality rates based on 484 cases from a single hospital in Thailand from 1987 to 1996.¹

A 2010 article provides more contemporary and accurate data on liver biopsy procedures.² The study included 61,187 patients in the United Kingdom National Health Service from 1998 to 2005 and found that all-cause mortality rates from liver biopsy were closer to 0.2%, with the biopsy itself implicated as the direct cause of death in about one in 10,000 procedures.

Physicians reading Dr. Westfall's article might overestimate the risks of liver biopsy

and be reluctant to refer their patients for an indicated test or not accurately counsel their patients regarding the risks and benefits of this procedure.

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References

1. Thampanitchawong P, Piratvisuth T. Liver biopsy: complications and risk factors. *World J Gastroenterol*. 1999;5(4):301-304.
2. West J, Card TR. Reduced mortality rates following elective percutaneous liver biopsies. *Gastroenterology*. 2010;139(4):1230-1237.

In Reply: We thank Drs. Stott and Dang for their letter and are grateful for their commitment to ensuring the accuracy and clarity of our article. There are significant variations in the reported morbidity and mortality rates associated with liver biopsies because of the retrospective nature of most studies, variations in indications for biopsy, patient characteristics, biopsy technique, and inconsistency in the definitions of complications (i.e., some studies do not distinguish between death as a consequence of biopsy and death from other causes). The 2020 guidelines on the use of liver biopsy in clinical practice from the British Society of Gastroenterology, the Royal College of Radiologists, and the Royal College of Pathologists address the lack of established complication figures by strongly recommending that clinicians "use local data where available, tailored to the patient's individual situation."¹

We agree that clinicians must cautiously interpret the data about complications of liver biopsy and not overestimate the risks, which could deter referral for the procedure when necessary. Our article has been updated to reflect this.

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Reference

1. Neuberger J, Patel J, Caldwell H, et al. Guidelines on the use of liver biopsy in clinical practice from the British Society of Gastroenterology, the Royal College of Radiologists, and the Royal College of Pathology. *Gut*. 2020;69(8):1382-1403. ■