Could Glucocorticoids Improve Enteral Feeding?

Short bowel syndrome (SBS) in children is a rare disease with extremely high health care costs due to long-term parenteral nutrition (PN) requirements and the potential for frequent hospitalizations. Many patients can have PN requirements reduced or can wean from PN completely if enteral nutrition can be advanced successfully. However, risk factors such as production of inflammatory mediators and bacterial overgrowth can lead to intestinal inflammation in pediatric patients with SBS, and the authors of this study looked at the potential benefit of glucocorticoids in this specific population.

This retrospective study from a medical center with expertise in pediatric intestinal rehabilitation looked at all pediatric patients with SBS at their institution who had undergone glucocorticoid therapy for intestinal inflammation diagnosed by endoscopy with biopsy. Patients on glucocorticoids for organ transplantation or food allergy therapy were excluded. Those patients with SBS and who received glucocorticoid therapy received either prednisone or budesonide. Specifically, patients with high parenteral nutrition needs initially were placed on prednisone and then tapered to budesonide with sulfasalazine. Sulfasalazine was added if colonic inflammation was present. Patients with lower parenteral nutrition needs were initially placed on budesonide and sulfasalazine, and budesonide was eventually weaned off. All patients had linear growth monitored, and bone age and bone density were checked annually. Standard laboratory data was reviewed as well.

A total of 15 patients (9 girls) were included in this study. Gastroschisis was the leading cause of SBS occurring in 10 of the patients, and the median small bowel length for this patient group was 46 centimeters with most patients having at least half of their colon length conserved. Significant bowel inflammation with associated eosinophilia was present in the biopsies of 6 patients. The median age of starting glucocorticoid therapy and the median length of time these patients were on parenteral nutrition was 3.3 years. The median time of glucocorticoid therapy was 18 months (range 1-64 months). The ability to wean parenteral nutrition occurred in 11 patients once glucocorticoid therapy was initiated, and 7 patients were able to stop parenteral nutrition. The authors noted that linear growth was not affected, and no metabolic bone disease occurred in the study group.

Although the results are encouraging, it is still unknown if glucocorticoid therapy has the potential to reduce or remove parenteral nutrition needs in pediatric patients with SBS. The exact mechanisms for improvement in such patients are unknown (including the potential of intestinal microbiome changes), and a randomized controlled trial for this type of therapy is needed.

Wang F, Gerhardt B, Iwansky S, Hobson B, Logan S, Mercer D, Quiros-Tejeira R. Glucocorticoids improve enteral feeding tolerance in pediatric short bowel syndrome with chronic intestinal inflammation. Journal of Pediatric Gastroenterologists and Nutrition 2021; 73: 17-22.

Underreporting of Nonalcoholic Fatty Liver Disease

Nonalcoholic fatty liver disease (NAFLD) is not uncommon in children and can be associated with hepatic fibrosis with the risk of long-term associated mortality. Thus, early detection is important in order to monitor disease activity and to provide resources to improve health outcomes. Children often undergo computed tomography (CT) of the abdomen for various reasons, and the authors of this study evaluated for incidental hepatic steatosis findings in a group of children undergoing CT for nephrolithiasis.

This retrospective, single-center study included patients younger than 18 years of age who underwent abdominal CT imaging for concern of nephrolithiasis over a 5-year period. Patients with known medical conditions that could cause steatosis such as metabolic/storage diseases, Wilson disease, autoimmune hepatitis, and viral hepatitis were excluded. Patients with asplenia also were excluded. Patient parameters including height, weight, age, and standard laboratory data were obtained from the electronic medical record. Liver and spleen parenchymal attenuation were measured with moderate-to-severe steatosis defined as a histologic fat concentration greater than 30%. This value (defined as "original criteria") was obtained by using specific parameters of liver and spleen attenuation differences calculated

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as Hounsfield Units on CT. Mild steatosis was defined as histologic fat concentrations ≥ 5% and was determined using mDIXON-Quant magnetic resonance imaging to calculate Hounsfield Units (defined as "secondary criteria"). These two criteria categories were compared to patients who underwent CT for nephrolithiasis who did not have hepatic steatosis. Kappa statistics were used to determine degree of agreement of imaging findings between 2 radiologists.

A total of 584 patients with appropriate inclusion criteria underwent abdominal CT for a diagnosis of nephrolithiasis during this period. Most patients were non-Hispanic females, and the median age of the patients was 14.8 years. The median body mass index (BMI) was at the 73rd percentile with 41% of patients being defined as overweight or obese. It was noted that 541 patients had no steatosis on imaging while 42 patients did have steatosis. The two CT criterium ("original" for moderate to severe; "secondary" for mild) used to determine steatosis demonstrated a prevalence rate of steatosis between 3%-35%. Kappa statistics between radiologists showed excellent correlation of findings. No significant difference in ethnicity was found between patients with or without steatosis. However, BMI percentiles and median serum alanine aminotransferase (ALT) levels were significantly higher in patients with any degree of steatosis compared to patients with no steatosis. Steatosis ranged between 6%-47% in those patients who were overweight or obese compared to 0.3%-24% of patients with a normal BMI percentile. Additionally, steatosis was present in 11%-43% of patients with elevated ALT levels while steatosis was present in 0.7%-27% of patients with normal ALT levels. Finally, using a non-contrast CT liver attenuation value of less than 48 Hounsfield Units, only 12 of 42 patients (29%) had steatosis reported in the original radiology reports, and only 2 of these 12 patients had a known history of NAFLD.

This study suggests that steatosis can be found during CT imaging of the abdomen ordered for non-hepatic reasons. If steatosis is found, it is essential to have such patients be referred to pediatric gastroenterology to assist with diagnosis and treatment options to prevent the long-term complications of NAFLD.

Okura H, Yodoshi T, Thapaliya S, Trout A, Mouzaki M. Under-reporting of hepatic steatosis in children: a missed opportunity for early detection. Journal of Pediatrics 2021; 234: 92-98.

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Answers to this month's crossword puzzle:

1 M	E	2 D	I	3 T	E	4 R	R	5 A	N	E	A	6 N	7 R
E	■	N	■	E	■	U	■	B	■	■	■	U	O
8 S	C	A	N	■	9 I	N	F	L	I	10 X	I	M	A	B
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12 L	I	13 P	I	D	O	14 M	E	■	15 S	A	F	E	S	T
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31 V	A	R	I	C	E	A	L	■	32 C	A	P	S	I	D
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34 P	A	R	I	E	T	E	S	■	35 T	E	N	S	E	D