

**Frequency and Impact of Surveilling Thyroid, Blood Count, and Vitamin D Studies
in Patients with Celiac Disease at Ann & Robert H. Lurie Children's Hospital**
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BACKGROUND: Patients with celiac disease are at risk for comorbidities including anemia, thyroid disease and vitamin D deficiency. Recommendations outlined in the 2016 North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN) Clinical Report on the Diagnosis and Treatment of Gluten-related Disorders for patients with celiac disease include annual complete blood count (CBC), thyroid function tests (TFTs) and vitamin D level. The report indicates that this guideline is based only on consensus and expert opinion, as there is not sufficient evidence at this time.

OBJECTIVES: To evaluate the adherence to the recent NASPGHAN guidelines of annual monitoring of CBC, TFTs, and vitamin D levels in patients with celiac disease who are followed at Ann & Robert H. Lurie Children's Hospital. We further aimed to determine if there is benefit in measuring these values annually by evaluating if a clinical intervention or change in management occurred when any of these results were abnormal.

DESIGN/METHODS: Through IRB approved retrospective chart review, we identified 129 patients with celiac disease who had at least one follow-up visit in gastroenterology clinic, at least one year from diagnosis, between August 1, 2016 and July 21, 2018. As patients had repeated follow-up visits, descriptive statistics were reported overall and by visit for all variables of interest, including demographic variables and outcomes.

RESULTS: Of 129 patients, 64.3% (n=83) had at least one of the recommended screening labs obtained, 33.3% (n=43) had no labs ordered, and 2.3% (n=3) had labs ordered but not obtained. Of patients with any labs ordered, 49.6% (n=64) had a CBC ordered, 23.3% (n=30) had TFTs ordered, and 52.7% (n=68) had vitamin D levels ordered. Of patients with labs obtained (n=83), 62.2% (n=51) had at least one abnormal result, including 1.7% (n=1) with low hemoglobin, 0% (n=0) with abnormal TFTs, and 48.4% (n=30) with low vitamin D. An intervention in response to the abnormal result was made in 71% (n=22) of patients.

CONCLUSIONS: The NASPGHAN guideline released in 2016 regarding annual monitoring of CBC, TFTs, and vitamin D levels in celiac patients is not consistently followed at our institution. Given the high frequency of abnormal lab results, particularly vitamin D, future quality improvement may be indicated to help improve adherence to this guideline. A larger sample size is needed to evaluate the detection of thyroid disease and anemia in this population. Vitamin D deficiency in the setting of adherence to a gluten-free diet may be more prevalent than previously thought.