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CLINICAL PRACTICE GUIDELINES

AGA Clinical Practice Guidelines on the Gastrointestinal Evaluation of Iron Deficiency Anemia

Cynthia W. Ko,[1] Shazia M. Siddique,[2] Amit Patel,[3] Andrew Harris,[4] Shahnaz Sultan,[5] Osama Altayar,[6] and Yngve Falck-Ytter[7,8]

[1]*Division of Gastroenterology, University of Washington School of Medicine, Seattle, Washington;* [2]*Division of Gastroenterology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania;* [3]*Division of Gastroenterology, Duke University and the Durham Veterans Affairs Medical Center, Durham, North Carolina;* [4]*Department of Medicine, Case Western Reserve University School of Medicine and Louis Stokes Cleveland Veterans Affairs Medical Center, Cleveland, Ohio;* [5]*Division of Gastroenterology, Hepatology, and Nutrition, University of Minnesota, Minneapolis Veterans Affairs Healthcare System, Minneapolis, Minnesota;* [6]*Division of Gastroenterology, Washington University School of Medicine, St Louis, Missouri; and* [7]*Departments of Medicine and Gastroenterology, Case Western Reserve University, Cleveland; and* [8]*Veterans Affairs Northeast Ohio Health System, Cleveland, Ohio*

This document presents the official recommendations of the American Gastroenterological Association (AGA) on the gastrointestinal evaluation of iron deficiency anemia (IDA). The guideline was developed by the AGA Institute's Clinical Guidelines Committee and approved by the AGA Governing Board. It is accompanied by a technical review that provides a detailed synthesis of the evidence from which these recommendations were formulated.[1] For a better understanding of this guideline, we recommend reading the accompanying technical review. The technical review, guideline, and clinical decision support tool are available on the AGA website (www.gastro.org) free of cost.

Development of this guideline and the accompanying technical review was fully funded by the AGA Institute without additional outside funding. Members of the Guideline Panel and Technical Review Panel were selected by the AGA Clinical Guidelines Committee Chair after careful consideration of all relevant conflict of interests and in accordance with the National Academy of Medicine (formerly the Institute of Medicine) standards for trustworthy guidelines. The guideline and accompanying technical review underwent independent peer review and were disseminated broadly during the 30-day open public comment period; comments were collated by the AGA staff and were reviewed and carefully considered by the Guideline Panel and technical review teams, respectively. All comments were addressed in an internal response document or incorporated as revisions to the final documents. In accordance with the Clinical Guidelines Committee policies, all clinical guidelines are reviewed annually at the AGA Clinical Guideline Committee meeting for new information. The next update for these guidelines is anticipated 3 years from publication (2023).

Anemia is a common diagnosis in both men and women, and iron deficiency is the most common cause of anemia worldwide. In the United States in 1999–2000, 2% of men aged 16–69 years, 12% of women aged 12–49 years, and 9% of women aged 50–69 years were iron deficient, and 4% of women aged 20-49 years and 3% of women aged 50-69 years had IDA.[2] The overall prevalence of IDA in North America in 2010 was estimated at 2.9%.[3] The etiology of IDA can include suboptimal oral intake, poor absorption of oral iron, and/or chronic blood loss from gastrointestinal and other sources. Gastrointestinal malignancy is the most serious potential cause, although other etiologies, such as peptic ulcer disease, celiac disease, inflammatory bowel disease, or other gastrointestinal tract lesions, can be detected and treated, potentially improving quality of life and patient-important outcomes.

Normal total body iron content varies between 3000 and 4000 mg, the majority of which is found in red blood cells (ie, in hemoglobin); a smaller amount of iron is found in storage compartments, including hepatic macrophages, resident bone marrow cells, and others. Iron is also bound to transferrin and other proteins, such as myoglobin, or in its storage forms as ferritin or hemosiderin. Most dietary iron absorption occurs in the duodenum and proximal jejunum. About 1–2 mg of iron is lost daily through desquamation of skin and enteric cells or through minor blood loss, which in normal individuals is balanced through intestinal absorption of dietary iron. Excess iron loss can occur through gastrointestinal bleeding, urinary losses, shedding of skin cells, or other sources of blood loss (eg, menstrual bleeding). In most adults without an obvious source of blood loss, evaluation of the gastrointestinal tract for a source of chronic blood loss or a malabsorptive process is indicated.

There is significant practice variability in the initial gastrointestinal evaluation of IDA, with uncertainty about the proper diagnostic criteria for iron deficiency in patients with anemia, the type and sequence of diagnostic evaluation with endoscopy or noninvasive testing, the utility of investigations, such as routine gastric biopsies to detect *Helicobacter pylori* infection or autoimmune atrophic gastritis,

Abbreviations used in this paper: **AGA, American Gastroenterological Association; CI, confidence interval; GRADE, Grading of Recommendations Assessment, Development and Evaluation; IDA, iron deficiency anemia; PICO, population, intervention, comparator, outcome.**

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