Advancing OB/GYN Knowledge, Competence, and Performance Related to Abnormal Uterine Bleeding and Intravenous Iron Supplementation for Effective Management of Iron Deficiency Anemia: Outcomes Analysis from a 2019 Educational Initiative

Background: Iron deficiency anemia (IDA) is a multifaceted condition associated with immense obstetrical morbidity and mortality, and is especially prevalent in female patients of reproductive age.

Abnormal uterine bleeding (AUB), which often manifests clinically as heavy menstrual bleeding (HMB), is the leading cause of IDA among reproductive age women in the United States, with a prevalence ranging from ~30-50% in this patient population; further, HMB is estimated to account for nearly one-third of all IDA causes worldwide. For these reasons, AUB/HMB is generally accepted as the primary causal source of IDA in daily clinical practice.

As frontline clinicians who routinely manage HMB, OB/GYNs are optimally positioned to subsequently recognize, diagnose, and treat the IDA precipitated by HMB. However, to ensure the provision of safe and effective care, adaptive educational initiatives with an emphasis on evolving iron supplementation strategies are needed.

Methods: Creative Educational Concepts (CEC) conducted a literature review, needs assessment, and detailed gap analysis to identify prominent clinical and educational gaps that exist among OB/GYNs with regard to IDA sign and symptom recognition, epidemiology, clinical gravity and risk factors, formal diagnosis, and appropriate treatment.

Consequently, our team at CEC composed a responsive, multi-pronged educational design targeted to obstetricians, gynecologists, and women's health professionals, in a tailored effort to bridge the aforementioned gaps in current practice and improve outcomes for patients.

CEC consulted with top experts in obstetrics and gynecology, maternal fetal medicine, pelvic surgery, and hematology at every stage of the educational design and delivery continuum, from proposal ideation to content development to live, on-site presentation.

To dynamically engage the target audience, especially at the community, grassroots level, this educational initiative was delivered at a series of five American College of Obstetricians and Gynecologists (ACOG) District Meetings across the United States; live meetings were held in Lake Geneva, WI; San Diego, CA; Kapalua, HI; Rockport, ME; and Manhattan, NY.

Results:

- 203 total clinicians were educated across the initiative

- Profession
    - MD/DO - 93%
    - APRN/CNM - 3%
    - RN - 2%
    - Other - 2%

- Specialty
    - General OB/GYN - 81%
    - Maternal/fetal Medicine - 11%
    - Reproductive endocrinology - 4%
    - Pelvic medicine/surgery - 2%
    - Other - 2%

- >5,000 IDA patients potentially impacted per month as a result of the initiative

- Statistically significant advances in learning and knowledge were achieved from pre- to post-activity for all tested educational gaps:
    - Identification of IDA risk factors (85% post vs. 46% pre; P<0.001)
    - Clinical implications of AUB (95% post vs. 74% pre; P<0.001)
    - Appropriate clinical utility of IV iron (93% post vs. 63% pre; P<0.001)

- Top intended practice changes:
    - Consider IV iron supplementation in my patients with IDA for whom oral iron supplementation is ineffective or intolerable
    - Consider IV iron supplementation as first-line treatment for my patients with severe IDA, ongoing bleeding, and/or absorption deficiencies
    - Share information learned with colleagues and other members of my healthcare team

- Top anticipated barriers to change:
    - Limited experience with parenteral iron supplementation therapies
    - Patient non-adherence
    - Inadequate care coordination between OB/GYNs and primary care physicians

- Given an HMB-associated IDA patient case, activity attendees demonstrated a significant retention of knowledge and clinical performance improvement from pre-test to 4-week follow-up related to appropriate initiation of IV iron
    - 90% at 4-wk follow-up vs. 63% at pre-test (P=0.018)

Conclusions: Our 2019 ACOG District Meeting educational initiative precipitated substantive practice advances in knowledge, competence, and performance among OB/GYNs and women's health professionals related to IDA management.

Statistically significant performance improvements in appropriate initiation of IV iron for treatment of HMB-associated IDA were achieved at follow-up assessment.

Learning and knowledge endpoints for IDA risk factor recognition and AUB clinical implications were not retained with statistical significance at follow-up assessment, thereby evidencing residual educational gaps and a need for ongoing education in this space.