Question # 1:
What key clinical factors determine the need for IV iron repletion for iron deficiency anemia (IDA) in the setting of inflammatory bowel disease (IBD)? And how have parenteral, IV iron repletion strategies changed to make it more convenient and effective for patients with IBD?

Question # 2:
Is there trial-based support for employing IV iron repletion with ferric carboxymaltose (FCM) in patients with IBD? If so, what do the studies teach us about the rapidity of HgB target goal attainment?

Question # 3:
In a patient with IBD, how do you determine the need for IV iron repletion and what role do hepcidin and impaired iron resorption play in supporting use of parenteral IV iron formulations?

Question # 4:
How do you monitor, risk stratify, and assess your GI patients to determine the best approach to iron repletion in any individual patient, i.e. oral therapy versus high-dose IV iron infusion with FCM?

Question # 5:
How do you decide which IV iron formulation—dextran-based agents versus IV ferric carboxymaltose (FCM)—you are going to employ once you determine IV iron repletion is the appropriate intervention?
Question # 6:
What are the limitations of oral iron therapy? Drug interactions? Tolerance? Regimen adherence? How have the new high-dose IV iron formulations changed the paradigm for iron repletion?

Question # 7:
In what ways do high-dose IV iron formulations such as FCM reduce the barriers to use that once accompanied parenteral iron?

Question # 8:
Can you summarize the current state-of-the-art for treating IDA in patients with IBD, and the significance of new high-dose IV iron formulations and their potential advantages?

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Question # 9:
Why is it important to assess for modifiable risks, such as iron deficiency anemia, before taking patients to surgery; and how often and frequent is iron deficiency, with or without anemia, one of those modifiable risks requiring intervention?

Question # 10:
What screening programs have you and your anesthesiology, internal medicine, and surgical colleagues implemented to mitigate the transfusion and other risks associated with iron deficiency anemia in patients undergoing surgery?

Question # 11:
What percentage of pre-surgical patients ultimately requires some form of iron repletion?

Question # 12:
How do you actually treat and manage patients who have iron deficiency anemia prior to surgery? What is the rationale for IV iron repletion?

Question # 13:
And how have the strategies and formulations changed and improved over time?

Question # 5:
Can you take us through the specific, newly available IV iron infusion formulations, including ferric carboxymaltose, that you use in your program, and explain the barriers, convenience advantages, and practical dosing dimensions of this strategy?

Question # 15:
What are the specific parameters—length of infusion, dose, dosing schedule, convenience issues, and practical dimensions—that physicians should be aware of when employing IV iron repletion using ferric carboxymaltose (FCM)?

Question # 16:
What are the specific biomarker triggers that would lead you to replenish a pre-surgical patient with a high dose iron infusion strategy such as FCM?

Question # 17:
Do you routinely do follow up testing of iron, reticulocyte count, and Hgb after an initial infusion of iron?

Question # 18:
Given the need for predictable and convenient iron repletion, what percentage of your patients actually receive their pre-surgical iron through high dose, parenteral IV iron infusion?

Question # 19:
What is the evidence—data and experiential—that high-dose, IV iron preparations predictably provide iron repletion in your at-risk population with IDA?

Question # 20:
Do you also evaluate patients post-operatively to detect evidence of iron deficiency or iron deficiency anemia? What are the clinical implications for IV iron repletion therapy upon discharge?

Question # 21:
How many institutions currently have iron-screening and management algorithms in place for blood management as you describe it for modifiable risk related to iron deficiency anemia?

Question # 22:
How has the availability of convenient, two-dose, high dose IV iron infusion formulations helped clinicians overcome barriers and implement surgery-related initiatives aimed at modifying pre-operative risks related to iron deficiency anemia?

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Medical Director of the Digestive Disease Center
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Question # 23:
What key clinical factors determine the need for IV iron repletion for iron deficiency anemia (IDA) in the setting of inflammatory bowel disease (IBD)? And how have IV iron repletion strategies changed to make this strategy more convenient and effective for patients with IBD?
Question # 24:
What are the unique considerations regarding oral versus IV iron repletion in patients with Crohn’s Disease? And how has hepcidin helped our understanding of iron repletion in these patients?

Question # 25:
Is there trial-based support for employing IV iron repletion with ferric carboxymaltose (FCM) in patients with IBD? If so, what do the studies teach us?

Question # 26:
In patients with IBD, how do we balance the need for immediate iron repletion and the long-term requirements for continuing iron maintenance dosing in IBD patients with chronic inflammation and high hepcidin levels?

Question # 27:
In addition to the convenience and simplicity of twice-dosed ferric carboxymaltose (FCM) what do we know about the pivotal evidence supporting the comparative efficacy of this formulation for achieving repletion of iron stores and attaining desired Hgb levels?

Question # 28:
How have the new, high-dose IV iron infusions such as FCM changed the paradigm for when, why, how, and in whom IV iron repletion represents a foundational strategy?

Question # 29:
How do you monitor, risk stratify, and assess your GI patients to determine the best trajectory for iron repletion, i.e. oral therapy versus high-dose IV iron infusion with FCM?

Question # 30:
What are some of the practical aspects of administering high dose IV iron? How has the availability of high-dose FCM changed your practice and approach to IV iron infusion in the setting of IBD?

Question # 31:
How does the availability of high-dose IV iron repletion help address the quality-of-life issues (such as fatigue) associated with iron deficiency and IDA?

Question # 32:
What clinical signs or markers do you use to make the decision as to whether oral therapy versus IV iron infusion with FCM is most appropriate?

Question # 33:
What have been the major changes over the past few years as far as IV iron repletion, and how has the safety and convenience of newly available IV iron formulations such as ferric carboxymaltose (FCM) changed the landscape of treatment for IDA?

Question # 34:
Given the increasing safety and convenience of IV iron repletion, what patient types and disease states are you seeing in your infusion center who are excellent candidates for IV iron infusion?

Question # 35:
How do you identify patients in whom oral iron repletion is a reasonable course to pursue, and those in whom an early attempt at IV iron repletion is the appropriate strategy? Can you predict non-responders to oral iron?

Question # 36:
What have been the major changes over the past few years as far as IV iron repletion, and how has the safety and convenience of newly available IV iron formulations such as ferric carboxymaltose (FCM) changed the landscape of treatment for IDA?

Question # 37:
How do you suggest we select among the various IV iron formulations that are available? What criteria do you evaluate that steers you toward one formulation, such as ferric carboxymaltose, versus another?

Question # 38:
In addition to the convenience and simplicity of twice-dosed ferric carboxymaltose (FCM) what do we know about the evidence supporting the efficacy of this formulation for achieving repletion of iron stores and attaining desired Hgb levels?

Question # 39:
What is the concept of “total iron infusion” and how does this relate to the availability of high-dose IV iron infusions?

Question # 40:
What is the difference between “physiological” and “functional” iron deficiency? And how does each kind of iron deficiency respond to iron repletion strategies?

Question # 41:
In this new era of high dose IV iron formulations, how should we decide whether a trial of oral iron therapy is appropriate, or whether an IV infusion is the optimal approach?
**Question # 42:**
Given the limitations of oral iron therapy, and misconceptions about IV iron repletion, what are the barriers and knowledge gaps that clinicians need to overcome to optimize use of high-dose IV iron formulations?

**Question # 43:**
How does the administration of IV iron overcome the hepcidin-mediated inhibition of iron absorption across multiple chronic conditions associated with IDA?

**Question # 44:**
Are there differences in the capacity of different IV iron formulations to cause confounding alterations in MRI scans in patients who receive IV iron prior to MRI scanning? Please identify any cautionary notes.

**Question # 45:**
For what disease states should high-dose, IV iron be the dominant strategy? Can you review these for us, emphasizing those conditions characterized by poor iron absorption, non-adherence, oral iron-induced side effects, or the consistent need for IV iron repletion to achieve predictable outcomes? Please consider patients with non-dialysis CKD, IBD, heavy uterine bleeding, and pregnancy.

**Question # 46:**
As an advocate of “seamless” iron repletion, can you contrast and compare the indications, doses, and methods of administration for the two high-dose, IV iron formulations, ferric carboxymaltose and ferumoxytol?

**Question # 47:**
For which IV iron preparations, if any, is a test dose required or recommended?

**Question # 48:**
Considering the availability of safe, effective, and convenient high-dose IV formulations, should these agents displace the established role of oral iron therapy and, if so, for what specific patients with IDA should they be considered a preferred strategy?

**Question # 49:**
Can you review for us the uses and indications of IV iron formulations that currently are available in the U.S.?

**Question # 50:**
In what ways do high-dose IV iron formulations reduce the barriers to use that once accompanied parenteral iron? Are they safer? Are they more convenient?

**Question # 51:**
What practical advantages have been reported or observed with the newer high-dose IV iron formulations?

**Question # 52:**
Is there trial-based support for employing IV iron repletion with ferric carboxymaltose (FCM) in patients with IDA? If so, what do the studies teach us about the rapidity and comparative efficacy of Hgb target goal attainment?

**Question # 53:**
What is the safety data for ferric carboxymaltose (FCM) in patients with IDA?

**Question # 54:**
What’s your take-away from the pivotal trials evaluating FCM for IDA?

**Question # 55:**
What are the challenges, barriers, and cautionary notes related to oral iron repletion? And how does IV iron mitigate these issues?

**Question # 56:**
What is the role of high dose IV iron infusion in the setting of women’s health, pregnancy, and obstetrics-gynecology?

**Question # 57:**
For which clinical situations in the setting of IDA in women with ob-gyn-related issues are you employing high-dose IV iron repletion with ferric carboxymaltose?

**Question # 58:**
How do convenience, compliance, and regimen adherence enter your decision-making process in choosing an iron repletion agent and strategy?

**Question # 59:**
From a practical perspective, how do the convenient dosing schedules and infusion times impact your approach to high-dose IV iron infusion? Do you give iron in the office setting or in an infusion center?
Question # 60:
What are the unique considerations related to managing IDA in the ob-gyn setting? What is the role of high-dose IV iron repletion in these subsets of patients?

David Henry, MD, FACP
Clinical Professor of Medicine
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Editor, Community Oncology
Philadelphia, Pennsylvania

Question # 61:
Do you believe there is a significant role for oral iron therapy in the cancer patient with IDA?

Question # 62:
What is the relationship between hepcidin levels and a cancer patient’s likelihood of responding to ESA?

Question # 63:
Are hepcidin levels predictive of response to oral iron therapy? Are those assays commercially available?

Question # 64:
What are the documented advantages of high-dose IV iron infusion?

Question # 65:
Given the safety and efficacy that has been demonstrated for such high-dose IV iron formulations as ferric carboxymaltose and others, what is the rationale for employing these agents and preferred intervention for patients with IDA?

Question # 66:
How often do we fail to treat IDA in the cancer patient?

Question # 67:
Is there general agreement about when to use IV iron repletion in conjunction with ESA in cancer patients with IDA? What do the trials show about adjunctive IV iron use in this setting?

H. Tilman Steinmetz, MD
Professor
Outpatient Clinic for Haematology and Oncology
Cologne Germany

Question # 68:
What are the frequently encountered shortcomings and limitations of oral iron therapy when used for iron repletion for IDA?

Question # 69:
What is the pivotal role of hepcidin as an inhibitor of iron transport across the GI tract; and how may it be a predictive marker of inadequate iron absorption in chronic inflammatory disease states?

Michael Hedenus, MD, PhD
Head of Hematology
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Sundsvall Sweden

Question # 70:
What is the rationale for combining IV iron repletion with erythropoietin-stimulating factor in the setting of IDA?

Question # 71:
How often is oral iron therapy an inadequate strategy for achieving iron repletion targets in the setting of cancer? What mechanisms are responsible for a poor response to oral iron in this population?

Question # 72:
What is the current role of IV iron formulations for treating IDA in cancer patients?

Question # 73:
Can IV iron infusion alone help reduce the need for blood transfusions? Are there studies supporting this advantage of IV iron administration in appropriately selected patients?

Question # 74:
What are the properties, safety issues, and dosing considerations of the established versus newly approved formulations for IV iron repletion, in particular, ferric carboxymaltose?

Question # 75:
Can you describe the science, metabolism, and medicine behind elevated hepcidin levels, as markers of inflammation, and the possibility of using hepcidin assays to predict response to oral iron therapy?

Question # 76:
What are the potential compliance, hemoglobin target goal, and convenience issues associated with high-dose iron repletion? Can you give us a real life patient example?

Question # 77:
With respect to side effects and stability, how does the new carboxymaltose-based iron formulation differ from the older dextran-based IV formulations?

Question # 78:
What are the benefits of early, pro-active diagnosis and management of IDA in the cancer setting and what is the role of high-dose iron infusions in this patient population?

Question # 79:
Do we have clinical trial evidence that suggests IV iron repletion, as compared to oral iron, leads to improved quality of life, reduced blood transfusions, improved patient satisfaction, and, in general, improved clinical outcomes? In what settings and disease states?
Question # 80:
Among the high-dose IV formulations you use in Europe, which formulation has the greatest body of clinical evidence for use across a broad continuum of patients with IDA?

Stefan Anker, MD, PhD
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Applied Cachexia Research
Department of Cardiology
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Question # 87:
What is the relationship between heart failure (HF) and iron deficiency anemia (IDA)? Between HF and iron deficiency?

Question # 88:
What is the rationale for treating IDA or iron deficiency in patients with HF? What have studies with erythropoietin-stimulating factor (ESF) shown in patients with HF? And what about IV iron repletion therapy?

Question # 89:
Can you summarize the trial design and results of studies—including FERRIC-HF and FAIR-HF—evaluating the safety and efficacy of ferric carboxymaltose in ameliorating symptoms, walking distance, and exercise tolerance in patients with HF and iron depletion or IDA?

Takeshi Yokoo, MD, PhD
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Question # 91:
Can you explain why some iron infusion formulations, such as ferumoxytol, have the potential for interfering with the results of MRI scans? What are the mechanisms by which this formulation alters imaging patterns in patients undergoing MRI?

Question # 92:
Which of the T1, T2, and T2-star-dependent contrast mechanisms required to achieve optimal MRI scans and subsequent interpretations can by affected by iron infusion?

Question # 93:
Based on one case report identifying a patient in whom ferumoxytol produced MRI imaging results that were compromised after iron infusion, what were the alterations in MRI scans and confounding issues when this iron formulation was used prior to radiographic study with MRI? What are the practical implications?
Question # 94:
In a second case report, in a patient with a different underlying disease, how did ferumoxytol infusion affect the MRI results? What problematic aspects in interpretation of MRI scans following ferumoxytol can be expected based on the findings reported in this patient?

Question # 95:
Based on the two published case reports noting confounding of MRI scan results with ferumoxytol infusion, what is your practice-based, FDA-consistent guidance for how this infusion should be employed in IDA patients requiring MRI scans as part of their clinical work-up?

Question # 96:
In patients with IDA who require IV iron repletion, are there IV iron formulations, such as ferric carboxymaltose, that do not appear to cause problems with interpretation of MRI scans; and, that do not carry an FDA warning about MRI-related issues?

Michael A. McDevitt, MD, PhD
Assistant Professor of Medicine and Oncology
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Question # 97:
Can you briefly summarize the etiologies for iron deficiency anemia across the multispecialty disease spectrum?

Question # 98:
What are the most important and common barriers to inadequate iron repletion when employing oral iron therapy? What mechanisms are responsible for a poor response to oral iron?

Question # 99:
What are the specific laboratory, symptomatic, or situational triggers in patients with IDA that would mandate the use of IV iron therapy to achieve iron repletion and other clinical objectives?

Question # 100:
How does chronic disease—across the spectrum of multiple inflammatory disorders—predispose to development of IDA, and what is the role of hepcidin with respect to impaired iron absorption in these conditions?

Question # 101:
Can you describe the science, metabolism, and medicine behind elevated hepcidin levels, as markers of inflammation; and, how high hepcidin levels, and new assays, may predict inflammation that suggests poor oral iron absorption and therefore, the need for IV iron infusion?

Question # 102:
In what situations do hematologists, and more likely, other specialists, fail to recognize the importance of IV iron repletion as the dominant strategy to correct iron deficiency anemia, and how does the availability of high-dose iron infusion therapies lower the barriers to use of IV iron on a more consistent basis for IDA-related conditions?

Question # 103:
What factors go into the “selection equation” for IV iron formulations? Patient preferences? Dosing Frequency? Other factors?

Question # 104:
For what disease states is high-dose iron repletion especially important? Can you review these for us, emphasizing which disease states are likely associated with either poor iron absorption or the requirement for prompt IV iron replacement?

Question # 105:
What do we still need to know to optimize management of iron repletion across the broad continuum of disorders that typically require IV iron repletion?

Question # 106:
With respect to time efficiencies, cost, convenience, patient preferences, infusion time, and chair time, what is the advantage of high-dose infusion options using ferric carboxymaltose (FCM) that require only two 30-minute infusions?

Question # 107:
What is the potential importance of distinguishing among high-dose IV iron formulations and their potential for confounding accurate interpretation of MRI scans? Where can clinicians access information related to this practical matter?

Question # 108:
In refractory IDA how does the use of IV iron mitigate the barriers to adequate iron repletion?

Question # 109:
Do national associations, such as ASH, ASCO, AGA, ANA, and others have specific guidelines for when and how to use IV iron repletion therapy?

Craig Kessler, MD
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Director, Comprehensive Hemophilia and Thrombosis Treatment Center
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Question # 110:
In the setting of cancer, what are the most common causes of IDA?
**Question # 111:** What are the initial approaches to iron deficiency and IDA in patients with malignancy? How do you determine whether oral or IV iron repletion is the preferred strategy?

**Question # 112:** How often is oral iron therapy an inadequate strategy for achieving iron repletion targets in the setting of clinical oncology? What mechanisms are responsible for a poor response to oral iron?

**Question # 113:** In which cancer patients might specialists fail to recognize the importance of IV iron repletion as a pivotal approach to correcting iron deficiency anemia?

**Question # 114:** What are the current controversies surrounding the use of erythropoietin in cancer patients?

**Question # 115:** How should oncologists approach IDA in patients with cancer, and select among RBC transfusions, erythropoietin, and IV iron infusions to achieve their clinical goals?

**Question # 116:** What factors go into your assessment for selecting an IV iron formulation in the setting of cancer?

**Question # 117:** How does the side effect profile (i.e., risk of allergic reactions with dextran-based preparations) of the low-dose, frequently administered IV iron preparations compare to that of the new, high-dose IV formulations such as ferric carboxymaltose where only two doses are required? Are efficiencies achieved as well?

**Question # 118:** With respect to time efficiencies, cost, convenience, patient preferences, infusion time, chair time, and so on, what are the possible advantages of high-dose infusion options using ferric carboxymaltose (FCM) or other formulations that require shorter administration time?

**Question # 119:** From your perspective as an oncologist and hematologist, how do you view the advantages—from the standpoint of efficiencies, patient preference, quality-of-life, and cost-savings—of IV iron repletion as compared to more traditional oral approaches?

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**Heinz Ludwig, MD**
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**Question # 120:** In the typical hematology-oncology setting, how often is oral iron repletion successful, and what are your triggers for employing IV iron therapy in your patients with IDA?

**Question # 121:** What is the evidence-based rationale for using high-dose IV iron repletion across a broad spectrum of patients with IDA?

**Question # 122:** What are the practical, patient-centric advantages of high-dose IV iron repletion? Is it just a matter of convenience?

**Question # 123:** The label for ferric carboxymaltose (FCM) indicates that low phosphate levels and/or elevations in BP can be observed. Have you seen these effects in your clinical practice?

**Question # 124:** What is the role of IV iron therapy in the setting of cancer?

**Question # 125:** In the setting of IV iron repletion, why is it preferable to reduce the number of administrations to achieve optimal iron repletion?

**Question # 126:** What are the potential benefits of IV iron repletion on clinical parameters in the setting of cancer, IDA, and related conditions? And what is the role of hepcidin in driving the need for IV iron repletion in preference to oral iron therapy?

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**Maureen M. Okam, MD, MPH**
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Instructor in Medicine, Harvard Medical School
Associate Director, Brigham and Women’s Hospital Infusion Center
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**Question # 127:** What are the dosing approaches and formulations for oral iron repletion? And how often and why do patients with IDA fail oral iron therapy?

**Question # 128:** What is the primary trigger for noncompliance with oral iron therapy? What are the other reasons for failure or oral iron repletion?
**Question # 129:**
What would prompt you to switch a patient from oral iron therapy to IV iron repletion?

**Question # 130:**
What is the current safety profile of IV iron formulations as it relates to immediate hypersensitivity reactions?

**Question # 131:**
Have the convenience advantages of rapidly administered high-dose, IV iron formulations translated into wide patient and physician acceptance at the front lines of care for IDA?

**Question # 132:**
In what clinical states should high-dose IV iron be considered the dominant strategy as opposed to oral iron repletion?

**Question # 133:**
In your review of IV iron administration at your infusion center in Boston, what was the incidence of serious anaphylactoid or anaphylactic reactions? How safe are these formulations?