Biomarkers for assessing and managing iron deficiency anemia in late-stage chronic kidney disease

Record Status
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Citation

Authors' objectives
To summarize the literature on the use of newer versus classical laboratory biomarkers of iron status as part of the management strategies for iron deficiency in stages 3–5 CKD patients (nondialysis and dialysis).

Authors' conclusions
Combining the evidence addressing Key Questions 2, 3, and 4, we can conclude that all currently available laboratory biomarkers of iron status (either newer or classical markers) do not have an ideal predictive ability when used singly to determine iron deficiency as defined by a response to iron challenge test. Furthermore, we can conclude that there is insufficient evidence to determine the test performance of the combinations of newer biomarkers, or combinations of newer and classical biomarkers, for diagnosing iron deficiency. However, it may be that CHr and %HYPO have better predictive ability for a response to IV iron treatment than classical markers (TSAT <20 or ferritin <100 ng/mL) in HD CKD patients. In addition, results from two RCTs showed a reduction in the number of iron status tests and resulting IV iron treatments administered to patients whose iron management was guided by CHr, compared with those guided by TSAT or ferritin. These results suggest that CHr may reduce potential harms from IV iron treatment by lowering the frequency of iron testing, although the evidence for the potential harms associated with testing or test-associated treatment is insufficient. Nevertheless, the strength of evidence supporting these conclusions is low, and there remains considerable clinical uncertainty regarding the use of newer markers in the assessment of iron status and management of iron deficiency in stages 3–5 CKD patients (both nondialysis and dialysis). In addition, factors that may affect the test performance and clinical utility of newer laboratory markers of iron status remain largely unexamined.

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