To the editor:

Defining anemia by race using epidemiologic data

We laud Patel and colleagues’ thoughtful analysis and important contribution to the sparse literature on the racial variation in the relationship of anemia and outcome in older adults.1

The authors suggest that “alternative criteria are warranted” for defining anemia in blacks. They intimate that we should consider a threshold lower in blacks than the World Health Organization anemia criteria of hemoglobin (Hb) less than 130 g/L for men and less than 120 g/L for women based on their observation that anemia did not predict for increased mortality in their blacks. However, we believe lowering the Hb threshold defining anemia based on this epidemiologic study is premature.

Because the data conflict with Denny and colleagues’ report showing increased mortality in older blacks having anemia, we must consider study limitations.2 In the manuscript by Dr Patel, the recruitment strategies for blacks and whites differed (whites were randomly selected whereas blacks were recruited) as did the number of patients lacking baseline Hb values (56% in blacks compared with 39% in whites). This may have introduced bias that abrogated the mortality impact of anemia. The authors also state that restricting the analysis to well-functioning individuals strengthens the study by negating confounding factors. However, to redefine population-based Hb thresholds in a nonpopulation-based analysis is problematic. Finally, it remains unknown whether anemia in older blacks increases the risk of other health-related outcomes such as hospitalization, quality of life, or institutionalization.

Even if anemia in older blacks is shown to have no impact on outcomes, defining anemia based solely on epidemiologic data may have unintended consequences. Anemia has long served as a clinical important sign of other conditions. Applying a lower Hb concentration to diagnose anemia would desensitize physicians and patients about when to evaluate anemia and/or may lead payors to refuse reimbursement for “mildly” low Hb values. As the authors point out, genetic traits, such as α-thalassemia,3 probably reduce the median Hb in blacks. Using a lower Hb threshold for all black older adults runs a serious risk of missing important causes such as nutrient deficiencies, iron deficiency (and underlying gastrointestinal pathology), or other serious conditions. Clarifying the Hb concentration below which an etiologic evaluation can be safely deferred requires a rigorous study analyzing anemia etiology by race and Hb concentration. Although approximately one-third of older anemic adults lack an obvious cause,4,5 prospective studies using careful clinical evaluation are lacking. Finally, we would also like to emphasize that observational data on Hb and mortality do not necessarily inform Hb criteria for corrective therapy using erythropoietin stimulating agents (ESA). Prospective trials in older anemic adults will be needed to discern the risks and benefits of anemia correction as well as the optimal Hb concentration for initiation and targeting with ESA.

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Conflict-of-interest disclosure: A.A. has served on an advisory board to Amgen and has received research support from Amgen. X.D. declares no competing financial interests.

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References

Response

Further epidemiologic research on anemia in older adults is needed

We appreciate Drs Artz and Dong’s interest in our work,1 and agree that research on the underlying causes of anemia in older adults is needed. A recent study by Sembra and colleagues shows that older disabled women with anemia associated with renal disease or anemia of inflammation are significantly more likely to die disabled with anemia associated with renal disease or needed. A recent study by Semba and colleagues shows that older adults run a serious risk of missing important causes such as nutrient deficiencies, iron deficiency (and underlying gastrointestinal pathology), or other serious conditions. Clarifying the Hb concentration below which an etiologic evaluation can be safely deferred requires a rigorous study analyzing anemia etiology by race and Hb concentration. Although approximately one-third of older anemic adults lack an obvious cause, prospective studies using careful clinical evaluation are lacking. Finally, we would also like to emphasize that observational data on Hb and mortality do not necessarily inform Hb criteria for corrective therapy using erythropoietin stimulating agents (ESA). Prospective trials in older anemic adults will be needed to discern the risks and benefits of anemia correction as well as the optimal Hb concentration for initiating and targeting with ESA.

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References
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