

health status (MCS,  $P > .10$ ). In summary, our data extend the findings reported by Bhatia et al<sup>1</sup> on the functional health status in long-term survivors, validating the finding that the physical health status of very long-term survivors after HSCT can be impaired, while mental health status remains preserved.

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## References

1. Bhatia S, Francisco L, Carter A, et al. Late mortality after allogeneic hematopoietic cell transplantation and functional status of long-term survivors: report from the Bone Marrow Transplant Survivor Study. *Blood*. 2007;110:3784-3792.
2. Duell T, van Lint MT, Ljungman P, et al. Health and functional status of long-term survivors of bone marrow transplantation. EBMT Working Party on Late Effects and EULEP Study Group on Late Effects, European Group for Blood and Marrow Transplantation. *Ann Intern Med*. 1997;126:184-192.
3. Wingard JR, Curbow B, Baker F, Piantadosi S. Health, functional status, and employment of adult survivors of bone marrow transplantation. *Ann Intern Med*. 1991;114:113-118.
4. Ware JE Jr, Shebourne CD. The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. *Med Care*. 1992;30:473-483.
5. McHorney CA, Ware JE Jr, Raczek AE. The MOS 36-item Short-Form Health Survey (SF-36): II. Psychometric and clinical tests of validity in measuring physical and mental health constructs. *Med Care*. 1993;31:247-263.

## To the editor:

### Revised criteria for the myeloproliferative disorders: too much too soon?

We would like to raise several concerns about the updated World Health Organization diagnostic criteria for polycythemia vera (PV), essential thrombocythemia (ET), and primary myelofibrosis (PMF), as proposed by Tefferi et al.<sup>1</sup>

First, while the authors explain that the new criteria are not absolutely comprehensive, they never state the exact purpose of this revision. As a purpose of diagnostic criteria is to guide diagnosis and clinical management, the authors should demonstrate that the revised criteria are validated by data from previous studies. For example, while the discovery of the *JAK2V617F* mutation is of paramount importance, it has not changed our ability to discriminate between the different disorders and has not changed therapeutic recommendations, although it may in the future. Without these supporting data, these criteria produce significant ambiguity for physicians attempting to decipher their clinical relevance.

Second, the new criteria emphasize differences in bone marrow morphology among the myeloproliferative disorders. But, it appears that the vast majority of this work has been done with small groups of patients in retrospective and unblinded settings, which may facilitate biases and misinterpretations. In addition, the references supporting these morphologic criteria primarily focus on the work of one of the authors. We have concerns about the general applicability of these guidelines to centers that lack the necessary hematopathology expertise. Is there sufficient confidence that evaluation of megakaryocyte morphology and fibrosis is widely reproducible among the various observers who will be attempting to make these distinctions? This concern is shared by others.<sup>2,3</sup> We also question whether morphologic assessment can reliably differentiate between primary and secondary causes of myelofibrosis, such as seen in primary pulmonary hypertension, a common cause of secondary myelofibrosis. Rather than stating that “the histologic differences among the entities outlined here are recognized by experienced hematopathologists,” the authors

should provide objective evidence of the validity, utility, consistency and reproducibility of the proposed criteria.

Third, the morphologic criteria have never been applied to patients with congenital polycythemia due to *Von Hippel-Lindau* or *EPO* receptor gene mutations. In our experience with these disorders, many of these patients had their marrow morphology interpreted as consistent with PV.<sup>4,5</sup>

In addition, there is a major mistake in Tefferi et al’s Table 1,<sup>1</sup> which summarizes the 2001 criteria; contrary to what is stated in the table, dominantly inherited polycythemia due to a truncated erythropoietin receptor is always associated with a low erythropoietin level.

In summary, we feel that before using the revised criteria as a diagnostic guide, these issues need to be further evaluated in large scale, prospective studies, such as those being undertaken by the Myeloproliferative Disorders Research Consortium.

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## References

1. Tefferi A, Thiele J, Orazi A, et al. Proposals and rationale for revision of the World Health Organization diagnostic criteria for polycythemia vera, essential thrombocythemia, and primary myelofibrosis: recommendations from an ad hoc international expert panel. *Blood*. 2007;110:1092-1097.
2. Harrison CN. Essential thrombocythemia: challenges and evidence-based management. *Br J Haematol*. 2005;130:153-165.
3. Hussein K, Bock O, Kreipe H. Histological and molecular classification of chronic myeloproliferative disorders in the age of JAK2: persistence of old questions despite new answers. *Pathobiology*. 2007;74:72-80.
4. Skoda R, Prchal JT. Lessons from familial myeloproliferative disorders. *Semin Hematol*. 2005;42:266-273.
5. Gordeuk VR, Stockton DW, Prchal JT. Congenital polycythemia/erythrocytosis. *Haematologica*. 2005;90:109-116.