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LETTER TO THE EDITOR

Double-mutant myeloproliferative neoplasms

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To the editor,

In the recent review of myeloproliferative neoplasms (MPN), Helbig summarizes the current evidence of how the three major types of MPN driver mutations (*JAK2* V617F, *CALR* exon 9 and *MPL* exon 10) influence disease phenotype and impact on prognosis. In this review, it is stated that these three mutation types are mutually exclusive [1]. However, in addition to an increased annotation of cases in which an MPN harbouring one of these types of mutations co-exists with *BCR-ABL1*-positive chronic myeloid leukemia [2], there is a growing awareness that a combination of any two of these types of mutations can occur concurrently in a minor, but significant proportion of patients with the classical MPN of polycythemia vera, essential thrombocythemia and primary myelofibrosis. In one of the largest series reported to date, double-mutant MPN appear to possess specific presenting features, dependent on which of the two mutations are present [3].

Coincident with this increasing appreciation of the double-mutant MPN entity is the consequence for MPN molecular diagnostics. Step-wise algorithms for the *JAK2* V617F, *CALR* and *MPL* mutations in which once a mutation is detected no further analysis is performed must now be reconsidered. Simultaneous identification of the three driver mutations by targeted next-generation sequencing approaches would largely overcome this issue and would likely enhance identification of further cases, necessary for stratified risk-assessment and selection of treatment.

Compliance with ethical standards

Conflict of interest The author declares that there is no conflict of interest.

References

1. Helbig G. Classical Philadelphia-negative myeloproliferative neoplasms: focus on mutations and JAK2 inhibitors. Med Oncol. 2018;35:119.
2. Boddu P, Chihara D, Masarova L, Pemmaraju N, Patel KP, Verstovsek S. The co-occurrence of driver mutations in chronic myeloproliferative neoplasms. Ann Hematol. 2018. https://doi.org/10.1007/s00277-018-3402-x.
3. Mansier O, Luque Paz D, Ianotto JC, et al. Clinical and biological characterization of MPN patients harbouring two driver mutations, a French intergroup of myeloproliferative neoplasms (FIM) study. Am J Hematol. 2018;93:E84-6.

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