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The e1a3 *BCR-ABL1* Fusion Transcript in Philadelphia Chromosome-Positive Acute Lymphoblastic Leukemia

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Dear Editor

In a recent issue of Annals of Laboratory Medicine, Shin and colleagues described two cases of Philadelphia chromosome-positive (Ph+) ALL expressing e1a3 *BCR-ABL1* gene fusion product and listed other cases reported thus far that involve this fusion [1]. A basic literature review using the search term "e1a3" reveals two additional adult cases that should have been included in this list [2, 3]. Taking into account all reported cases, Ph+ ALL expressing e1a3 *BCR-ABL1* transcripts is associated with an overall poor prognosis suggesting that allogeneic stem cell transplantation should be considered for those eligible patients in the early stages of the disease.

As stated by Shin and colleagues, correct identification of the *BCR-ABL1* transcript type is essential during diagnosis [1]. Most instances of false-negative *BCR-ABL1* results arise from variant fusion transcripts with alternative splicing of the *BCR* or *ABL1* exons, or more rarely, complex insertion or deletion events [4], a phenomenon occasionally described in other leukemia-associated fusion transcripts [5]. Furthermore, real-time quantitative (RQ)-PCR is gaining importance in monitoring residual disease, in conjunction with PCR-based, patient-specific, immunoglobulin gene rearrangements, and multi-color flow cytometry [6]. Thus, there is additional requirement to establish standardized methodologies and report practices for RQ-PCR analysis of these variant *BCR-ABL1* fusion transcripts in Ph+ ALL. Reporting the outcomes in patients with rare variant *BCR-ABL1* transcript types is necessary to identify any genotype-phenotype relationships that may ultimately provide refinements in the therapeutic strategy.

Author's Disclosure of Potential Conflicts of Interest

No potential conflicts of interest relevant to this article were reported.

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