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Bone marrow, peripheral blood and plasma for quantitation of BCR-ABL transcript in Chronic Myeloid Leukemia

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olecular diagnosis based on the quantitative monitoring of BCR-ABL transcript in Chronic Myeloid Leukemia (CML) using quantitative real-time PCR (qRT-PCR) has been performed in the bone marrow. Recently, the reliability of using the source of peripheral as well as plasma for BCR-ABL transcript quantitation has been questioned. We herein reported a study on 172 paired samples, partitioned into 3 groups, including before treatment (newly diagnosed CML), under 1 year, and more than 1 year after initiation of TKI therapy for BCR-ABL transcript quantitation as performed by qRT-PCR. Based on the results, quantitatively, we concluded that there was only agreement of BCR-ABL measurements among bone marrow, peripheral blood, and plasma in the group of the newly diagnosed CML patients based on the evaluation of %IS-NCN and the kappa-value. Our data suggested that the source sample of peripheral blood and plasma were suitable for the BCR-ABL transcripts quantitation for CML patients without undergoing TKI treatment. The plasma-based quantification assay was more sensitive in untreated patients compared to the bone marrow test.

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