Assessment of early molecular response in Tunisian chronic myeloid leukemia

Rim Frikha¹, Moez Elloumi² and Hassen Kamoun¹

¹Medical Genetic department, Hedi Chaker Hospital, Sfax, Tunisia; ²Departments of Hematology, Hedi Chaker Hospital, Sfax, Tunisia

BACKGROUND:

Assessment and monitoring of BCR-ABL1 levels by quantitative PCR is essential for the management of chronic myeloid leukemia patients treated with TKIs. Achieving a BCR-ABL/ABL ratio <10% at 3 months has become an important goal since; this early molecular response (EMR) is associated with positive long-term outcome in terms of overall survival and progression-free survival.

OBJECTIVE:

The aim of this study was to evaluate early molecular response in Tunisian patients with a chronic phase (CP) of chronic myeloid leukemia (CML).

METHODS:

It was a retrospective study of CML patients who attended the hematology department at hospital University of Sfax, south of Tunisia, from January 2016 to December 2017.

111 CML patients in CP were enrolled in this study. Clinical and biological data were recorded. Optimal outcome was defined as achieving MMR at 12 months or DMR at 18 months.

Quantitative assessment of the BCR-ABL transcript was performed using the Cepheid Xpert BCR-ABL ultra assay, on peripheral blood samples.

RESULTS:

Among 111 CML patients, 56% achieve an EMR at 3 months and 40% at 6 months.

A median cutoff of 5.6% at 3 months was recorded in the patients who achieve an optimal outcome.

Fig 1: Minimal residual disease at 3 months
EMR: early molecular response

DISCUSSION:

Achieving a molecular response $\leq 10\%$ at 3 months has been included in the guidelines as a new surrogate endpoint that should be reached to maximize favorable outcomes[1].

We showed that a median cutoff of 5.6% would be a prognosis factor. This threshold is higher than reported previously [2], and probably related to the limited size of the cohort. Therefore, we do not question the 10% cutoff at three months analyzed by the standard RQ-PCR method. Yet, we showed that a median cutoff of 5.6% would be a prognosis factor, using the current version of Xpert BCR-ABL1. This threshold is higher than reported previously.

Despite the limitation of our study (size; duration) this finding provides a basis for future, larger studies of the use of this widespread method.

1.Eskazan, A.E., M.C. Ar, and T. Soysal, Critical appraisal of European LeukemiaNet (ELN) 2013 recommendations for the management of chronic myeloid leukemia: is it early for a warning? Expert Rev Hematol, 2016. 9(10): p. 919-21.
2.Garcia-Gutierrez, V., et al., A BCR-ABL1 cutoff of 1.5% at 3 months, determined by the GeneXpert system, predicts an optimal response in patients with chronic myeloid leukemia. PLoS One, 2017. 12(3): p. e0173532