Successful treatment of chronic myeloid leukemia with tyrosine kinase inhibitors goes beyond access to drugs

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The chronic phase of chronic myeloid leukemia (CML-CP) is successfully managed with imatinib therapy with an estimated overall survival in clinical trials of around 85% at eight years[1]. The question remains as to whether these results might be representative of patients treated in 'the real world', that is, outside of clinical trials.

This issue of the *Revista Brasileira de Hematologia e Hemoterapia* carries an article entitled "Chronic myeloid leukemia: an overview of the determinants of effectiveness and therapeutic response in the first decade of treatment with imatinib mesylate in a Brazilian hospital" which states that only 20% of CML patients, most in the chronic phase, had a good response to imatinib therapy[2]. The authors correlated this low outcome to several variables, including delay to start treatment, the advanced stage of the disease, poor access to medication and lack of proper monitoring, such as cytogenetic and molecular analyses.

In a multinational study called the World Chronic Myeloid Leukemia Registry, the diagnosis, first-line treatment with imatinib and clinical outcome of more than 1800 patients with CML-CP from the United States, Latin America, Asia, Middle East, Africa, Russia and Turkey were compared to clinical practice patterns of management according to the recommendations of European LeukemiaNet (ELN). According to this registry, most patients were not monitored properly. Only 50% of patients were evaluated at three months of treatment and only 10% and 15% had karyotype and molecular evaluations, respectively[3].

A multicenter Spanish group asked an interesting question: will physicians adhere to recommendations on monitoring CML outside of clinical trials? The rate of complete cytogenetic response in 374 patients treated and monitored in accordance with the ELN guidelines was 90%, while a rate of 80% was reported for patients who did not have such rigorous monitoring. The progression rate of 1.6% was also lower in the first group compared to 6.4% in the second group[4].

On the other hand, the outcome of CML-CP patients receiving imatinib at MD Anderson Cancer Center showed similar excellent outcomes to those in clinical trials. Comparable rigor in monitoring treatment explained this success rate[5]. However, this same institute reported results for the subgroup of 377 patients at North American sites in the World Chronic Myeloid Leukemia Registry. Many of them did not have routine molecular or cytogenetics assessments, suggesting that many North American physicians do not monitor their patients as recommended[6].

In order to ensure the best possible response and quality of life of patients, avoid unnecessary complications, and potentially achieve a cure, physicians and patients must understand the correct use of available drugs, the significance of disease endpoints and the importance of monitoring. The response to treatment depends not only on access to therapy or the biology of the disease. Treatment without appropriate follow-up as recommended by the guidelines generates inadequate responses, and ultimately reduces survival.

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