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Scientific comment

Myeloid leukemia: are we getting better?☆

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The study by Callera et al., published in this issue of the Revista Brasileira de Hematologia e Hemoterapia (RBHH),[1] reveals evidence of a continuous decrease in the mortality rate in adult patients with myeloid leukemias from 1994 to 2011 in southeast Brazil. Undoubtedly, this decline is related to the better understanding and treatment of chronic myeloid leukemia (CML), acute myeloid leukemia (AML) and promyelocytic leukemia (APL, M3).[2–4] The words myeloid retirar a palavra and leukemia refer to a very wide range of disorders with varying severity and manifestations. We address here CML, AML and APL mainly to better understand the advances in each of them.

I believe that there is really a trend in Brazil to follow developed countries which have reported significant changes in prognosis. Unfortunately, we still experience many difficulties, but we have had progress as well: first, tyrosine kinase is widely distributed to patients with CML in Brazil; second, the health authorities have just opened a public consultation about AML treatment, including cytogenetics and the recommendation for the use of molecular tests in the treatment protocol; and third, the results of treatments of LPA show substantial improvement.[3]

Evolution in the treatment of leukemia has greatly improved the chances of cure and disease control. More than 7500 people develop leukemia in the country today and 9000 people die of the disease every year in Brazil according to the National Cancer Institute (INCA). Despite the lethality, leukemia is now a curable type of cancer.

Prognosis of leukemia patients today is generally good. CML is controlled with a daily pill and acute leukemias are cured in 50–80% of cases. In recent years, great advances have been made in treatment, including chemotherapy, bone marrow transplantation and targeted-treatments.[2] The introduction of tyrosine kinase inhibitors in the treatment of CML, which was previously treated with transplantation, is an evolution. In addition, greater knowledge of the genetics behind the disease leads to better choices and individualization of treatment. These improvements in treatment have increased chances of cure and disease control, and better quality of life for the patients. Hence, the most used treatment for CML today is targeted therapy with the drugs imatinib, dasatinib or nilotinib. The treatment must be continued for life, ensuring that the person stays in remission while taking the drugs. This is called functional cure.[2]

For acute cases, treatment is planned in stages. First chemotherapy is proposed, usually with a good result for a short time. There is a need to provide a post remission therapy. During this period, certain combined drugs are used to extend and maintain disease remission. In AML, the main induction regimen (3 + 7) has been used for more than 40 years.

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☆ See paper by Callera et al. on pages 7–11.
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For cases with good prognosis, consolidation chemotherapy or autologous transplantation has been used. For cases with bad prognosis or when relapse occurs, allogeneic bone marrow transplants have brought good results. These procedures today are very safe and recommended.[3]

Thus, a cytogenetic evaluation that addresses the so-called molecular factors, in particular FMS-like tyrosine kinase-3 (FLT3), nucleophosmin (NPM1) and Cantharidin-binding protein (CBP) alpha subunit, is essential, as they allocate patients to receive consolidation with chemotherapy and/or autologous transplants, when prognosis is favorable, or to undergo allogeneic transplants in cases of poor prognosis. Proper use of algorithms improves prognosis.[3]

Elderly patients, among whom leukemia is more prevalent, started to be treated more aggressively, just like young people, because the infrastructure of care has improved greatly in recent years. This yields a high rate of remission and, in those patients with better performance status and lower rates of fragility, the possibility of undergoing low toxicity, allogeneic, non-myeloablative transplantation. Data from our group in partnership with MD Anderson Hospital show results in the elderly similar to those obtained with younger patients.[5] Furthermore, the advent of hypomethylating agents opens new perspectives for the treatment of AML in elderly patients.[6–8]

Finally, the effort in Brazil to improve the care of patients with APL through the program headed by Dr. Eduardo Rego using a Brazilian protocol based on that of the Spanish group (PETHEMA), brought our outcomes up to international levels.[4] For all that, hopefully, in a few years, myeloid leukemias will be curable diseases

Conflicts of interest

The author declares no conflicts of interest

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