

THE BRAZILIAN RISE OF AUTOLOGOUS HEMATOPOIETIC STEM CELL TRANSPLANTATION AS A THERAPEUTIC ALTERNATIVE IN BLOOD ONCOLOGY

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Introduction: Autologous hematopoietic stem cell transplantation is a cornerstone in the remission of malignant hematologic diseases such as multiple myeloma and refractory lymphomas. By reinfusing the patient's own cells, it reduces the risk of transfusion rejection, favoring hematopoietic recovery and contributing to increased patient survival. However, this technique still faces challenges, such as post-procedure complications (e.g., neutropenia, mucositis, opportunistic infections, and renal toxicity), as well as regional inequalities in access. **Objectives:** This study aims to analyze the number of autologous transplants performed in Brazil over the past decade, observing the expansion of this therapeutic technique, the occurrence of physiological adverse reactions, and the distribution of this service across the country's regions. The study also supports medical practice by providing data that reflect the reality of therapeutic responses in current medicine. **Methods:** This is an epidemiological study with a cross-sectional, retrospective, and descriptive design, based on the analysis of hospital production data provided by the Department of Informatics of the Unified Health System (DATASUS). Records of approved hospitalizations for autologous hematopoietic stem cell transplantation from bone marrow and peripheral blood, as well as the number of hospitalizations due to post-transplant complications, were considered. Data were organized by year and by region of Brazil over the past ten years (2015–2024) and cataloged using Microsoft Excel 2016. **Results:** A total of 14,508 records of autologous hematopoietic stem cell transplants from peripheral blood and bone marrow were identified. The Southeast region recorded the highest number of procedures (8,070), followed by the South (2,974) and Northeast (2,674). The Midwest registered 780 procedures since 2015, while the North recorded only 10 autologous transplants, with the first appearing in the database in 2023. A total of 2,088 hospitalizations for post-autologous transplant complications were also identified. The annual complication rate rose significantly, from 5.3% in 2015 to 18.3% in 2024, representing a more than threefold increase. The national average complication rate was 14.34%, with the Southeast being

the only region exceeding this average, reaching 20.03%. **Conclusions:** The analysis revealed an increase both in the number of transplants and in the incidence of post-procedure complications. The Southeast region accounted for most of the procedures and had a complication rate above the national average. This may reflect both a greater ability to report outcomes and persisting barriers to treatment. Regional disparities point to the need for targeted strategies to ensure equitable access to care and to optimize post-transplant management. The implementation of standardized protocols and investments in infrastructure are essential to improve safety and clinical outcomes nationwide.

Keywords: Hematologic oncology; autologous transplantation; autologous stem cell transplant; epidemiology; Brazil.