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HEMATOPOIETIC STEM CELL TRANSPLANTATION FOR NON-HODGKIN LYMPHOMA IN BRAZIL: REAL-LIFE DATA

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Following the creation of a working group between the CIBMTR, Brazilian Society for Blood and Marrow Transplantation and Cellular Therapy (SBTMO), Bone Marrow Association (AMEO) and *Data Managers Working Group* (GTGD), the Brazilian Bone Marrow Transplantation Registry (RBTMO) was stablished based on cooperation models already used by the CIBMTR with other countries, such as Canada and Japan. Due to this effort, the regular functioning of the RBTMO has currently allowed Brazilian hematopoietic stem cell transplantation (HSCT) centers to report and benchmark their data for specific purposes such as the current report on non-Hodgkin lymphoma (NHL)[1].

NHL represents the second most frequent indication of HSCT in the United States[2]. In Brazil, according to RBTMO data, NHL is the fourth most transplanted disease, which probably demonstrates a characteristic of the Brazilian registry that has only recently received information from centers with a greater volume of autologous HSCT compared to allogeneic ones.

Patients without complete data in the registry were excluded from this study. A total of 778 autologous (n= 616) and allogeneic (n=68) HSCT recipients for NHL were reported to the CIBMTR and now included in the RBTMO between 2008 and 2020. The numbers of HSCT reported for NHL has increased significantly since 2017. The median age of the entire cohort was 51 years (3-76 years) to autologous HSCT and 46 years (4-47 years) to allogeneic HSCT and most were male. Diffuse large B-cell lymphoma (*DLBCL*), not otherwise specified (NOS) was the most common diagnosis for recipients of autologous HSCT, while T-cell NHL were frequent diagnosis for the allogeneic HSCT group, although it compounds a very heterogeneous group, encompassing several subtypes of mature T cell neoplasms[3].

The most frequent conditioning regiment for the autologous group was BEAM (Carmustine, etoposide, cytarabine and melphalan), while fludarabine-based regimens was the main regimen for the allogeneic HSCT. The OS for patients undergoing allogeneic HSCT was 54% at 2 years, donor type had no impact on OS rates for allogeneic HSCT, but CR was also important, with 65.3% of OS in 2 years, with a trend to longer survival (p= 0.057).

For patients transplanted for DLBCL NOS, the 2-year OS was 70.3% after autologous HSCT, and the 3-year OS of 68 ± 1% reported by the CIBMTR for North American patients[2]. The 2-year OS after allogeneic HSCT for this histological subtype was 48.6% which appears comparable to the 46% ± 2% reported by the CIBMTR.

Mantle cell lymphoma (MCL) was the second mostly common NHL subtype transplanted, since autologous HSCT is part of first-line therapy for this subtype of NHL[4]. The 2-year OS was 85.2% for 114 patients who underwent autologous HSCT for this subtype, a very similar result to that reported by the CIBMTR, 83% ± 1% in 3 years[2]. Only 10 patients were evaluated for OS rate after allogeneic HSCT in MCL, which was 65.6%, a value that may be overestimated due to the small number of cases.

Follicular lymphoma (FL), which represents second most prevalent subtype in our country, was the third most common indication for HSCT for B-cell NHL[4]. In the autologous HSCT, the 2-year OS of RBTMO data was 83.1% in the 2008 to 2020 period, comparing to 84% ± 2% of 3-year OS of CIBMTR reported from between 2016 to 2018[2]. Once again, allogeneic HSCT had its analysis hampered by the small number of cases.

Peripheral T-cell lymphomas (*PTCL*) is a rare subtype of NHL, equivalent only to 4% of NHL in our environment[4]. Among autologous HSCT for PTCL, OS was superior to the literature[(5)], probably due to a selection bias in patients' arrival for autologous HSCT and also because we included ALK+ anaplastic lymphomas, which are often excluded from the analysis. Allogeneic HSCT is more important in peripheral T-cell lymphomas (*PTCL*), which was the group most frequently submitted to this type of transplant, with 51.1% OS in 2 years, similar to international literature[6].

This report while initial and small, demonstrates similar overall survival rates for patients treated with autologous or allogeneic HSCT for NHL in Brazil are similar to those reported by other international large centers and by the CIBMTR. Moreover, it shows the value of collaboration with centers with a longer tradition in reporting HSCT data, such as those in the USA and Europe, are capable of foster the beginning of a similar work, in other countries like Brazil.

TABLE 1: Characteristics of patients with NHL submitted to first autologous HSCT and overall survival according to histological subtypes and remission status at transplant

Characteristic	**n/%**	**2-years OS** (p value)	
Total No. of patenits	616	-	
Age, years, median (range)	51 (3-76)	-	
Sex, n/%			
Male	370/60	-	
Female	246/40	-	
NHL histological subtype, n/%*			
DLBCL	161/36.6	70.3	
MCL	114/25	85.2	
FL	45/10.2	83.1	
PTCL	64/14.5	73.7	
Complete remission at transplant, n/%*			
Yes	288/65.4	82.3	(<.001)
No	151/34.6	62.5	

* 440 patients with complete data

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