Oncology 2025
The Cancer Control Challenge:
Better Understanding It to Better Face It

EPIDEMIOLOGICAL AND HOSPITAL PROFILE OF CHILDHOOD LEUKEMIA IN BRAZIL'S NORTHERN REGION: A DESCRIPTIVE ANALYSIS FROM 2020 TO 2024

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Introduction: Leukemia is a malignant neoplasm originating from hematopoietic tissue and is the leading oncological issue in the pediatric population, with a significant predominance in children during the first decade of life. Despite therapeutic advances that provide high survival rates, clinical outcomes remain strongly dependent on early diagnosis and comprehensive access to treatment. In Brazil, marked regional socioeconomic disparities influence pediatric hospitalization patterns for leukemia, highlighting the importance of epidemiological investigations to develop targeted strategies in pediatric oncology care. **Objectives:** This study aims to analyze the hospitalization profile for leukemia in children up to 14 years of age in Northern Brazil from January 2020 to December 2024. It evaluates the trend and proportional distribution of cases and highlights the financial cost of these hospitalizations during the same period. **Methodology:** This ecological, descriptive, and retrospective study examined hospitalizations for leukemia in children aged 0–14 years in Northern Brazil between 2020 and 2024, using data extracted from the Hospital Information System of the Unified Health System (SIH/DATASUS). The analysis considered variables such as federative unit, year, age group, sex, race/color, type of care, and total hospitalization costs. The data were analyzed using R software version 4.3.1, with descriptive statistics and trend analysis. Hospitalization rates were normalized per 100,000 inhabitants for each age group, accounting for potential confounding factors such as access to health services and population distribution. **Results:** Between 2020 and 2024, 8,265 hospitalizations for leukemia were recorded in the Northern Region of Brazil. Pará had the highest number of cases, with 4,774 hospitalizations (57.76%), while Amapá had the fewest, with just 2 cases (0.02%). 2024 had the highest number of hospitalizations, with 1,904 cases, while 2020 had the lowest, with 1,176 hospitalizations. The most affected age group was 5 to 9 years (38.47%). The majority of cases occurred in boys (57.36%), and most affected children were of mixed race (85.22%). The average cost of hospitalization was R$1,508.30, with most care classified as urgent (59.37%). **Conclusion:** A significant

concentration of hospitalizations occurred among mixed-race children, with the highest prevalence in the 5–9-year age group. Pará accounted for a substantial share of the total number of hospitalizations, especially in 2024. This reflects an important regional trend, enabling the design of health strategies tailored to this issue. The increase in hospitalizations over time, coupled with high financial expenditures, underscores the urgency of investing in preventive measures, early diagnosis, and ensuring regional equity in access to care. Epidemiological studies like this are crucial to guide public health spending and improve outcomes in pediatric oncology.

Keywords: Leukemia; Epidemiology; Pediatrics.