ID - 3131

PEDIATRIC REGIMENS ALONE ARE NOT ENOUGH: THE ROLE OF HEALTHCARE INEQUITIES IN LATIN AMERICAN ADULT ACUTE LYMPHOBLASTIC LEUKEMIA OUTCOMES

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Introduction: In Latin America, leukemia care is delivered through two distinct healthcare systems: a public health system, which serves approximately 70% of the population, and a private system. Acute lymphoblastic leukemia (ALL) is a neoplasm that requires complex, intensive, multi-agent chemotherapy regimens, leading to profound immunosuppression and a high demand for supportive care. In public institutions, most patients are treated according to institutional pediatric-inspired protocols, whereas in the private sector, a smaller proportion receives similarly adapted regimens. Currently, there is no comprehensive regional database for acute leukemia in Latin America that allows for the assessment of outcome disparities related to healthcare access or biological factors. **Objetivos:** In this study, we sought to analyze outcomes in a large, multicenter cohort that includes both public and private institutions, with the goal of identifying key factors associated with survival in adult patients with ALL. **Material and methods:** This is a retrospective multi-site cohort study encompassing patients from 15 years and above with newly diagnosed ALL between 2010 and 2024 from 7 centers from Brazil and 13 centers from Chile. **Results:** A total of 578 patients were included, mostly from Brazil (65.7%). Median age was 37.5 years (15–87), 52.6% male, 82% B-lineage, and 28% Ph+. Leukocytosis (≥30 for B or ≥100 for T-lineage) occurred in 21.4% and CNS disease in 16.8%. Of these, 43.6% were treated in private centers; the remainder in public. In younger (≤60y) Ph− cases, pediatric-inspired regimens predominated in public (82.1%), while Hyper-CVAD was most frequent in private (54.5%). For elderly (>60y), pediatric-inspired regimens were more often adapted in private (64.7%) vs. public (30.8%) ($p = 0.001$). Baseline disease characteristics did not differ between settings. Among Ph+ cases, dasatinib was used more often in private vs. public (73.1% vs. 28.1%, $p < 0.001$); ponatinib was given to 8 patients (all private). Induction mortality was 15.7% in public vs. 2.8% in private. Fourteen private-center patients received blinatumomab at relapse. Allogeneic HCT rates were higher in private (59.1% vs. 33.1%, $p < 0.001$), mostly in CR1. With median follow-up of 43 months, 4-year OS was 34.9% (public) vs. 51.6% (private, $p < 0.001$); 4-year EFS was 32.9% vs. 45.2%. In younger Ph− patients ($n = 254$), age (HR 1.03, $p < 0.001$) and extramedullary disease (HR 2.97, $p < 0.001$) were independently associated with OS; no OS benefit was observed for pediatric regimens (HR 1.08, $p = 0.66$) or HCT in CR1 (HR 1.3, $p = 0.24$). Pediatric regimens benefitted only public patients (HR 0.467, $p = 0.025$). In Ph+ patients, dasatinib conferred OS benefit (HR 0.544, $p = 0.012$). Private treatment was independently associated with improved OS (HR 0.53, $p < 0.001$) across all subgroups, even after adjusting for age, CNS disease, and HCT in CR1. **Discussion and conclusion:** The impact of socioeconomic factors on outcomes in adult ALL appears to be particularly significant in Latin America. Beyond financial disparities, improved infrastructure, access to blinatumomab and later line TKIs, and the availability of HCT have a direct effect on patient survival. In contrast, public centers – despite treating many patients with pediatric-inspired protocols – continue to face limitations that substantially contribute to poorer outcomes. Our findings also suggest that, with availability of new agents and HCT, pediatric protocols might not benefit all young ALL patients.

https://doi.org/10.1016/j.htct.2025.104625

ID - 1839

PEPTIDÔMICA CLÍNICA E POTENCIAL APLICAÇÃO AO DIAGNÓSTICO E PROGNÓSTICO DA LEUCEMIA LINFOBLÁSTICA AGUDA: ABORDAGEM POR ESPECTROMETRIA DE MASSA E APRENDIZADO DE MÁQUINA

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Introdução: A leucemia linfoblástica aguda (LLA) é uma neoplasia hematológica caracterizada pela proliferação descontrolada de precursores linfoides. A presença do cromossomo Philadelphia (Ph) confere pior prognóstico, reforçando a necessidade de ferramentas moleculares complementares para sua identificação. A integração entre peptidômica clínica, espectrometria de massa e aprendizado de máquina oferece uma abordagem inovadora para a identificação de potenciais biomarcadores plasmáticos e estratificação molecular em contextos clínicos. **Objetivos:** Comparar o perfil peptídico plasmático de pacientes com LLA em relação a indivíduos saudáveis e explorar possíveis diferenças