



The 65th ASH Annual Meeting Abstracts

POSTER ABSTRACTS

905.OUTCOMES RESEARCH-LYMPHOID MALIGNANCIES

Obesity after Induction Is Associated with Poor Overall Survival in Adults with Acute Lymphoblastic Leukemia: Results from a Peruvian Adaptation of the CALGB10403 Protocol

Evelyn Pamela Espinoza Morales, MBBS¹, Veronica Y Arnao-Labajos, MD², Juan Carlos Haro-Varas, MD², Bryan Valcarcel, MDMPH³, Daniel J Enriquez, MD⁴

¹ Universidad Privada San Juan Bautista, Lima, Peru

² Instituto Nacional de Enfermedades Neoplásicas, Lima, Peru

³ The George Washington University, Washington, DC

⁴ Kagoshima University, Kagoshima, Japan

Background: Acute lymphoblastic leukemia (ALL) is a lymphoid malignancy with wide racial disparities. Indeed, ALL is more frequently diagnosed among the Latino population who classically achieve lower remission rates and experience worse survival than other racial and ethnic groups. Several high-risk features including genetic polymorphisms and metabolic issues have been implicated in Latino ethnicity, including obesity. A high body mass index (BMI) at different stages of treatment represents a well-known risk factor in several prospective studies mainly based on white populations. It is unclear whether these findings are consistent in other racial and ethnic unrepresentative groups. We aimed to evaluate the effect of BMI at the end of induction on the overall survival (OS) of Latino adults with ALL.

Methods: We conducted a retrospective cohort study among adult patients diagnosed with ALL in an academic cancer center (Instituto Nacional de Enfermedades Neoplásicas - INEN) from 2017 to 2019, with follow-up through July 2023. The INEN is a national tertiary referral center in Lima-Peru that provides leukemia treatment for approximately 85% of the insured population in Peru. Patients aged 20-65 who successfully achieved complete remission after 4 weeks of intensive induction treatment were included. Patient data were manually abstracted from the medical records. BMI was classified as underweight, healthy weight, overweight and obese according to the CDC and WHO recommendations. Vital status was ascertained with the National Vital Registry. The Kaplan-Meier method and the Log-rank test were used to estimate OS probabilities. Multivariable Cox regression was used to evaluate the effect of BMI on OS, adjusting for sex, age, risk, and immunophenotype.

Results: Of 784 patients identified in the electronic records of the INEN, we excluded 578 because they didn't achieve complete remission, yielding 206 patients for analysis. The median age at diagnosis was 33 years, most were aged 20-40 years old (68%), and female (54%). 160 (78%) were ALL-B Ph- and 126 (61%) corresponded to the high-risk stratification. At the end of the induction, 119 patients presented a healthy weight (58%), 49 (24%) overweight, 26 (13%) obese, and 12 (6%) underweight (Table 1).

With a median follow-up of 55 months, the median OS was 18 months (95% CI: 16-23), and the 5-year OS was 23% for all patients. The 5-year OS was lower in patients with obesity (12%), followed by patients with overweight (20%), healthy weight (26%), and underweight (33%), as evidenced by the Kaplan-Meier curve (Figure 1, $p=0.036$). In the multivariable analysis, obesity (p -value=0.006) was associated with an increased risk of all-cause mortality (adjusted Hazard Ratio [aHR]: 1.93; 95% CI: 1.21-3.08). A very high-risk disease was also associated with poor OS (aHR:2.69; 95% CI: 1.15-6.26) (Table 1).

Conclusion: This study identified that obesity at the end of induction is associated with inferior OS among Peruvian patients who achieved complete remission. Our real-world findings should be validated in prospective studies including other Latino populations to recommend the feasibility of weight reduction strategies.

Disclosures No relevant conflicts of interest to declare.

Table 1: General characteristics of the cohort and multivariate analysis of overall survival

Characteristics	Frequency n	(N=206) %	aHR (CI 95%)	ap-value [±]
Sex				
Female	111	54	Reference	-
Male	95	46	1.09 (0.79-1.52)	0.590
Age				
20-40 y	140	68	Reference	-
41-65 y	66	32	1.38 (0.96-1.98)	0.078
Risk				
Standard	65	32	Reference	-
High	126	61	1.38 (0.95-2.00)	0.094
Very high	15	7	2.69 (1.15-6.26)	0.022*
Immunophenotype				
B-ALL Ph -	160	78	Reference	-
B-ALL Ph +	40	19	0.67 (0.39-1.14)	0.138
T-ALL	6	3	0.70 (0.25-1.94)	0.496
BMI				
Underweight	12	6	0.83 (0.39-1.75)	0.624
Healthy weight	119	58	Reference	-
Overweight	49	24	1.03 (0.69-1.53)	0.895
Obesity	26	13	1.93 (1.21-3.08)	0.006*

aHR: adjusted Hazard ratio
 ap-value: adjusted p-value
 ± Cox multivariate regression analyses
 * Statistically significant

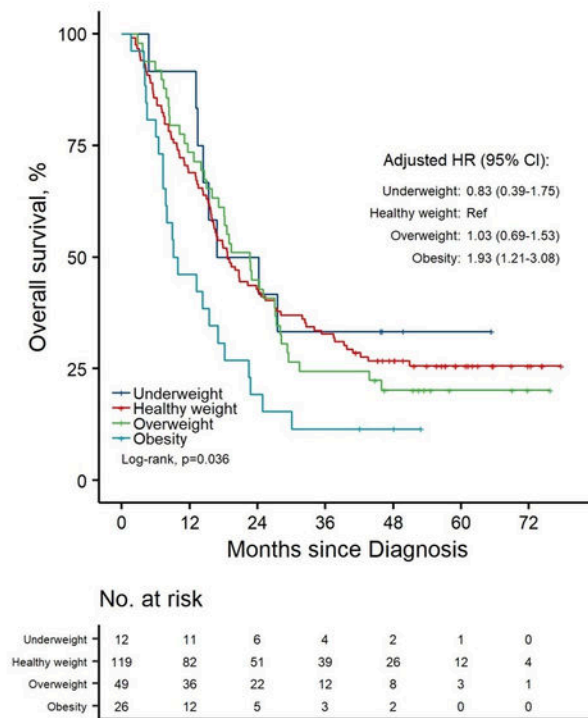


Figure 1: Kaplan-Meier curve for overall survival according to BMI at the end of induction

Figure 1

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