

Impact of Insurance Status and Distance from Residence to Treatment Center on the Outcomes of Patients Diagnosed with Acute Myeloid Leukemia



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Introduction

- Numerous factors may affect the survival outcomes of patients with acute myeloid leukemia (AML), mainly disease-related and treatment-related factors.
- The impact of other factors, such as the insurance status and the distance to healthcare facilities is still unclear.
- These factors differ between different healthcare systems.
- In some studies, payer status has been shown to have significant effect on the overall survival of patients with AML after adjusting for all other predictive factors (1).
- Distance to a health care facility and travel time have been recognized as prognostic factors in solid cancers (2).
- In Lebanon, the health system is different than that in the European countries and USA, where both public and private insurance coverages may be implemented in addition to significant portion of uninsured patients.

Objective

To investigate the effects of insurance status and distance to the treatment center on the survival of newly diagnosed AML patients

Methods

- This is a single-center, observational, retrospective study of patients diagnosed with AML (2015–2020) and treated at the American University of Beirut Medical Center (AUBMC), a tertiary care center in Lebanon.
- Data regarding patient baseline characteristics, disease-related factors, insurance status, and area of residence were collected.
- Multivariate Cox regression analysis was used to identify main independent predictors of overall survival (OS).

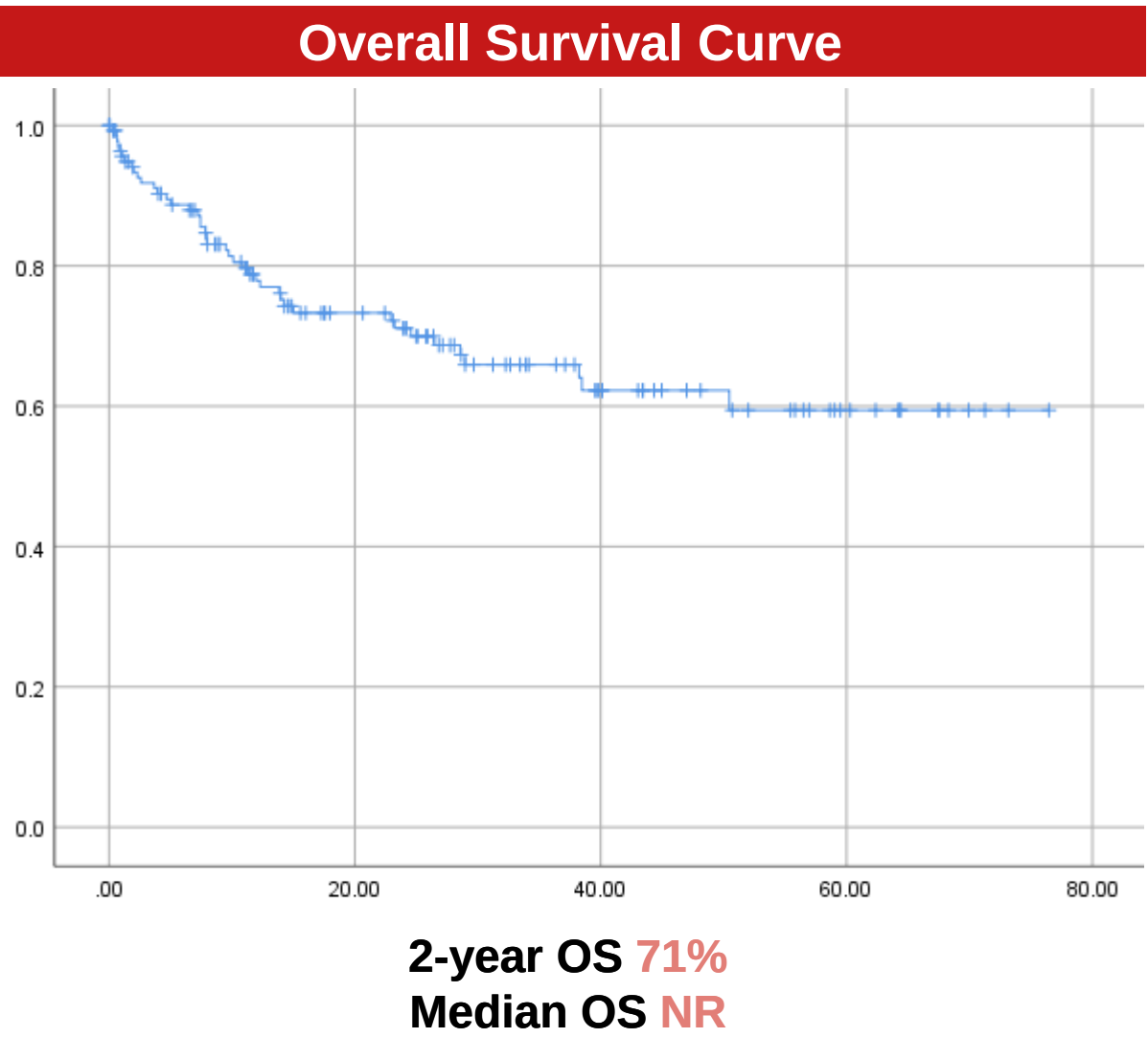
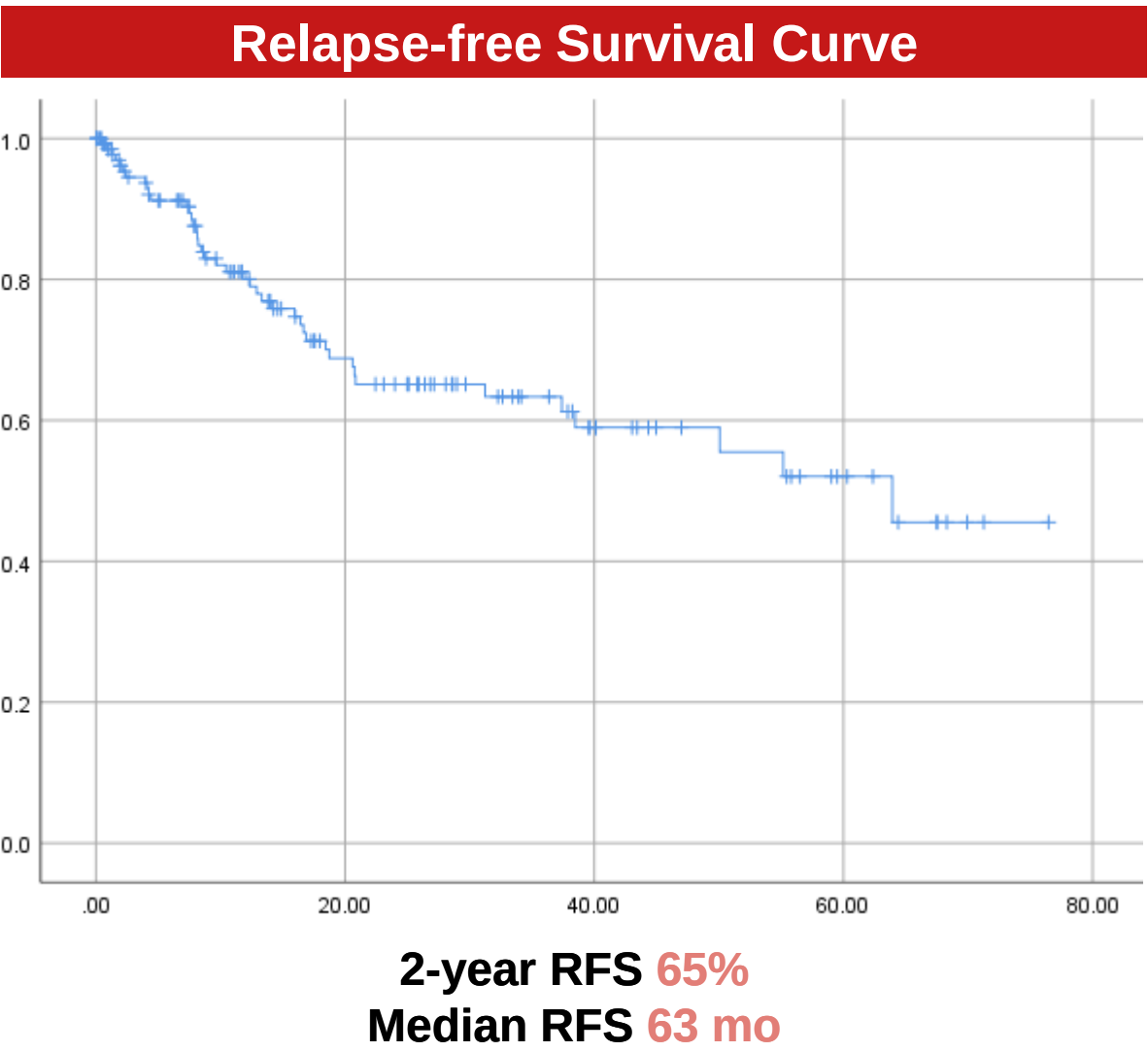
Results

- We screened the medical records of 218 patients and were able to identify 142 AML patients who were newly diagnosed and treated at AUBMC with a median follow-up of 22.4 months.

Table 1. Baseline characteristics

Age, median (range)		52 (18-86)
Gender	Male	91(64%)
	Female	51 (36%)
ACE-27 comorbidity score*	0	104 (73%)
	1	17 (12%)
	2	19(13%)
	3	2 (2%)
Smoking status	Never smoker	93 (65%)
	Current smoker	19 (13%)
	Ex-smoker	30 (22%)
BMI, median (range)		26.5 (16-42)
Insurance status	Insured	101 (71%)
	Uninsured	41 (29%)
Distance from treatment center	< 40km	61 (43%)
	>40km	81 (47%)
ELN 2017 risk score	Favorable	38 (37%)
	Intermediate	77 (54%)
	Adverse	23 (16%)
	NA	4 (3%)
Chemotherapy received	Intensive chemotherapy	88 (62%)
	Hypomethylating agents	25 (18%)
	Low dose chemotherapy	2 (2%)
	Supportive care	1 (1%)
	ATRA/Arsenic	21 (16%)
Allogeneic stem cell transplantation	Yes	66 (46%)
	No	76 (54%)

* Without including the initial leukemia as a variable; ** BMI body mass index, ELN European LeukemiaNet, ACE27 Adult comorbidity evaluation



- A Cox regression model for OS was done using: age, gender, body mass index, ACE-27 comorbidity score, smoking status, insurance status, distance from the center, ELN classification and treatment used.

Variable	HR	95% CI	p Value
Distance for center >40km	4.38	1.75-10.95	0.002
Uninsured	3.65	1.79-7.45	0.000
ELN classification	1.45	0.14-14.9	0.754
Gender	1.31	0.78-2.20	0.311
Age	1.02	1.01-1.04	0.012
smoking status	1.01	0.52-1.97	0.976
Body mass index	0.94	0.89-1.00	0.054
Treatment received	0.79	0.34-1.86	0.596
ACE-27 comorbidity score	0.497	0.28-0.87	0.015

- A higher risk of death was seen among the uninsured patients and those living beyond 40 km from the treatment center compared with fully insured patients and those living in proximity to the center.

Discussion

- Factors other than disease- and patient-related factors contribute to the overall survival in AML patients.
- Insurance status has been shown to significantly influence outcomes.
- Area of residence from our treatment center which is in the capital of Lebanon also affects outcome.
- Having insurance and living in close proximity to the center can, in turn, reflect the financial status of the patients as those living in close proximity to the medical center and have insurance presumably have better financial status compared to those uninsured and living far from treatment center.

Conclusions

- The outcome of patients with AML does not depend only on disease-related factors or treatment-related factors, as the insurance status and the distance from the area of residence to the treatment center were found to be independent predictors of survival in AML patients.
- Our study highlights the importance of access to medical care, disparities related to insurance status, and the need to improve these disparities.

Disclosures

- All authors have no conflict of interest.

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