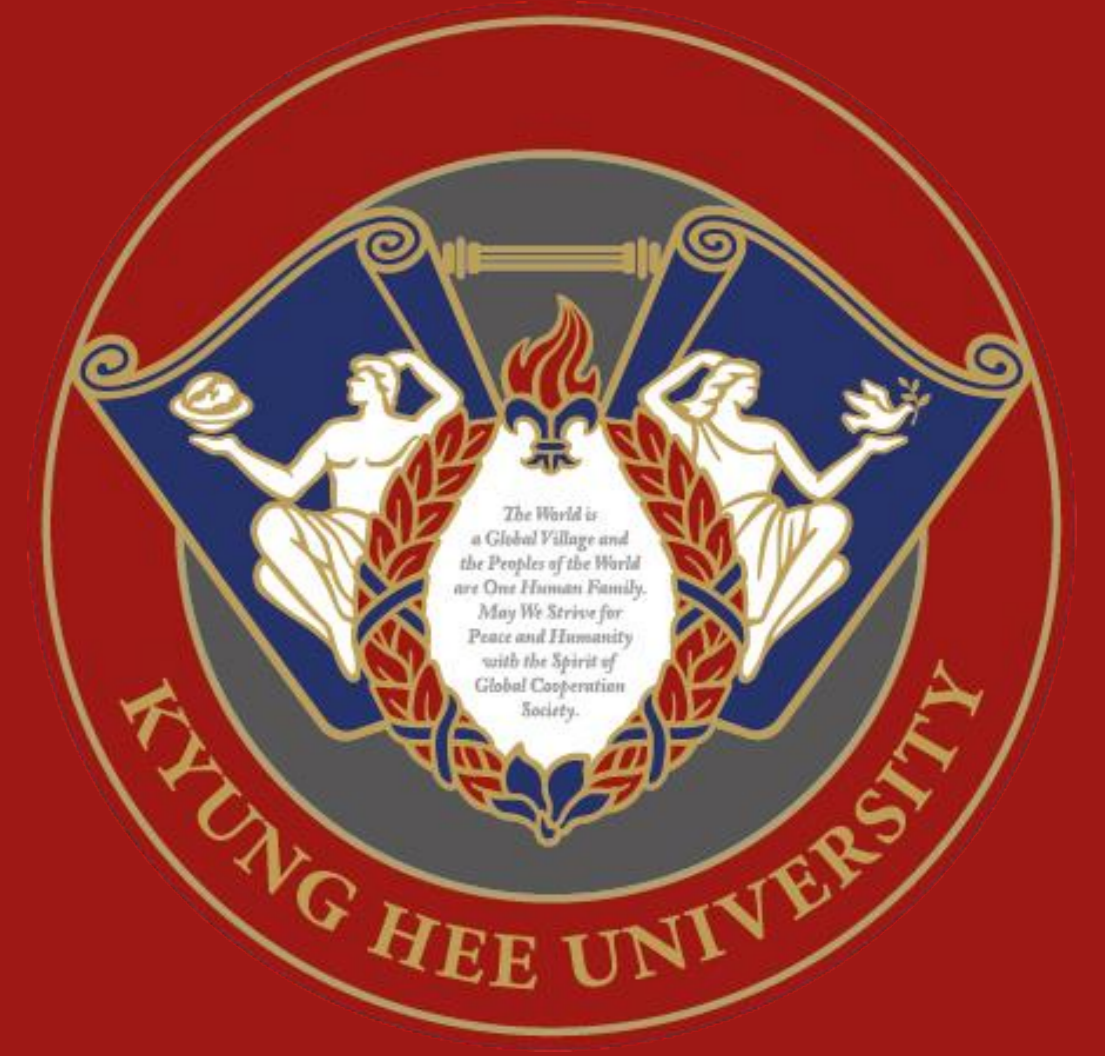


Healthcare Costs Associated with Hematopoietic Stem-Cell Transplantation in Patients with Acute Myeloid Leukemia: A Population-Based Retrospective Cohort Study in Korea

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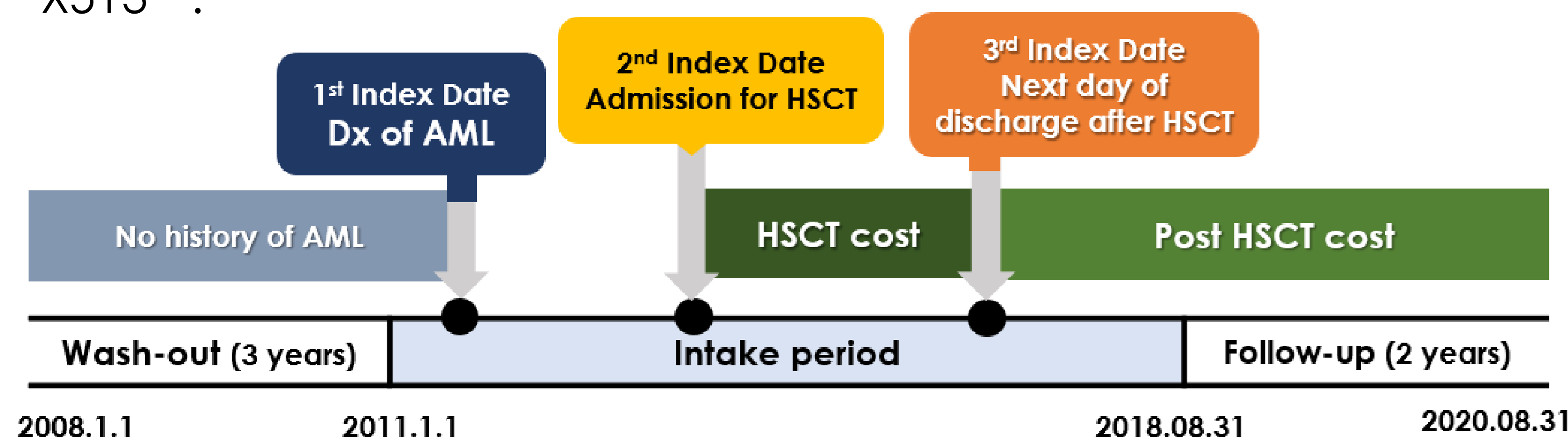


INTRODUCTION

- Hematopoietic stem-cell transplantation (HSCT) is considered an important treatment strategy in medically eligible acute myeloid leukemia (AML) patients.
- HSCT is costly, and its use is steadily rising in the treatment of cancer.
- The objective of study is to estimate the medical cost for HSCT and subsequent costs after surgery in patients with AML.

METHODS

- Data source**
 - Health Insurance Review and Assessment Service (HIRA) claims Database covering the entire AML population in South Korea from Jan 2008 to Aug 2020.
- Study population**
 - Patients were selected with the first diagnosis of primary AML (ICD-10 code: C92-C96) between Jan 2011 and Aug 2018 without any AML history in the previous three years.
 - We defined patients receiving HSCT based on the procedure code "X513*".



- Outcomes**
 - HSCT cost was calculated as the medical expenses from the time patients were admitted for surgery until they were discharged.
 - Post-HSCT cost was measured as annual medical expenses incurred from the day after discharge to the following year (1st & 2nd year).
- Statistical analysis**
 - Patient baseline characteristics and costs were summarized using descriptive analyses.

RESULTS

Table 1. Baseline characteristics

	N	%
No of patients	2,213	100.0
Female	1,019	46.1
Age, < 65 years	2,171	98.1
Age, ≥ 65 years	42	1.9
Type of Insurance		
National health insurance	2,172	98.1
Others	41	1.9
CCI score		
0-2	1,254	56.7
≥ 3	959	43.3
Death within 1 year after HSCT	498	22.5
Death within 2 year after HSCT	702	31.7

CCI, Charlson Comorbidity Index; HSCT, Hematopoietic stem-cell transplantation.

Table 2. Healthcare cost for HSCT and post-HSCT

	N	Mean (SD)	Median	Q1-Q3
(unit: USD)				
Hematopoietic stem cell transplantation				
Total cost	2,213	29,916 (20,240)	25,389	20,467-32,247
Post-Hematopoietic stem cell transplantation				
First year	1,704	26,929 (27,457)	17,546	11,970-30,314
Second year	1,460	11,812 (21,961)	3,978	1,898-19,764

SE, Standard deviation; Q1, first quartile; Q3, third quartile.

Note: This is the cost for surviving recipients among patients who can be followed up for at least two years after surgery. All costs have been converted to present value.

DISCUSSION

- While the incidence of AML is known to be high in elderly patients, HSCT surgery is attempted more often in patients younger than 65 years of age.
- In the first year, including surgery, very large medical costs are expected to incur a heavy burden on AML patients. Understanding the factors that contribute to high expenses can help to develop strategies to reduce future healthcare costs.
- A limitation of this study is that post-HSCT costs were only derived for patients who met the follow-up period, so the costs of patients who died were not considered.

CONCLUSION

- HSCT surgery and subsequent healthcare expenses are costly, placing a huge burden on patients with AML.
- This study indicates a need to develop new strategies to effectively manage AML patients who received HSCT, which might bring lower medical costs.
- Also, It suggests that a better approach is essential to increase postoperative survival in patients.

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