

Healthcare resource utilization and costs associated with previously treated advanced non-small cell lung cancer patients without EGFR mutations or ALK rearrangements in Korea

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INTRODUCTION

- Treatment options for the advanced non-small cell lung cancer (NSCLC) patients without epidermal growth factor receptor (EGFR) mutations or anaplastic lymphoma kinase (ALK) rearrangements were limited to chemotherapy or immunotherapy.
- Many studies emphasized the economic burden of NSCLC, but there is no study which evaluated healthcare resource utilization (HCRU) of advanced NSCLC patients without EGFR mutation or ALK rearrangements.
- Understanding real-world HCRU and costs is needed to optimize the benefit of the patients.

OBJECTIVES

- This study aims to describe real-world HCRU and costs among advanced NSCLC patients without EGFR mutation or ALK rearrangements who received chemotherapy or immunotherapy for second line of therapy (LOT) in Korea.

METHODS

- This retrospective cohort study was conducted using the National Health Insurance Review and Assessment claims database from 2013 to 2020.
- Adult patients with refractory or relapsed stage IIIb–IV NSCLC after first LOT were identified between 2015 and 2019.
- We excluded patients who have received treatments for small cell lung cancer (SCLC) or EGFR/ALK tyrosine kinase inhibitor (TKI) during the study period.
- The index date was defined as the first day of second LOT.
- The advanced NSCLC patients without EGFR mutations or ALK rearrangements were followed up from index date to second LOT discontinuation, death or end of study (Figure 1).

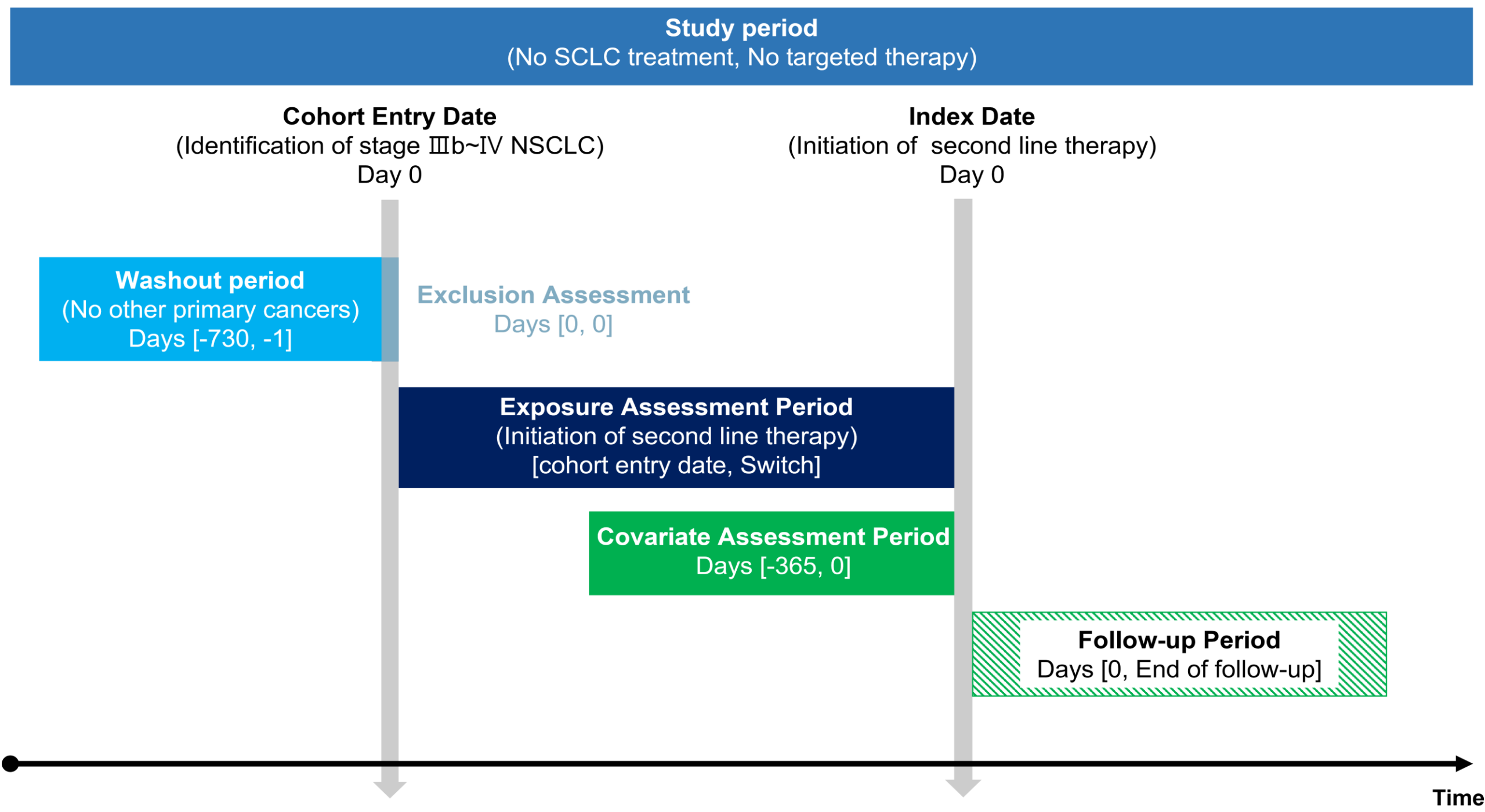


Figure 1. Study design

- HCRU and costs consisted of hospitalization, outpatient visits, and drug costs and were assessed during second LOT.
- HCRU and costs were described according to the treatment classes of second LOT and calculated per patient per month (PPPM) for comparison within the same treatment length.
- Costs were presented as US dollars (2021 USD; 1 USD = 1,188.8 Korean Won).

RESULTS

- Of 6,019 patients included, docetaxel was the most used second LOT (18.7%), followed by gemcitabine+platinum (15.8%) and pembrolizumab (13.6%).
- According to regimens, we categorized patients into three groups: docetaxel (n=1,124, 18.7%), other chemotherapies (n=3,107, 51.6%) , and immunotherapy (n=1,788, 29.7%).
- Patients’ characteristics are shown in Table 1.
- Mean number of HCRU for docetaxel, other chemotherapies, and immunotherapy group was 1.2, 1.2, and 0.8 PPPM for hospitalization; 2.8, 3.5, and 2.5 PPPM for outpatient visits, respectively (Figure 2).

Table 1. Baseline characteristics of study population

	Docetaxel (N=1,124)	Other chemotherapies (N=3,107)	Immunotherapy (N=1,788)
Age group at initiation of second LOT, n (%)			
<60	243 (21.6)	961 (22.7)	302 (17.0)
60–69	452 (40.2)	1,750 (41.4)	656 (36.9)
≥70	429 (38.2)	1,520 (35.9)	820 (46.1)
Sex, n (%)			
Male	1,011 (89.9)	2,704 (87.0)	1,551 (86.7)
Female	113 (10.1)	403 (13.0)	237 (13.3)
CCI, n (%)			
<3	416 (37.0)	1,230 (39.6)	639 (35.7)
≥3	708 (63.0)	1,877 (60.4)	1,149 (64.3)
Insurance type			
National health insurance	1,008 (89.7)	2,837 (91.3)	1,614 (90.3)
Medical aid or veterans	116 (10.3)	270 (8.7)	174 (9.7)
Geographic region of hospital, n (%)			
Capital area	845 (75.2)	2,246 (72.3)	1,317 (73.7)
Metropolitan/rural	279 (24.8)	861 (27.7)	471 (26.3)
History of biomarker test, n (%)			
No test	717 (63.8)	2,008 (64.6)	843 (47.1)
EGFR	400 (35.6)	1,073 (34.5)	894 (50.0)
ALK	170 (15.1)	462 (14.9)	453 (25.3)
Follow-up period(months), mean (SD)	2.4 (2.3)	2.8 (3.3)	6.1 (7.0)

LOT, line of therapy; CCI, charlson comorbidity index; EGFR, epidermal growth factor receptor; ALK, anaplastic lymphoma kinase; SD, standard deviation

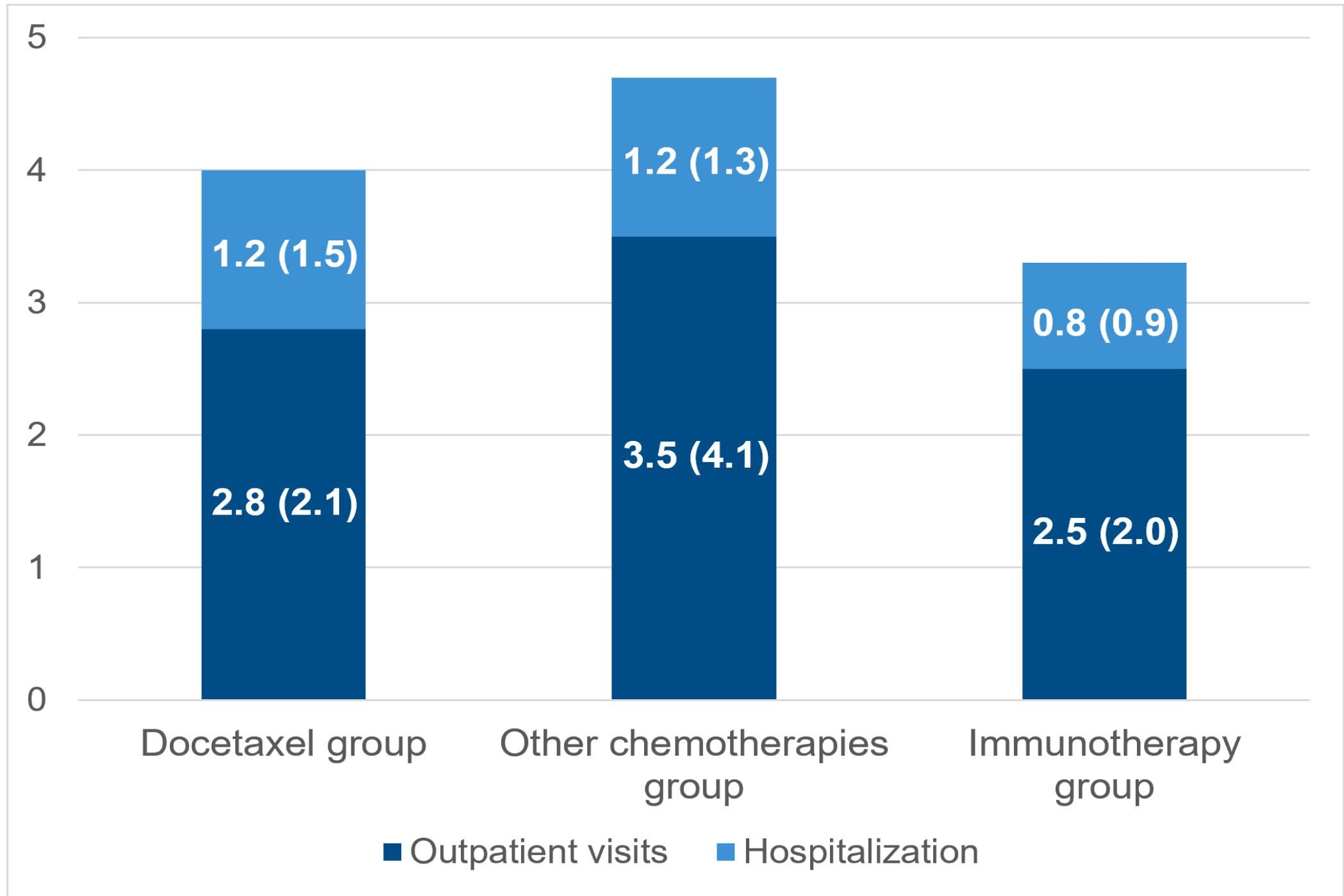


Figure 2. Healthcare resource utilization during second line of therapy, per patient per month, mean (SD)

- Mean total costs PPPM for docetaxel group were \$4,400 (\$3,707 hospitalization; \$693 outpatient visits); for other chemotherapies group, \$4,173 (\$3,251 hospitalization; \$922 outpatient visits); for immunotherapy group, \$8,635 (\$5,121 hospitalization; \$3,514 outpatient visits) (Table 2).

Table 2. Healthcare cost during second line of therapy, per patient per month, mean(SD)

	Docetaxel (N=1,124)	Other chemotherapies (N=3,107)	Immunotherapy (N=1,788)
Total	\$ 4,400 (5,856)	\$ 4,173 (7,894)	\$ 8,635 (7,550)
Hospitalization	\$ 3,707 (5,938)	\$ 3,251 (7,951)	\$ 5,121 (8,348)
Outpatient visits	\$ 693 (668)	\$ 922 (1,360)	\$ 3,514 (2,809)

PPPM, per patient per month; SD, standard deviation

- Mean costs for drugs were \$1,278, \$1,244 and \$5,453 PPPM for docetaxel, other chemotherapies and immunotherapy groups, respectively. More than 90% of total drug costs were in-hospital drug costs (Table 3).

Table3. Drug cost during second line of therapy, per patient per month, mean(SD)

	Docetaxel (N=1,124)	Other chemotherapies (N=3,107)	Immunotherapy (N=1,788)
Total	\$ 1,278 (1,136)	\$ 1,244 (1,210)	\$ 5,453 (2,367)
In-hospital use	\$ 1,195 (1,118)	\$ 1,167 (1,186)	\$ 5,376 (2,357)
Pharmacy	\$ 83 (162)	\$ 77 (193)	\$ 78 (173)

PPPM, per patient per month; SD, standard deviation

CONCLUSIONS

- Costs associated with hospitalization and in-hospital drug were the majority of total and drug costs, respectively.
- This national-level study quantifies the economic burden of stage IIIb–IV NSCLC without EGFR mutation or ALK rearrangements in Korea.

DISCLOSURES | This study was funded by Amgen Inc.