

REAL-WORLD HEALTHCARE COSTS IN PATIENTS WITH METASTATIC NON SMALL CELL LUNG CANCER IN ITALY

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OBJECTIVES AND METHODS

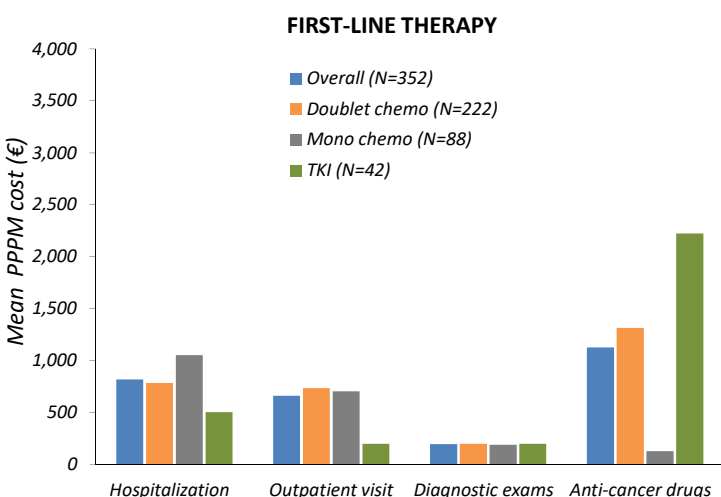
This study sought to evaluate the real-world direct healthcare costs of metastatic non-small cell lung cancer (mNSCLC) patients by line of therapy prior to the availability of immunotherapies (IO). Patients who received anti-cancer systemic treatment (doublet chemotherapy, mono chemotherapy, tyrosine-kinase inhibitors (TKI)) for mNSCLC at IRST, Italy, from January 2014 to June 2017 were included in this retrospective analysis. A whole evaluation of the costs, including hospitalizations, outpatient visits, diagnostic exams and systemic anti-cancer drugs was collected as for the first-line (1) as well as for second-line (2) therapy. Data referred to procedures received by each patient and their costs were obtained as from the electronic health record as from the regional

administrative databases. An algorithm along with medical review were used for definition of therapy line duration. The length of each line was estimated from the start of treatment to the earliest occurrence among: (a) start of a new agent not included in the previous therapy regimen (b) a gap of > 42 days with no treatment (the end date was the last day with any therapy agent available according to the recommended treatment intervals for considered regimen) (c) death (d) end of study period (December, 2017). The analysis was conducted from the National Health System perspective. The mean cost per-patient-per-month (PPPM) was calculated for overall patients and for each treatment regimen divided by line of therapy.

RESULTS

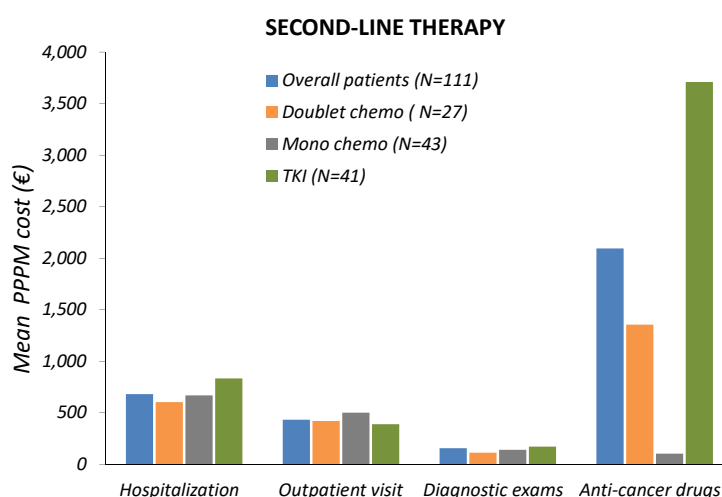
A total of 352 first-line patients and 111 second-line patients were followed for a mean time of 143 and 106 days respectively. At least one driver mutation had been detected in all patients who received TKI as first-line and in about half of patients who received TKI as second-line. Mean total healthcare costs were 2,805€ (range:197-13,962€) and 3,046€ (range:78-5,105€) PPPM in the first and second line, respectively. These costs were mainly driven by treatment (40% in the first-line and 62% in the second-line) and hospitalization (29% in the first-line and 20% in the second-line). Generally, a similar pattern was observed between lines, differences in cost were found only for TKI group.

Figure 1: Mean PPPM cost for hospitalization, outpatient visits, diagnostic exams and anti-cancer drug by type of treatment regimen for first-line therapy.



Cost of hospitalization, outpatient visits and diagnostic exams were slightly higher in first-line compared to second line. Cost of anti-cancer drugs was similar in both lines, except for TKI, which was almost two times higher in second-line. The analysis showed that among regimens, hospitalization cost for mono chemotherapy group and cost for TKI treatment were higher in first than in second-line, respectively. In both lines cost of outpatient visits was lower for patients treated with TKI. In first line, cost of diagnostic exams was similar regardless of type of treatment, instead slightly variations across regimens were found in second-line. In both lines, the cost of drugs was highest for TKI, and least for mono chemotherapy.

Figure 2: Mean PPPM cost for hospitalization, outpatient visits, diagnostic exams and anti-cancer drug by type of treatment regimen for second-line therapy.



CONCLUSION

Based on real-world data, total health care costs PPPM of first and second-line NSCLC population prior to IO approval in Italy were in line with the literature. In second line, the increasing cost of drugs was mainly due to crizotinib and osimertinib therapy in 11 out of 41 patients. Higher cost of hospitalization was linked to mono chemotherapy group, because of their older age (over 65 years old) and poorer ECOG performance status. For TKI group, cost of hospitalization and outpatient visits were lower in first-line than in second one, suggesting that TKI health spending costs less in first-line patients selected for driver mutation than in unselected patients as in second-line. In the era of personalized medicine, where the treatment is target oriented, additional research on costs related to selected therapy based on the cancer biology are needed. Comparing healthcare costs of mNSCLC patients after the introduction of immunotherapy could allow to evaluate differences among different treatment approaches.

Financial support for this study was provided by Merck Sharp & Dohme Corp., a subsidiary Merck & Co., Inc., Kenilworth, NJ

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