Change in Healthcare Resource Use and associated costs of patients with metastatic lung cancer between 2013 and 2019 : an observational study from the French national claims database

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Introduction

Lung cancer, mostly diagnosed at metastatic stage, is the leading cause of cancer-related death in France. Treatment landscape in metastatic lung cancer is quickly evolving (e.g., targeted therapies, immunotherapies). These treatments have improved survival but are also associated with increased costs. Robust and recent data are needed to help address affordability concerns from stakeholders about innovation in oncology.

Objective

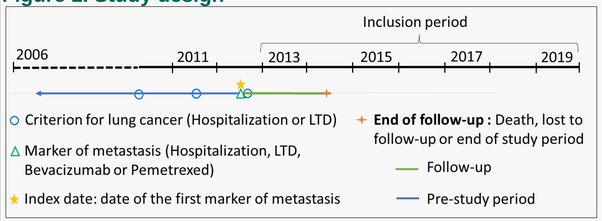
Describe the evolution of annual HealthCare Resource Use (HCRU) and associated costs of metastatic lung cancer.

Methods

Study design

- Observational cohort study using the French National Health insurance System databases (SNDS), with an inclusion period from 01-January-2013 to 31-December-2019 and a pre-study period of 7 years to identify the primary cancer.
- Inclusion criteria, among adult patients:
  - At least one lung cancer diagnosis*
  - And a metastasis marker: secondary cancer diagnosis* or reimbursement of bevacizumab/pemetrexed
- Exclusion criteria, among adult patients:
  - Metastasis marker before the 1st lung cancer diagnosis
  - Diagnosis of another cancer prior to 1st lung cancer diagnosis
  - Patients not covered by the general health scheme

Figure 1. Study design



Statistical analyses

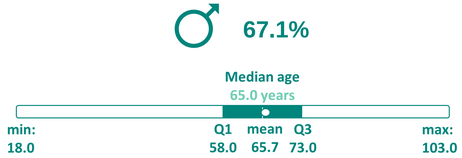
- HCRU: each year, percentage of patients with at least one care for each expenditure item and, among them, mean number of cares.
- Associated costs: monthly from a health insurance perspective
- Trend tests of total mean monthly cost using Joinpoint software

*ICD-10 code during hospitalization (all diagnoses) or recorded as Long-Term Disease (LTD) status: C34 and C399 (lung cancer) and C77 to C79 (secondary cancer)

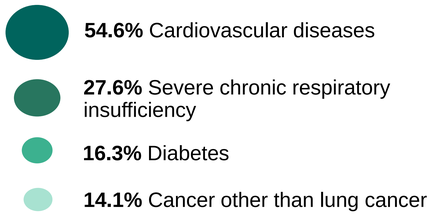
Results

Population

- 116,686 patients with metastatic lung cancer were identified between 2013 and 2019 in the SNDS.



Patients' comorbidities at index date

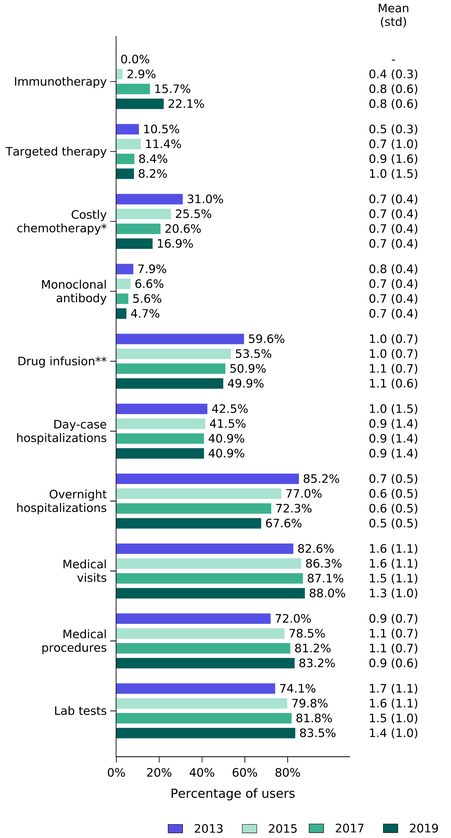


Healthcare Resource Use

- The percentage of patients treated by immunotherapy **increased** from 2.9% in 2017 to 22.1% in 2019, whereas those treated by costly chemotherapy **decreased** (from 31.0% in 2013 to 16.9% in 2019).
- The percentage of patients with overnight hospitalizations **decreased** from 85.2% in 2013 to 67.6% in 2019 while the use of day hospitalizations remained **stable** (about 40%).
- The percentage of patients with outpatient care **increased** over the study period:
  - medical visits (from 82.6% to 88.0%),
  - lab tests (from 74.1% to 83.5%),
  - medical procedures (from 72.0% to 83.2%).

Results

Figure 2. Percentage of patients with at least one care and mean monthly number of cares (HCRU) in 2013, 2015, 2017 and 2019



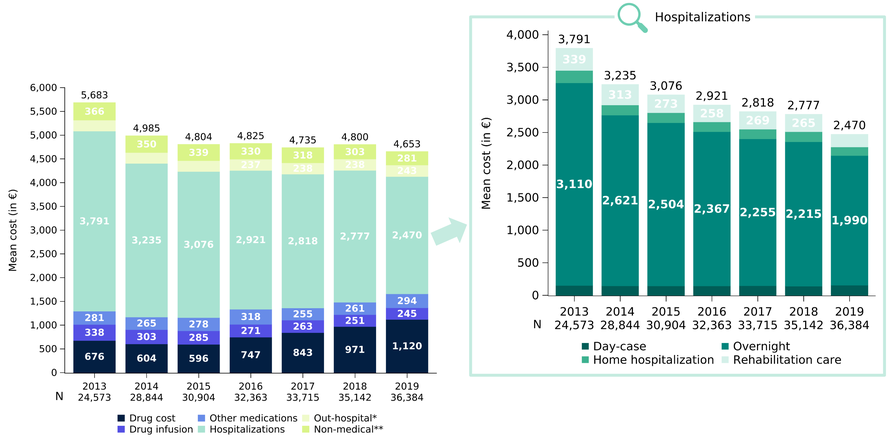
* Conventional chemotherapy not available in the SNDS as directly included in the stay cost
** Hospitalization for costly or conventional chemotherapy infusion

Results

Costs

- Statistically significant decrease of ⊖ **2.85%** per year in mean monthly costs (95%CI: -4.13 to -1.56, p<0.0001) between 2013 and 2019 (from 5,683€ to 4,653€).
- Limited increase in anti-cancer drugs acquisition (i.e. drug dispensing and infusion) costs (from 1,014€ to 1,365€).
- Large decrease in overnight hospitalization costs (from 3,110€ to 1,990€).

Figure 3. Annual cost between 2013 and 2019, overall and by health expenditure item



* Out-hospital item includes costs of medical visits, medical procedure and lab tests.
** Non-medical item includes costs of medical transport and sick leaves

Conclusion

This study highlights a decrease in global management costs of patients with metastatic lung cancer in France between 2013 and 2019 due to an increase in drugs acquisition costs offset by a decrease in hospitalization costs. These findings may be the result of French health policy and may also be related to improved disease management.

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