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.

Study design
- Observational cohort study using the French National Health insurance System databases (SNDS), with an inclusion period from 01-01-2013 to 31-12-2019 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

Results
- 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%).

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

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 5,682€ to 4,659€).
- 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

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

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

Patients’ comorbidities at index date
- 54.6% Cardiovascular diseases
- 27.6% Severe chronic respiratory insufficiency
- 16.3% Diabetes
- 14.1% Cancer other than lung cancer

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