Treatment Patterns in Non-small Cell Lung Cancer in France: ARTISTE Study of Cancerology Patient Charts

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PCN40

Background

- Lung cancer is the leading cause of cancer-related mortality in France, with deaths increasing steadily from approximately 20,000 in 1995 to 30,500 in 2015[1]
- Non-small cell lung cancer (NSCLC) accounts for approximately 75–80% of all lung cancer cases in France.[2] Most of these patients are diagnosed with advanced or metastatic disease
- Over the past decade, treatment of advanced or metastatic NSCLC has been greatly improved by identifying those who may benefit from a targeted therapy or other drug regimen[3]
- The arrival of new immuno-oncology (IO) therapies[4,5] is expected to modify the treatment patterns of those with advanced NSCLC
- Due to the projected increase in incidence of NSCLC in France, coupled with the poor outcomes associated with this disease, understanding the clinical characteristics and treatment patterns can provide insight into NSCLC patients with unmet medical needs

Study Objective

- To describe treatment patterns according to relevant demographics and clinical factors among advanced NSCLC patients treated in France in 2015

Methods

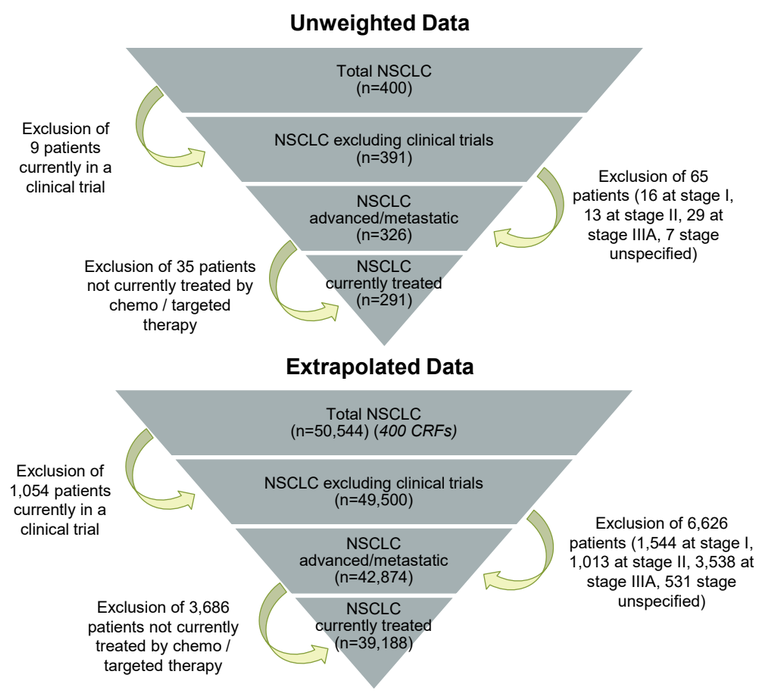
Data

- Cancerology is a descriptive, non-interventional study conducted by Kantar. It is a cross-sectional, real-world dataset that is representative of all main onco-haematological malignancies treated in France
- Patients' data for Cancerology were collected directly from physicians who care for patients with one or more tumours treated among public and private practice units in France
- Data were collected between April and June 2015 for the Cancerology database, which includes patient characteristics, clinical profiles, current and previous antitumour treatment, and toxicities
- Data for the present analyses were extracted from case report forms (CRFs) completed by physicians for patients with advanced NSCLC, then extrapolated to represent advanced NSCLC patients treated in France[6]
- Data extrapolation was performed using a previously validated two-step model:[6]
  - Each patient was weighted according to the caseload of the practitioner, estimated from the reported prevalence across 2 weeks
  - Next, data collected were re-weighted to assign a more population-representative value to each case, according to the type of practice
- These extrapolation methods were used to reduce bias and improve the generalisability of the sample

Sample

- Data representative of 39,188 patients from 291 CRFs that met the criteria outlined below were included in the final analyses (**Figure 1**)
- Inclusion criteria:
  - Patients with evidence of NSCLC as determined by the physician using a modified ICD-10 table. Since the ICD-10 codes do not identify this category of patients, this study utilised a specialised code (C34) to differentiate between small cell lung cancer and NSCLC patients
  - Patients with advanced cancers, defined as those presenting with metastases or with stage IIIb/IV tumours
  - Patients treated with chemotherapy or targeted therapy between April and June 2015 by a physician in France participating in data collection
- Exclusion criteria:
  - Current involvement in a clinical trial
  - Tumour stage not specified

Figure 1. Advanced NSCLC Sample



Measures

Patient Characteristics

- Patient demographics included age, gender and body weight
- Patient clinical characteristics included performance status as measured by an Eastern Cooperative Oncology Group (ECOG) score[7]

Treatment Patterns and Characteristics

- Treatment pattern measures included type of treatment, frequency of the line of treatment, agents prescribed in the chemotherapy/targeted therapy and combined chemotherapies, and tumour response to treatment

Safety of Treatment

- Safety of treatment was assessed by capturing the level of toxicity for toxicities associated with each possible treatment regimen
  - Toxicity scores: 0=absence of any sign of toxicity; 1=minor toxicity or toxicity responding well to the symptomatic treatment and/or not leading to any change in the treatment; 2=toxicity responding badly to the symptomatic treatment and/or leading to a change in the treatment or delayed toxicity arriving after the end of treatment; 3=major toxicity requiring treatment stoppage; 4=inappreciable toxicity

Statistical Analyses

Descriptive Statistics

- Descriptive statistics are reported as counts and percentages for categorical variables and means and standard deviations (SD) for continuous variables
- Double counts of patients in varying units of the same provider were removed from analyses and all data are reported from the extrapolated methods outlined

Results

Sample Characteristics

- Patients (N=39,188) had a mean age of 64.2 years (SD 10.1) and a mean weight of 68.9 kg (SD 12.0). The majority were male (69.3%), were treated in the outpatient setting (77.8%), had an ECOG score of 1 (61.1%) and had non-squamous tumours (70.7%) (**Table 1**)

Treatment Patterns

- The majority of patients (82.6%) were prescribed chemotherapy/targeted therapy/IO therapy without any other parallel treatment (e.g. surgery or radiotherapy) (**Figure 2**)
- Most patients (64.0%) had treatment cycles lasting 3 weeks (**Figure 3**)
- Of combination regimens, platinum was most often prescribed in combination with at least one other product, most commonly pemetrexed (**Table 2**)
- Treatment regimens prescribed differed by line of treatment (**Table 2**)
  - For 1st line of treatment, the majority of patients (84.1%) were on platinum combinations
  - For 2nd and 3rd+ line treatments, monotherapies were the most commonly prescribed regimens
    - Docetaxel (32.3%) was most commonly prescribed for patients in 2nd line treatment
    - Nivolumab (24.9%) was most commonly prescribed for patients in 3rd+ line treatment

Safety of Treatment

- Of patients currently prescribed a monotherapy, 30.5% experienced 3 or more toxicities (**Figure 4**)
  - No toxicity was reported in 73.4% of patients currently taking nivolumab (**Figure 5**)
- For patients currently prescribed a combination therapy, 38.1% experienced 3 or more toxicities (**Figure 4**)
  - No toxicity was reported in 37.9% of patients currently prescribed platinum + pemetrexed and in 100% of patients prescribed paclitaxel + bevacizumab (**Figure 5**)

Tumour Response to Treatment

- Complete response was reported for 2.7% of patients in 1st line, 11.2% of patients in 2nd line and 2.3% of patients in 3rd+ line (**Figure 6**)
- Disease progression increased from 4.4% among patients in 1st line and 13.6% among patients in 2nd line to 26.9% among patients in 3rd+ line (**Figure 6**)

Table 1. Sample Characteristics at Time of Data Collection

		Advanced NSCLC (N=39,188)
Male, n (%)		27,140 (69.3)
Age (years), mean (SD)		64.2 (10.1)
Body weight (kg), mean (SD)		68.9 (12.0)
Treatment setting, n (%)	Inpatient	8,026 (20.5)
	Outpatient	30,489 (77.8)
	Home care	673 (1.7)
Histology of cancer, n (%)	Non-squamous	27,719 (70.7)
	Squamous	11,192 (28.6)
	Unspecified	277 (0.7)
ECOG score, n (%)	0	5,690 (14.5)
	1	23,956 (61.1)
	2	9,245 (23.6)
	3	297 (0.8)

Figure 2. Current Cancer Treatment Regimen (N=39,188)

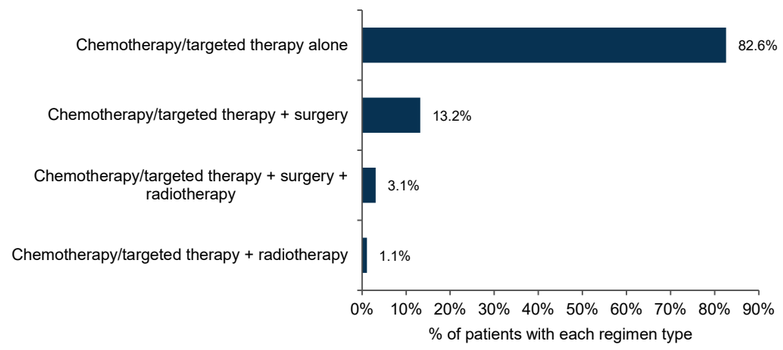


Figure 3. Length of Treatment Cycle (N=39,188)

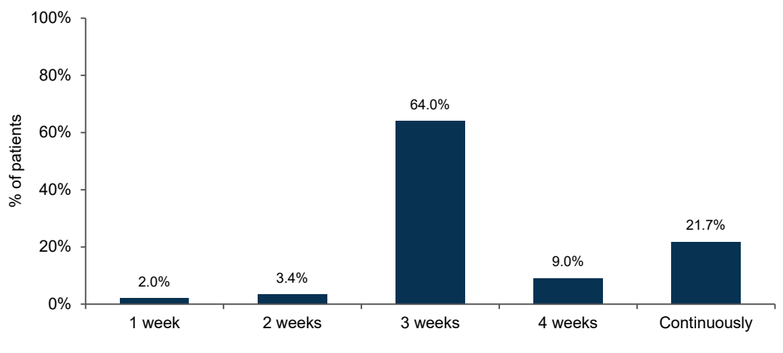


Table 2. Regimen Type by Line of Treatment (N=39,188)

	1st line (n=24,796)	2nd line (n=10,857)	3rd line (n=3,535)	*All patients (N=39,188)*
Monotherapy, n (%)	**3,932 (15.9)**	**8,689 (80.0)**	**2,956 (83.6)**	***15,577 (39.7)***
Erlotinib	1,707 (6.9)	3,324 (30.6)	598 (16.9)	*5,629 (14.4)*
Docetaxel	–	3,511 (32.3)	349 (9.9)	*3,860 (9.8)*
Gefinitib	1,565 (6.3)	–	–	*1,565 (4.0)*
Nivolumab	–	585 (5.4)	879 (24.9)	*1,464 (3.7)*
Gemcitabine	–	407 (3.7)	757 (21.4)	*1,164 (3.0)*
Crizotinib	133 (0.5)	767 (7.1)	–	*901 (2.3)*
Other monotherapy	526 (2.1)	95 (0.9)	373 (10.6)	*994 (2.5)*
Combination therapy, n (%)	**20,864 (84.1)**	**2,167 (20.0)**	**579 (16.4)**	***23,612 (60.3)***
Platinum + pemetrexed	6,970 (28.1)	948 (8.7)	334 (9.4)	*8,252 (21.1)*
Platinum + pemetrexed + bevacizumab	4,483 (18.1)	320 (2.9)	97 (2.7)	*4,901 (12.5)*
Platinum + gemcitabine	3,964 (16.0)	58 (0.5)	–	*4,023 (10.3)*
Platinum + paclitaxel	2,734 (11.0)	841 (7.7)	–	*3,576 (9.1)*
Platinum + vinorelbine	1,798 (7.3)	–	–	*1,798 (4.6)*
Other combination	914 (3.7)	–	149 (4.2)	*1,063 (2.7)*

Values may not sum across rows or columns as a result of generating numbers through independent extrapolations.

Figure 4. Number of Toxicities by Chemotherapy/Targeted Therapy Regimen Type (N=39,188)

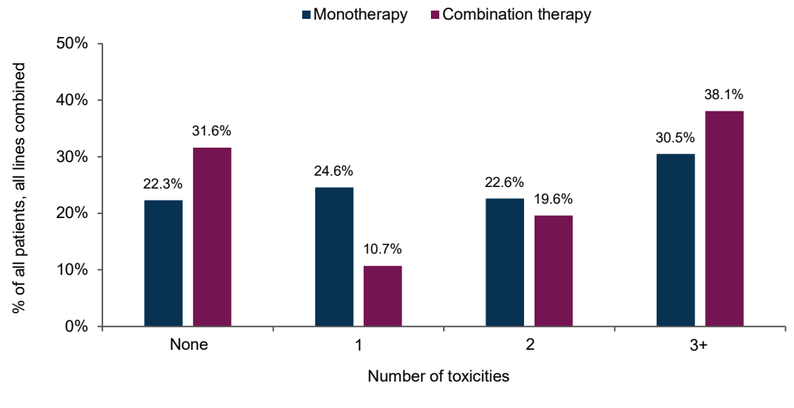
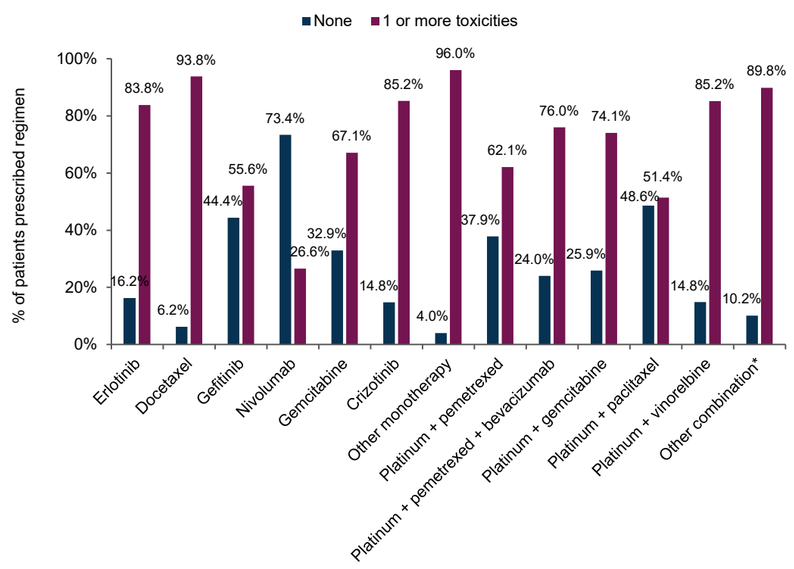
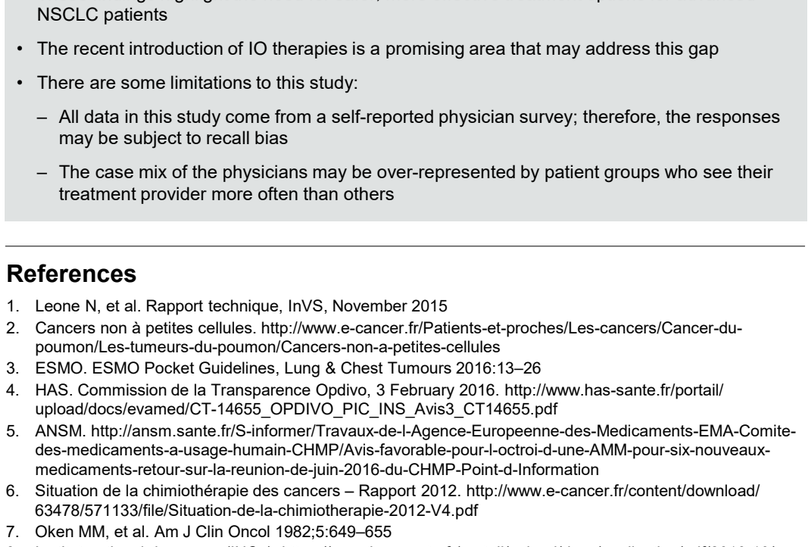


Figure 5. Toxicities Reported by Chemotherapy/Targeted Therapy Regimen (N=39,188)



*100% of patients prescribed paclitaxel + bevacizumab (n=108) reported no toxicities.

Figure 6. Tumour Response by Line of Treatment



Due to ongoing treatment, responses were not available to evaluate tumour response among a subset of patients: 38.9% in 1st line, 20.2% in 2nd line and 20.0% in 3rd+ line.

Conclusions

- Results indicate that chemotherapy/targeted therapy/IO therapy, without surgery or radiation, is the most commonly prescribed treatment approach for patients with advanced NSCLC. Furthermore, treatment cycles are most often 3 weeks in length
- Observed treatment patterns predominately aligned with current treatment guidelines[8]
- Across drug regimens, patients presented with several toxicities and had incomplete tumour responses. Approximately 70% of patients prescribed monotherapy and combination therapy regimens reported at least 1 toxicity
- Nivolumab monotherapy and combination therapy with paclitaxel plus platinum or bevacizumab were the drug regimens with the smallest proportions of patients with toxicities
- The toxicities observed in the present study also aligned with those anticipated according to drug labels and clinical practice guidelines[8]
- These findings highlight the need for safer, more effective treatment options for advanced NSCLC patients
- The recent introduction of IO therapies is a promising area that may address this gap
- There are some limitations to this study:
  - All data in this study come from a self-reported physician survey; therefore, the responses may be subject to recall bias
  - The case mix of the physicians may be over-represented by patient groups who see their treatment provider more often than others

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