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A retrospective cross-sectional study of treatment patterns in small-cell lung cancer (SCLC) in Europe 2018–2021

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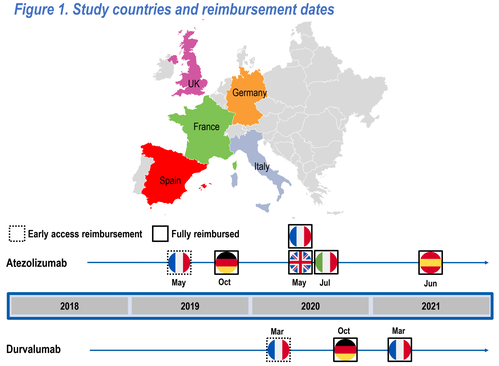
INTRODUCTION

- SCLC is an aggressive malignancy with a poor prognosis that represents ~15% of all lung cancer cases[1,2]
- Development of new effective treatments for SCLC was limited until anti–PD-L1 therapies, atezolizumab and durvalumab, received EU approval for 1st-line (1L) treatment of extensive stage SCLC (ES-SCLC) in 2019[3] and 2020,[4] respectively (reimbursement dates are shown in Figure 1)
- Previous studies of treatment patterns in patients with SCLC in Europe described single countries and were limited to specific settings (e.g. hospital database)[5] or were conducted prior to the approval of the anti–PD-L1 therapies[6]
- Updated information on real-world treatment patterns in Europe is important to understand the therapeutic landscape in the context of new regimen approvals and to identify potential unmet needs for patients with SCLC
- Here we report demographics, clinical characteristics and treatment patterns for patients with ES-SCLC in France, Germany, Spain, Italy and the UK

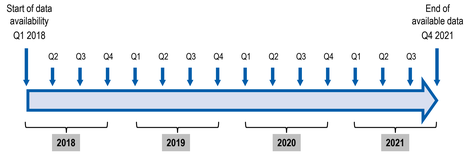
Figure 1. Study countries and reimbursement dates



METHODS

IQVIA Oncology Dynamics dataset

- A repeated quarterly, cross-sectional, retrospective study of drug-treated patients with cancer in Europe and the UK
- A network of physicians from general hospitals, specialist cancer hospitals, academic centres and office-based cancer facilities collect individual-level information from patient medical records into an anonymised survey form



The study included adults ≥18 years of age who were diagnosed with ES-SCLC and received any systemic treatment between Q1 2018 and Q4 2021

- The primary objectives were to describe clinical characteristics, demographics and treatment patterns of patients with ES-SCLC in France, Germany, Italy, Spain and the UK

RESULTS

Baseline characteristics

- Overall, data for 5,832 patients with ES-SCLC were included in the analysis; n=4,898 1L, n=804 2nd-line (2L) and n=130 3rd-line or greater. Baseline demographics and characteristics are shown in Table 1
- Specialist cancer hospitals treated the greatest number of patients (n=2,419, 41.5%), followed by academic cancer hospitals (n=2,041, 34.9%), office-based practitioners (n=849, 14.6%) and general hospitals (n=519, 8.9%), and n=4 (0.1%) unknown (data not shown)

Table 1. Characteristics of ES-SCLC patients (n=5,832)

	EU5 (N=5,832)	France (n=544)	Germany (n=1,518)	Spain (n=771)	Italy (n=1,850)	UK (n=1,149)
Male, n (%)	**3,843 (65.9)**	394 (72.4)	975 (64.2)	561 (72.8)	1,277 (69.0)	636 (55.4)
Median age (Q1, Q3)	**66 (58, 72)**	63 (58, 68)	63 (58, 68)	63 (58, 71.8)	67.7 (58, 72.8)	67 (58, 72.4)
Stage at primary diagnosis, n (%)						
≤II	**50 (0.9)**	11 (2.0)	14 (0.9)	8 (1.0)	10 (0.5)	7 (0.6)
III	**304 (5.2)**	30 (5.5)	66 (4.3)	53 (6.9)	78 (4.2)	77 (6.7)
IV	**5,158 (88.4)**	503 (92.5)	1,438 (94.7)	709 (91.9)	1,443 (78.0)	1,065 (92.7)
Unknown	**320 (5.5)**	-	-	1 (0.1)	319 (17.2)	-
Current* ECOG score, n (%)						
0–1	**4,350 (74.6)**	394 (72.4)	1,054 (69.4)	572 (74.2)	1,567 (84.7)	763 (66.4)
2+	**1,452 (24.9)**	150 (27.6)	464 (30.6)	199 (25.8)	253 (13.7)	386 (33.6)
Unknown	**30 (0.5)**	-	-	-	30 (1.6)	-
Current* smoking status, n (%)†	**(n=4,425)**	(n=374)	(n=1,142)	(n=594)	(n=1,454)	(n=861)
Current	**2,316 (52.3)**	234 (62.6)	649 (56.8)	303 (51.0)	670 (46.1)	460 (53.4)
Former	**1,684 (38.1)**	113 (30.2)	405 (35.5)	226 (38.0)	613 (42.2)	327 (38.0)
Never	**364 (8.2)**	23 (6.1)	78 (6.8)	65 (10.9)	133 (9.1)	65 (7.5)
Unknown	**61 (1.4)**	4 (1.1)	10 (0.9)	0 (0.0)	38 (2.6)	9 (1.0)

*At time of survey; †Smoking status from 2018–2020; data on smoking status were not collected in 2021
ECOG, Eastern Cooperative Oncology Group; ES-SCLC, extensive stage small cell lung cancer

Treatment regimens by year in EU5

- The most common 1L regimens during 2018–2021 were platinum + etoposide combination chemotherapies (91.8%, 85.9%, 62.8%, 42.3% in each year, respectively; Figure 2, left panel)
- By 2021, the overall extent of 1L atezolizumab + platinum chemotherapy combination use was similar to use of the platinum + etoposide combination (41.2% and 42.3%, respectively)
- The most common 2L treatment during 2018–2021 was topotecan with its use decreasing slightly during this period (59.8%, 57.7%, 57.3%, 50.3% in each year, respectively; Figure 2, right panel)
- Anti–PD-(L)1 / anti–CTLA-4 use in 2L treatment increased during 2018–2021 (2.2%–9.2%) despite no approval for SCLC 2L (data not shown)

1L platinum + atezolizumab

- Platinum chemotherapy + atezolizumab 1L treatment has increased across Europe during 2018–2021, and in 2021 was the most common 1L regimen in Germany (54.8%), France (48.5%) and the UK (43.7%) (Figure 3, left panel)

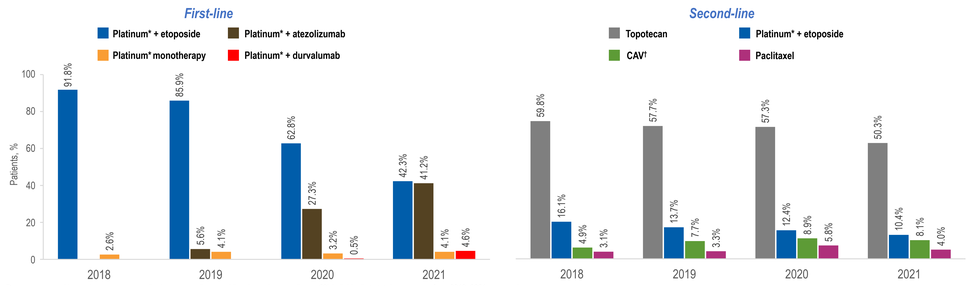
1L platinum + durvalumab

- In 2021, platinum chemotherapy + durvalumab combination 1L use represented 31.8% of all 1L treatment in France, but <3% of all 1L use in the other European countries examined (Germany [2.7%], Spain [2.0%], the UK [0.4%] and Italy [0.3%]; Figure 3, right panel)

2L treatment by platinum status

- Topotecan was the most used 2L treatment irrespective of platinum sensitivity status, with carboplatin / etoposide the second most used treatment in platinum-sensitive patients (Table 2)

Figure 2. Most frequent regimens by line of therapy (EU5) from 2018–2021



Data are arranged by total percentage contribution across all years. All regimen that contribute <2% individually to total percentage from 2018–2021 are not shown
*Platinum-based chemotherapy (includes carboplatin or cisplatin); †Cyclophosphamide + doxorubicin (also known as adriamycin) + vincristine.

Figure 3. Use of platinum chemotherapy + atezolizumab or durvalumab, as a percentage of all 1L treatment from 2018–2021

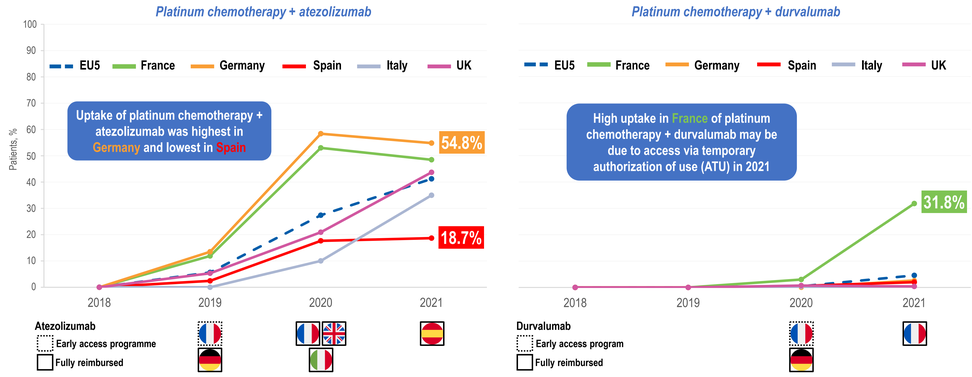


Table 2. Top 3 systemic 2L ES-SCLC regimens by platinum status (EU5)

	2018		2019		2020		2021	
Platinum status	**Regimen**	**n (%)**	**Regimen**	**n (%)**	**Regimen**	**n (%)**	**Regimen**	**n (%)**
Resistant		N=63		N=47		N=44		N=45
	Topotecan	46 (68.3)	Topotecan	31 (65.9)	Topotecan	31 (70.5)	Topotecan	25 (55.5)
	Carboplatin / paclitaxel	4 (6.3)	CAV†	7 (14.9)	CAV†	7 (15.9)	Carboplatin / etoposide	5 (11.1)
	Nivolumab*, paclitaxel*, CAV*†	3 (4.8)	Carboplatin / irinotecan	2 (4.3)	Carboplatin / irinotecan	2 (4.5)	CAV†	4 (8.8)
Sensitive		N=133		N=98		N=108		N=61
	Topotecan	71 (53.4)	Topotecan	53 (54.1)	Topotecan	56 (51.9)	Topotecan	35 (57.4)
	Carboplatin / etoposide	30 (22.6)	Carboplatin / etoposide	17 (17.3)	Carboplatin / etoposide	24 (22.2)	Carboplatin / etoposide	6 (9.8)
	CAV†	8 (6.0)	CAV†	5 (5.1)	CAV†	9 (8.3)	CAV*†, lurbinectedin*	3 (4.9)
Unknown		N=28		N=37		N=73		N=67
	Topotecan	17 (60.7)	Topotecan	21 (56.8)	Topotecan	47 (64.4)	Topotecan	27 (40.3)
	Paclitaxel	2 (7.1)	Paclitaxel	3 (8.1)	Paclitaxel	6 (8.2)	Atezolizumab	8 (11.9)
	Irinotecan	2 (7.1)	CAV*†, gemcitabine / irinotecan*	2 (5.4)	CAV†	4 (5.5)	CAV†	7 (10.4)

Percentages do not add up to 100% as only the top 3 regimens are shown
*Equal number of patients on regimen; †Cyclophosphamide + doxorubicin (also known as adriamycin) + vincristine. ES-SCLC, extensive stage small cell lung cancer

CONCLUSIONS

- Use of platinum-based chemotherapy + **anti–PD-L1 inhibitor therapy** as a **1L treatment** of ES-SCLC in Europe has **increased** during the period from 2018–2021
- **Extent of uptake of platinum-based chemotherapy + anti–PD-L1 inhibitor therapy for 1L treatment varied** between the countries
  - Overall greatest in France, which may be related to an early access programme for durvalumab, and lowest in Spain, which may be related to a delay in reimbursement of atezolizumab
- Topotecan continues to be the most common 2L treatment overall in EU5 regardless of platinum sensitivity

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DISCLOSURES

- Noemi Reguart has received honoraria for speaker / advisory board activities from Amgen, AstraZeneca, Bayer, BMS, Boehringer, Guardant, Janssen, MSD, Novartis, Pfizer, Roche, Sanofi and Takeda
- Stephen Puntis and Katarina Öhrling are employed by and hold shares in Amgen
- Ali Abbasi reports contract work with Amgen
- Karly S Louie is a former employee of and holds stocks in Amgen, and is an employee of and holds stock options / shares in BioMarin Pharmaceutical Inc.
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