Clinical Characteristics, Treatment Patterns, and Outcomes of First-line Brigatinib in Patients with Advanced ALK+ NSCLC: A Multinational Real-World Study

Poster 939

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Background

- Lung cancer is the leading cause of cancer deaths globally, accounting for about 12% (2.5 million new cases) of all new cancer diagnoses and was responsible for an estimated 1.8 million cancer deaths in 2022[1].
- ALK rearrangement (ALK+) is seen in approximately 4%–5% of all NSCLC in Western populations and represents an estimated 40,000 new cases worldwide per year[2].
- The treatment landscape for advanced NSCLC (aNSCLC) has evolved considerably over the past few decades, particularly the advent of targeted therapies for patients with oncogenic driver mutations[3]. The availability of treatments targeting the ALK rearrangement have resulted in significant therapeutic responses and have changed the treatment landscape in patients with ALK+ aNSCLC[4].
- Brigatinib was approved as a first-line (1L) treatment for ALK+ NSCLC patients by the European Commission in April 2020, by the FDA in May 2020[6], and by NICE in November 2020[7].
- In the real-world setting, there is a need to gain a holistic understanding of brigatinib and its place in the current treatment landscape.

Methods

Data source

- Real-world data were drawn from the Adelphi NSCLC Disease-Specific Programme™ [8], a cross-sectional study with retrospective data collection fielded between December 2023 and August 2024 across the United States (US), Germany and the United Kingdom (UK).
- A geographically representative sample of medical/clinical oncologists and pulmonologists responsible for treating patients with ALK+ aNSCLC with 1L brigatinib were recruited, each completing a patient record form, reporting patient demographics, clinical characteristics, treatment patterns and outcomes.
- The same patients for whom the physician provided information on were asked to complete a voluntary patient self-completion survey (PSC), which contained the Patient-Reported Outcomes version of the Common Terminology Criteria for Adverse Events (PRO CTCAE).

PHYSICIAN INCLUSION CRITERIA	▪ Oncologist or Pulmonologist actively involved in the treatment and management of aNSCLC patients. ▪ Sees a minimum of 4 patients with aNSCLC in a month. ▪ Sees at least 1 patient currently receiving/ who has received 1L brigatinib treatment for aNSCLC.
PATIENT INCLUSION CRITERIA	▪ 18 years or older at the time of data collection. ▪ Confirmed ALK+ mutation status. ▪ Receiving/have received 1L brigatinib.

Statistical analysis

- Results were analysed for the overall cohort encompassing the US, Germany and the UK as well as stratified by individual country where appropriate. Descriptive statistics were used for all analyses.

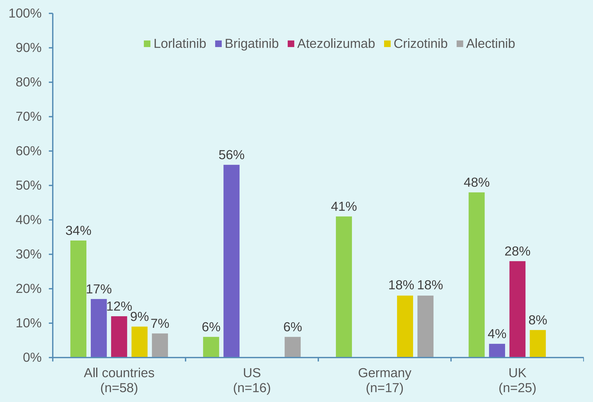
Results

- In total, physicians provided information on 331 patients (US n=107, Germany n=100 and UK n=124) with ALK+ aNSCLC who have been treated with 1L brigatinib either currently or previously; of these patients, 60 responded to the PSC survey.

Table 1: Patient demographics and clinical characteristics

	All countries (n=331)	US (n=107)	Germany (n=100)	UK (n=124)
Age at data collection (mean, SD)	63.7 (9.20)	65.0 (9.78)	65.9 (6.79)	60.8 (9.70)
Male (n,%)	180 (54)	59 (55)	68 (68)	53 (43)
Smoking status at data collection (n,%)				
Currently smoking	17 (5)	4 (4)	6 (6)	7 (6)
Previously smoking	148 (45)	58 (54)	54 (54)	36 (29)
Never smoked	152 (46)	32 (30)	40 (40)	80 (65)
Histology (n,%)				
Adenocarcinoma	287 (87)	79 (74)	85 (85)	123 (99)
Squamous cell carcinoma	33 (10)	22 (21)	11 (11)	0 (0)
Large cell carcinoma	10 (3)	6 (6)	3 (3)	1 (1)
ECOG PS score at initiation of 1L brigatinib treatment (n,%)				
0	83 (25)	29 (27)	12 (12)	42 (34)
1	182 (55)	44 (41)	62 (62)	76 (61)
2	49 (15)	19 (18)	24 (24)	6 (5)
3	12 (4)	10 (9)	2 (2)	0 (0)

Figure 1: 2L treatment following 1L brigatinib



Patient demographics

- Overall, the mean age of patients who had received 1L brigatinib was 63.7 years. In the US and Germany, more than half of patients were male, whereas in the UK, 43% were male. (**Table 1**).
- There was little difference between the number of patients that had previously smoked or had never smoked (45% and 46% respectively) in the US and Germany. In the UK, there were more non-smokers than previous smokers (65% vs 29%). (**Table 1**).
- Across all countries, most tumours were adenocarcinomas (87%), with squamous cell carcinoma the next most common histology (10%) (**Table 1**).
- Over a quarter of patients in the US had a tumour that was either a squamous cell or large cell carcinoma (**Table 1**).
- At initiation of 1L brigatinib treatment, 80% of patients had an ECOG performance score of 0-1 with 19% having a performance score of 2+. In the UK, 90% were 0-1 and 5% were 2+ (**Table 1**).

Second line (2L) treatment patterns post 1L brigatinib

- Of the patients who completed 1L brigatinib treatment, 58 patients went on to receive 2L treatment, with lorlatinib being the most commonly prescribed 2L treatment (34%). (**Figure 1**).
- In all countries, 17% of patients went on to receive brigatinib as their 2L treatment. In the US, over half (56%) of patients who progressed to 2L treatment received brigatinib (**Figure 1**).
  - *2L brigatinib is defined as a repeat of the previous brigatinib regimen at least 90 days after completion of the original course, due to the patient's non-response or relapse.*
- Atezolizumab use at 2L was observed in the UK and was the second most common 2L treatment (28%) after lorlatinib (48%) (**Figure 1**).
- In Germany, crizotinib and alectinib were the joint second most common treatment at 2L (18%), after lorlatinib (41%) (**Figure 1**).

Table 2: Sites of 1L radiotherapy

	All countries (n=64)	US (n=27)	Germany (n=30)	UK (n=7)
Sites (n, %)				
Lymph nodes	26 (41)	9 (33)	17 (57)	-
Bone	17 (27)	10 (37)	4 (13)	3 (43)
Contralateral lung	15 (23)	5 (19)	10 (33)	-
Liver	13 (20)	5 (19)	7 (23)	1 (14)
Brain	9 (14)	4 (15)	2 (7)	3 (43)
Pleura	9 (14)	6 (22)	3 (10)	-
Adrenal glands	4 (6)	4 (15)	-	-
CNS	3 (5)	1 (4)	2 (7)	-
Visceral/Soft tissue	2 (3)	1 (4)	1 (3)	-

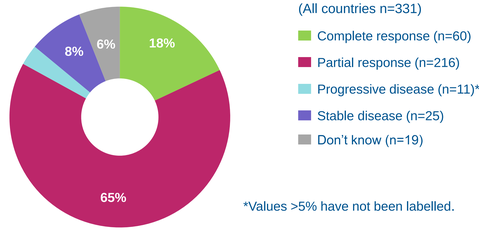
1L Radiotherapy and sites of radiotherapy

- Overall,19% of patients received radiotherapy as concurrent treatment with 1L Brigatinib. In the UK, only 6% of patients received radiotherapy concurrently.
- For patients who received radiotherapy concurrently to 1L brigatinib treatment the most common sites were lymph nodes (41%), bone (27%) and contralateral lung (23%). Lymph nodes were the most common site in Germany (57%) whilst in the US it was bone (37%) (**Table 2**).

Dosage of 1L brigatinib

- In terms of the dosage profile for 1L brigatinib treatment, across all countries 90% of patients received the optimal dose of 180 mg/d.
  - Of this 90%, 71% received 90mg for 7 days and then increased to 180mg, whilst the remaining 19% were given 180mg from treatment initiation.
- Throughout 1L brigatinib treatment nearly all patients completed treatment without having a change in dose (92%) indicating dose tolerability. This was further supported by a lack of dose interruptions, with most patients completing treatment without any interruption (87%).

Figure 2 – Patient response to 1L brigatinib treatment



*Values >5% have not been labelled.

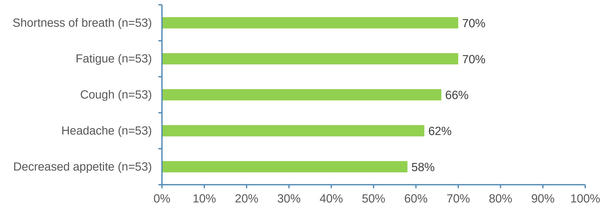
Best response to 1L brigatinib treatment

- The real-world overall response rate for patients on 1L brigatinib was 83%, with 65% of patients experiencing a partial response and 18% a complete response (**Figure 2**).
- Including the 8% of patients who experienced stable disease following 1L brigatinib the disease control rate was 91% (**Figure 2**).

rwTTD and rwTTP of 1L brigatinib treatment

- Across all countries, the median (95% CI) real-world time to discontinuation and real-world time to progression of 1L brigatinib was 24.2 months (23.1-29.5) and 27.2 months (24.1-44.0) respectively.

Figure 3 – Top 5 most common adverse events as reported by the patient (n, %)



Patient reported PRO-CTCAE

- Among patients who provided a patient self-completion form and whose 1L brigatinib treatment was still ongoing at the time of data collection (n=53), the most common adverse events on the PRO CTCAE were shortness of breath (70%), fatigue (70%) and a cough (66%) **(Figure 3).**
- Gastrointestinal toxicities were also common (64%), With the most common of these toxicities (n=34) being nausea (77%) followed by vomiting and diarrhea (both 56%).

Conclusions

- Results from this real-world multi-national study were in line with the data captured in the phase 3 ALTA-1L trial and mirrored previous trials such as NCT01449461 and NCT02094573.
- The majority of patients with ALK+ aNSCLC who received 1L brigatinib did not require a treatment interruption whilst receiving 1L brigatinib treatment, highlighting brigatinib's tolerability.
- Brigatinib's effectiveness was also supported by the high response rate observed in this study with the majority of patient's having a partial or complete response to their 1L brigatinib treatment.
- Future research examining the drivers of choosing brigatinib as a 1L treatment will provide further understanding into its place in the aNSCLC treatment landscape.

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