REAL-LIFE USE OF G-CSF IN PATIENTS WITH NON SMALL CELL LUNG CANCER (NSCLC)

SECONDARY DATA ANALYSIS FROM THE FRENCH NATIONAL COHORT ESCAP-2020 (ancillary study of KBP-2020)

D. Debieuvre[1], F. Scotté[2,3], S. Couraud[4], K. Menia[5], L. Falchero[6]

1. Pneumology, GHRMSA, Mulhouse, France ; 2. Interdisciplinary Patient Pathway Division, Gustave Roussy, Villejuif, France ; 3. Multinational Association of Supportive Care in Cancer (MASCC), Aurora, Canada ; 4. Respiratory diseases and Thoracic Oncology Department, Lyon Sud Hospital, Cancer Institute of Hospices Civils de Lyon France ; 5. Medical Affairs, Chugai Pharma France, Puteaux, France ; 6. Pneumology, L'Hôpital Nord-Ouest - Villefranche-Sur-Saône, France.

MASCC/AFSOS/ISOO 2025
ANNUAL MEETING
Abstract 3324

BACKGROUND

Lung cancer is the leading global cause of cancer incidence and mortality. It's also the most common cancer type associated with febrile neutropenia (FN), a severe complication of chemotherapy associated with increased morbidity and mortality, that occurs in 10-40% of lung cancer patients undergoing chemotherapy[1,2,3,4,5].

The aim of the current study is to describe the use of G-CSF, patients' characteristics in real life setting and their impact on survival in patients with Non Small Cell Lung Cancer (NSCLC).

METHODS

We performed a **secondary data analysis focused on NSCLC from ESCAP-2020 cohort (ancillary study of KBP-2020)**, real-life nationwide, prospective and multicenter French cohort studies conducted in patients diagnosed with primary lung cancer (LC). FN risk was assessed according to EORTC guidelines *(Table1)*.

- **KBP-2020 study is a real world prospective cohort** that included all patients diagnosed with LC (SCLC and NSCLC) in 2020, in a non-academic public hospital in France (n=8,999)[6].
- **ESCAP-2020 is an on-going ancillary study from the KBP-2020 study**, with a follow-up of 5 years (n=7,219), which allows the documentation of therapeutic strategies and characteristics of patients at risk of FN.
- G-CSF data were collected in the case report form (CRF); the definition of FN risk was based on EORTC Guidelines [5], French AURA Guidelines on LC [7,8] criteria according to chemotherapy regimen received [4] and data collected in CRF *(Table 1)*.

In accordance with the study steering committee, only centers for which the rate of G-CSF prescribed was ≥ to 10% of the total number of patients included with SCLC have been considered for this analysis, totalling 39 centres nationally (n=4,135).

Table 1: Definition of Febrile Neutropenia (FN) at-risk population in NSCLC (EORTC Guidelines)

R20 – High FN risk Chemotherapy regimens with rates of FN > 20%	R10 – Intermediate FN risk* Chemotherapy regimens with rates of FN between 10 and 20%
• Cisplatin + Etoposide • Carboplatin + Docetaxel	• Cisplatin + Docetaxel • Cisplatin + Paclitaxel • Cisplatin + Vinorelbine * For chemotherapy regimens associated with an intermediate (10-20%) risk of FN, consider additional risk factors: • Age > 65 years • Advanced stage disease (III and IV), • History of prior FN • Poor nutritional status and/or Performance status (PS) 3 and 4 • Female gender, Hemoglobin < 12 g/dl, • Liver, renal or cardiovascular disease

RESULTS

A **total of 3,287 patients with NSCLC** were included in our analysis, 707 patients (21.5%) received G-CSF (G-CSF+) and 2580 (78.5%) do not (G-CSF-). In **G-CSF+ group, patients were younger** (mean 65.2 vs 68.5 years, p<0.0001), **in better general condition** (PS 0-1 in 89.0% vs 74.7%, p<0.0001), with less percentages of never-smokers, (7.6% vs 14.4%, p <0.0001), with more percentages of patients in metastatic stage (65.3% vs 56.3%, p<0.0001). *(Table 2)*.

Among the **NSCLC patients 218 (6.6%) were considered at high-risk of FN, 84 patients (38.5%) received G-CSF prophylaxis**. By contrast from the **3069 patients who were not considered at high-risk of FN, 619 patients (20.2%) received a G-CSF treatment (G-CSF+)**. *(Table 3)*.

The 3 years Overall Survival (OS) was 60.2 % [50.5 - 71.8] in patients with G-CSF+ vs 60.3 [52.6 - 69.2] in G-CSF- (figure 1), median survival was 39.7 [36.8 - NA] vs 43.4 [37.1 - NA] *(Table 4)*.
In multivariate analysis age doesn't appear to be a risk factor impacting survival.

Table 2: NSCLC patients characteristics according to G-CSF use

NSCLC N=3,287	G-CSF+ N=707 (21.5%)	G-CSF- N=2,580 (78.5%)	p
Mean age (years)	65.2	68.5	p<0.0001
PS 0-1	89.0%	74.7%	p<0.0001
Never smokers	7.6%	14.4%	p<0.0001
Metastatic stages	65.3%	56.3%	p<0.0001

Table 3: NSCLC patients characteristics according to FN risk and G-CSF prophylaxis

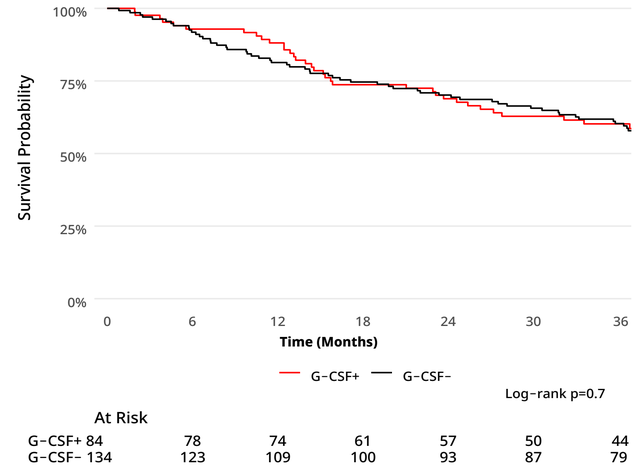
NSCLC N=3,287*	High-risk of FN>20% N=218 (6.6 %)	Not high-risk of FN <20% N=3,069 (93.4 %)	p
G-CSF prophylaxis (G-CSF+)	**84 (38.5 %)**	619 (20.2 %)	
No G-CSF prophylaxis (G-CSF-)	**134 (61.5%)**	2,450(79.8%)	

*4 missing data on FN risk

Table 4: Median survival among NSCLC patients with high-risk of FN

NSCLC	Medians of survival (in months) [95% CI]
G-CSF+ N=84	39.7 [36.8 - NA]
G-CSF- N=134	43.4 [37.1 - NA]

Figure 1 – Overall survival in NSCLC patients at risk of FN according to G-CSF prophylaxis



CONCLUSION

G-CSF prophylaxis is recommended when the overall risk of febrile neutropenia (FN) due to regimen and individual patient factors is ≥20%. In **this real-life cohort, FN prophylaxis with G-CSF was largely used in NSCLC patients** considered **with no high-risk of FN while less used in patients with high-risk of FN** in regards of current international guidelines (EORTC). **G-CSF use was more considered for young patients with good general condition. Better awareness of FN risk and its management is necessary and should be considered and extended to all patients at FN high risk regardless of age. Further analysis will be provided to better explain the study results on G-CSF use in the prophylaxis of NSCLC patients in real life.**

The data used for the analyzes in this poster were provided from KBP-CPHG database. The data sources are the exclusive property of the CPHG. However, the poster results and analyzes are therefore the sole responsibility of the authors.

1.Zhou J, et al. Cancer epidemiology. 2024; 2.Aagard T and al. Cancer Medicine. 2020; 3.Klastersky J et al. Ann Oncol 2016; 4.Lanoix et al. BMC Infectious Diseases 2011; 5.Aapro MS, et al. Eur J Cancer. 2011 Jan; 6.Debieuvre D, et al. Lancet Reg Health Eur. 2022 Aug; 7.Falchero L, et al. Cancers bronchiques à petites cellules. Référentiels Auvergne Rhône-Alpes en oncologie thoracique 2023; 8. Couraud S, et al. Cancer bronchique non à petites cellules.Référentiels Auvergne Rhône-Alpes en oncologie thoracique 2023.

CONFLIT OF INTEREST
The authors declare that they have no relation of interest with this abstract. K. Menia is Chugai Pharma France employee. Study sponsored by Chugai Pharma France.

ACKNOWLEDGEMENT
The authors thank the « study group KBP-2020-CPHG » and all investigators of study Group KBP-2020-CPHG.

CHUGAI EUROPE ONCOLOGY

CHUGAI