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Overall survival in metastatic NSCLC in HMO from Colombia: a non-interventional study.

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BACKGROUND

In Colombia, according to Cuenta de Alto Costo (High Cost Account), lung cancer accounted for 1,261 incident cases and 1,702 deaths, being the seventh most common cancer among the 11 types of prioritized cancers[1]. NSCLC comprises about 85% of all lung cancers[2], from which only 15% of all lung cancer patients are alive 5 years or longer after diagnosis[3].

The overall survival was lower with chemotherapy (14.5 months 95% IC 13.6 – 15.5) than targeted therapies (23.0 months 95% IC 15.9 – 38.2) or immunotherapy (25.6 months 95% IC 17.2 – 31.3)[4]. From 2018 to nowadays, different treatments have approved which have changed the treatment landscape of patients with advanced NSCLC, however, the clinical benefits in the real world and treatment pathways considering the patient and disease profile have been limited studied.

OBJECTIVE

- This study seeks to measure the overall survival in Colombian patients with metastatic non-small cell lung cancer in one Health Management Organization (HMO) between 2018-2022

METHODS

- An observational, data secondary data collection without sites, retrospective dynamic cohort study was conducted in order to identify patients with lung cancer in the Colombian population under clinical practice in an EPS, the ICD 10 was used.
- The data from patients with diagnosis of metastatic non-small cells lung cancer (NSCLC) between 2018 to 2022 was collected. Patients were identified, and information was collected by reviewing databases using the C34 code and all its ICD 10 subsets for Malignant neoplasm of bronchus and lung combined with advanced/metastatic code C79.9 or confirmed by medical record. Subsequently, medical records were reviewed to confirm if they correspond to advanced/metastatic Non Small Cell Lung Cancer.
- The index date was defined as the time when the patient is diagnosed with NSCLC. The data associated to demographic and clinical characteristics, treatments, death, and discontinuation were abstracted from electronic healthcare records.
- The treatments evaluated were focused on chemotherapy, immunotherapy, targeted therapy. Other treatments were considered non-curative.
- The follow up period of each patient starts since the beginning of first line treatment and extends until death, patient loss, 5 year follow up, or end of the study. The baseline was 1 year before the index date, including it. This period was used to gather reference information for covariates.
- Kaplan-Meier survival analysis and Cox proportional hazards model were conducted.

RESULTS

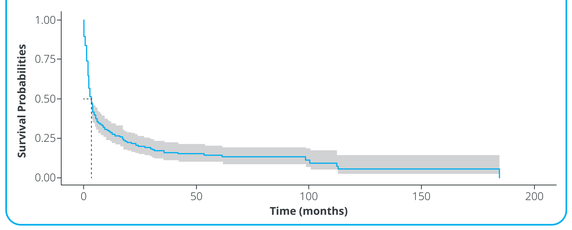
- Five hundred eighty-nine patients with metastatic NSCLC were included, of which 463 were adenocarcinoma, unknown (227), 72 squamous, and 43 large cells (Table 1).
- Ninety-six patients were identified with epidermal growth factor receptor (EGFR), 32 with anaplastic lymphoma kinase (ALK), and 21 with ROS-1, not all patients were evaluated biomarkers (approximately 30%).
- Three hundred eighty-two received treatments according to histological and biomarker characteristics, the other group of patients were treated with a non-curative treatment. The OS of this group was 3.3 (IQR 2.7 – 4.3) months (Figure 1).
- The median of overall survival of patients with adenocarcinoma EGFR, ALK, ROS-1 were 26.4 (IQR 19.8-NA), 45.8 (IQR 30.7-NA), and 45.8 months (IQR 28.8-NA), respectively (Figure 2-4).
- Clinical variables such as being active smoker (HR 1.5 95%CI 25 1.2-1.9), ECOG greater than 1 (ECOG 2 HR 1.6 95%CI 1.3-2.1; ECOG 3 HR 1.7 95%CI 1.2-2.3; ECOG 4 HR 1.8 95%CI 1.1-2.9), and metastasis in nervous system (HR 1.3 95%CI 25 1.0-1.6) decreased the OS in adenocarcinoma NSCLC patients (Table 2).
- Twenty-four patients with ALK positive who were treated with targeted therapy as first line had best overall survival (45.8 months confidence interval 95% 30.7-NA).
- In squamous and large cell, it was 8.7 (IQR 5.4 – 13.9) (Figure 5) and 11.8 months (95% IQR 6.0-NA).

RESULTS (cont)

Table 1. Clinical and demographic characteristics of NSCLC patients

Clinical Charateristics	Absolute frequency
Age	
Mean	66.90 (11.3)
Sex	
Female	309 (52.5)
Race	
Mestizo	320 (40.0)
White	94 (16.0)
Black	8 (1.4)
No information	165 (18.0)
other	2 (0.3)
Body mass index	
Mean	24.00 (6.4)
Smoking status	
Yes	194 (32.1)
Initial disease stage at diagnosis	
IIB	10 (1.7)
IIIA	11 (1.9)
IIIB	44 (7.5)
IV	524 (89.0)
Site Metastasis	
Brain	257 (25.6)
Respiratory system	221 (22.0)
Bone	171 (17.0)
Hepatic	98 (9.8)
Mediastinal	56 (5.6)
Kidney	28 (2.8)
Nervous system	26 (2.6)
Adrenal glands	16 (1.6)
other locations	132 (13.14)
Number of metastatic locations	
1	336 (57.0)
2	190 (32.3)
3	50 (8.5)
≥4	13 (2.2)
ECOG functional level (metastatics)	
1	115 (19.5)
2	298 (50.6)
3	138 (23.4)
4	38 (6.5)
Charlson scores	
Mean	8.11 (2.3)
Histological	
Adenocarcinoma	462 (78%)
Squamous	72 (12%)
Large cell	43 (7%)
Other	12 (2%)

Figure 1. Survival curve of NSCLC patients with non-curative treatment



RESULTS (cont)

Figure 2. Survival curve of ALK adenocarcinoma NSCLC patients

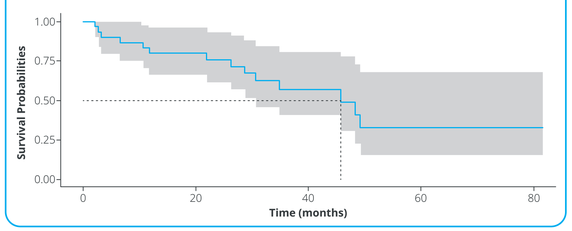


Figure 3. Survival curve of EGFR adenocarcinoma NSCLC patients

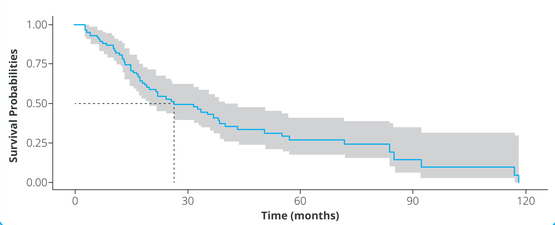


Figure 4. Survival curve of ROS-1 adenocarcinoma NSCLC patients

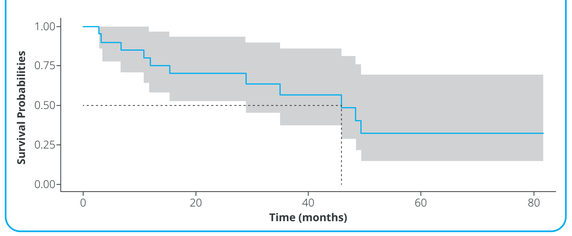


Figure 5. Survival curve of squemous NSCLC patients

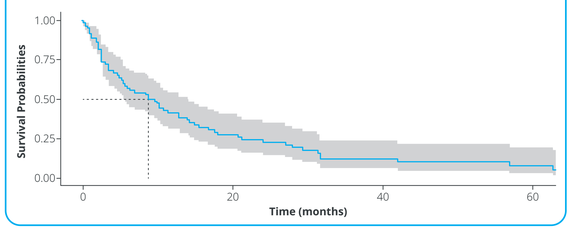


Table 2. Overall survival of adenocarnoma NSCLC patients by clinical and demographic variables

Adenocarcinoma general /NSCLC n= 462					
Overall survival	**Number of patients**	**Number of events**	**Mean (months)**	**Median (months)**	**95% CI**
Age group year					
< 60	141	106	30,8	16,1	13,1-22,0
≥ 60	321	242	33,6	13,5	11,0-17.7

RESULTS (cont)

Adenocarcinoma general /NSCLC n= 462					
Overall survival	**Number of patients**	**Number of events**	**Mean (months)**	**Median (months)**	**95% CI**
Sex					
Female	253	178	38,5	17,7	14,70-23,00
Male	209	170	27,9	12,3	9,27-15,3
Year of diagnosis					
2015-2018	168	148	37,2	18,1	13.8-28.3
2019-2022	293	199	27	12,5	10.2-17.2
ECOG at diagnosis					
1	137	88	48,6	23,40	14,83-37,00
2	189	148	26,9	14,20	10,33-18,6
3	108	89	26,9	11,87	9,70-19,8
4	27	22	26,1	7,43	4,60-22,0
Karnosky					
<80	324	259	27,3	12,6	10,3-16,7
80-100	137	88	48,2	22,7	14,8-37,0
Metastasis site					
Nervous system	181	149	27,5	12,5	10,5-17,3
Bone	126	101	28,5	13,8	12,3-21,6
Liver	62	47	44,5	6,52	2,90-17,3
Adrenal gland	18	16	22,6	5,62	2,17-NA
Respiratory system	76	53	40,3	17,3	12,6-38,3
Mediastinal	53	45	26,6	10,3	6,03-28,3
Other locations	71	54	27,7	13,3	8,47-19,1
Number of metastatic location					
1-2	429	320	33,5	15,20	12,70-18,7
3	30	25	29,8	15,20	6,10-NA
>4	3	3	12,6	2,90	2,17- NA
Previous radiotherapy					
Yes	150	120	30,5	14,9	12,3-20,5
No	312	228	34,8	14,7	12,5-18,6
Previous treatment					
QT	207	156	33,6	18,7	14.9-24.4
Inmunotherapy	25	16	41,9	20	11.0-NA
Targeted therapy	73	42	41,1	34,9	24,2-45,8
Stage at diagnosis					
IIA	6	4	64,5	36,82	6,03-NA
IIB	10	5	94,6	8,63	3,57-NA
IIIA	8	6	36,7	8,12	3,10-NA
IIIB	25	18	59,3	21,67	13,47- NA
IV	413	315	30,3	14,70	12,43-17,9

CONCLUSION

There overall survival of patients with metastatic NSCLC in Colombia can be different depending on histological and biomarker characteristics of tumor and type of treatment used. ALK+ patients and those with EGFR receiving targeted therapies for 1L treatment had the best OS.

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