372 P - The prognostic value of liver metastases and how affects the applicability of the lung-molGPA in Non-Small Cell Lung Cancer patients with brain metastases

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Background

Brain metastases (BM) from lung cancer are a very common clinical scenario in which patients affected tend to have a poor prognosis and because of this, they are often excluded from clinical trials. To facilitate clinical decision making several prognostic indices have been created, the diagnostic-specific graded prognostic assessment (DS-GPA), then updated to include the molecular alteration data (Lung-molGPA)[1], is one of the most used in clinical practice. In this index, factors like age, Karnofsky Performance Status (KPS), extracranial metastases (ECM), number of BM and positive gene alterations (EGFR or ALK) are used to calculate the scores groups. Even though there is growing evidence that liver metastases in comparison with other metastatic sites (e.g., bone, brain, lung, and others) have the poorest trend in survival[2,3], this is not considered in any of the prognostic scores for BM. This study aims to correlate the prognostic value of liver metastases using the updated DS-GPA including the molecular alteration data (Lung-molGPA) in a cohort of patients with BM from non-small cell lung cancer (NSCLC).

Methods

From a single center retrospective database of patients treated for NSCLC between January 2011 and December 2016, a total of 134 patients with newly diagnosed BM were selected for analysis. All patients had complete medical record data and follow-up information. Analyses of different prognostic factors and their outcomes were evaluated. Consistent with the original index all the factors were grouped at cut-off value as in the Lung-molGPA[1]. We examined the effect of liver metastases in the survival of our cohort of patient with BM. The patients were stratified according to Lung-molGPA and by the presence or absence of liver metastases. All the prognostic factors analyzed were weighted for significance by hazard ratios (HR). Statistical analyses were performed using IBM SPSS Statistics 26.

Results

Population Characteristics	N°	%
Gender		
Male	93	69.4
Female	41	30.6
Age		
≥70	36	26.9
<70	98	73.1
KPS		
<70	9	6.8
80	49	36.5
90 - 100	76	56.7
Histology Subtype		
Adenocarcinoma	93	69.4
Squamous Cell Carcinoma	32	23.9
NOS	9	6.7
ECM		
Present	91	67.9
Absent	43	32.1
BM, N°		
1 to 4	89	66.4
>4	45	33.6
Gene Status		
Positive	25	18.7
Unknown	109	81.3
Hepatic Metastases		
Present	28	20.9
Absent	106	79.1
BM, Free Interval		
<6 months	71	52.9
≥6months	63	47.1

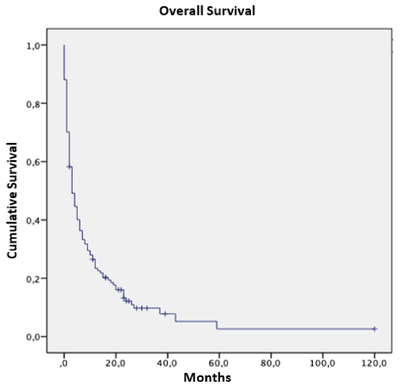


Figure 1. Overall survival of the entire cohort. From the time of initial diagnosis of BM, the patients had a median survival of 11.8 months (95% CI: 7.1-16.4)

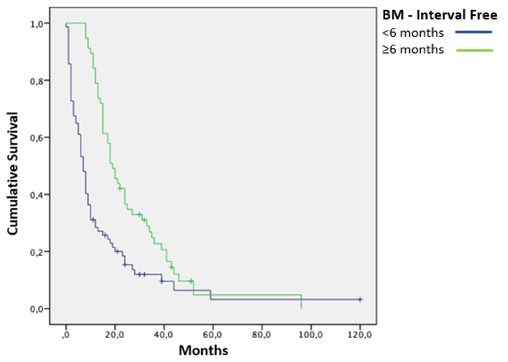


Figure 2. Brain metastases – Free interval. The interval from the time of diagnosis to development of BM had prognostic significance when the interval of appearance of BM was ≥ 6 months (HR) 0.46; P<0.00001).

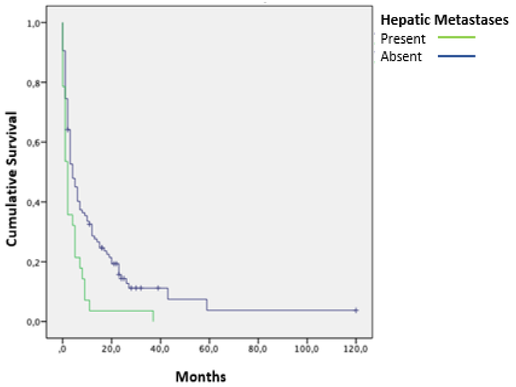
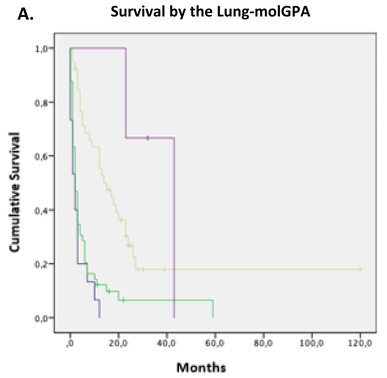


Figure 3. Hepatic metastases effect on survival. Patients with brain and liver metastases had a median OS of 4.1 months vs 14.3 months in the same group of patients but without liver metastases (HR 1.92; P>0.001).



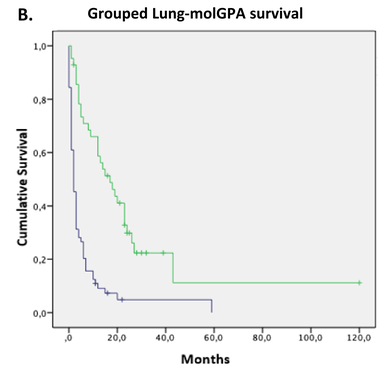
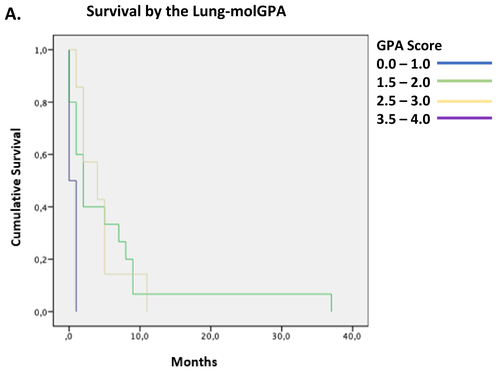


Figure 4. Data stratified by absence of hepatic metastases.
A. OS by Lung-molGPA and no hepatic metastases. **B.** We grouped the data in two groups (GPA>≤2) due to the low number of patients in each GPA classes after stratifying by hepatic metastases (P<0.00001).



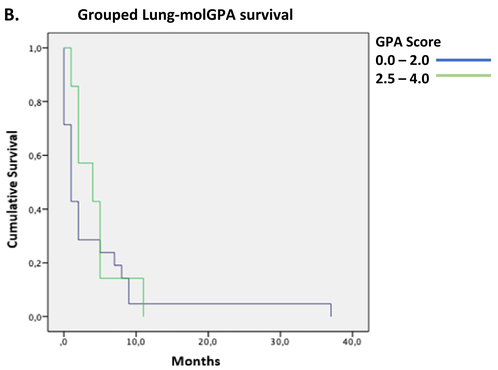


Figure 5. Data stratified by presence of hepatic metastases.
A. OS by Lung-molGPA and no hepatic metastases. **B.** We grouped the data in two groups (GPA>≤2) due to the low number of patients in each GPA classes after stratifying by hepatic metastases (P=0.532).

Conclusions

The good prediction power in the outcomes of NSCLC patients with BM of the different prognostic indexes, such as the Lung-molGPA, are useful tools for prognosis stratification in real-life practice. Nevertheless, other relevant prognostic factors are not considered when running these models, as the individual presence of liver metastases or the free interval of BM that should be considered for an accurate stratification, to individualize treatment options, and to better select patients for clinical trials.

References:
1. Sperduto PW, Yang TJ, Beal K, et al. Estimating Survival in Patients With Lung Cancer and Brain Metastases: An Update of the Graded Prognostic Assessment for Lung Cancer Using Molecular Markers (Lung-molGPA). JAMA Oncol. 2017;3(6):827-831. doi:10.1001/jamaoncol.2016.3834
2. Li J, Zhu H, Sun L, Xu W, Wang X. Prognostic value of site-specific metastases in lung cancer: A population based study. J Cancer. 2019;10(14):3079-3086. Published 2019 Jun 2. doi:10.7150/jca.30463
3. Yang J, Zhang Y, Sun X, et al. The prognostic value of multiorgan metastases in patients with non-small cell lung cancer and its variants: a SEER-based study. J Cancer Res Clin Oncol. 2018;144(9):1835-1842. doi:10.1007/s00432-018-2702-9

Conflict of interest: J. R Veas Rodriguez has no conflicts of interest to declare.

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