

ASSOCIATION OF ANTIBIOTICS AND PROTON PUMP INHIBITORS ON CLINICAL ACTIVITY OF FIRST LINE PEMBROLIZUMAB FOR NON-SMALL CELL LUNG CANCER: 2 YEARS OF REAL WORLD DATA

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BACKGROUND

- **Gut microbiome** plays a dominant role in modulating therapeutic **efficacy** of **immune checkpoint inhibitors (ICIs)**.
- The use of **proton pump inhibitors (PPI)** and **antibiotics (ATB)** can induce **dysbacteriosis**, which may attenuate the clinical outcomes of ICIs, as shown in previous publications.

OBJECTIVE

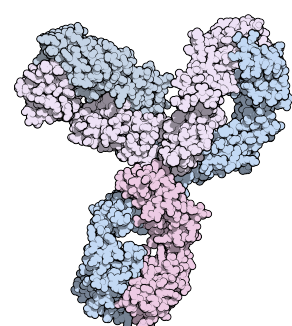
To investigate the **predictive role** of PPI and ATB on **pembrolizumab** treatment in patients with **metastatic non-small cell lung cancer (NSCLC)** real world setting in progression free survival (**PFS**) and overall survival (**OS**).

METHODS

July 2017 → January 2020



Metastatic NSCLC patients



Pembrolizumab

- **Retrospective study.**
- Demographic data, PD-L1 expression, responses and survival rates, and other baseline variables were examined.
- **Clinical outcomes** were compared according to ATB or PPI co-administration.
- **Statistical analysis:** Kaplan-Meier curves were used for statistical analysis and Log-rank test was used as a hypothesis contrast test. Hazard Ratio (HR) and 95% CI were estimated using the Cox regression model. SPSS-Statistics® V.26.

Proton pump inhibitors



Antibiotics



30 days before/after pembrolizumab started

RESULTS

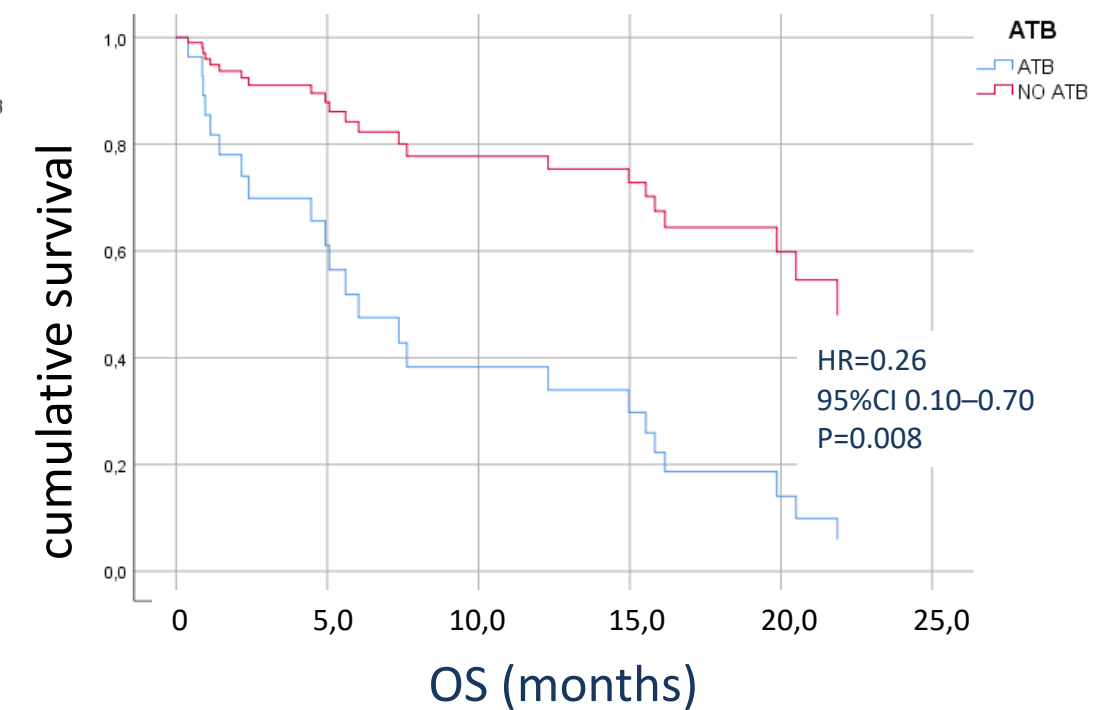
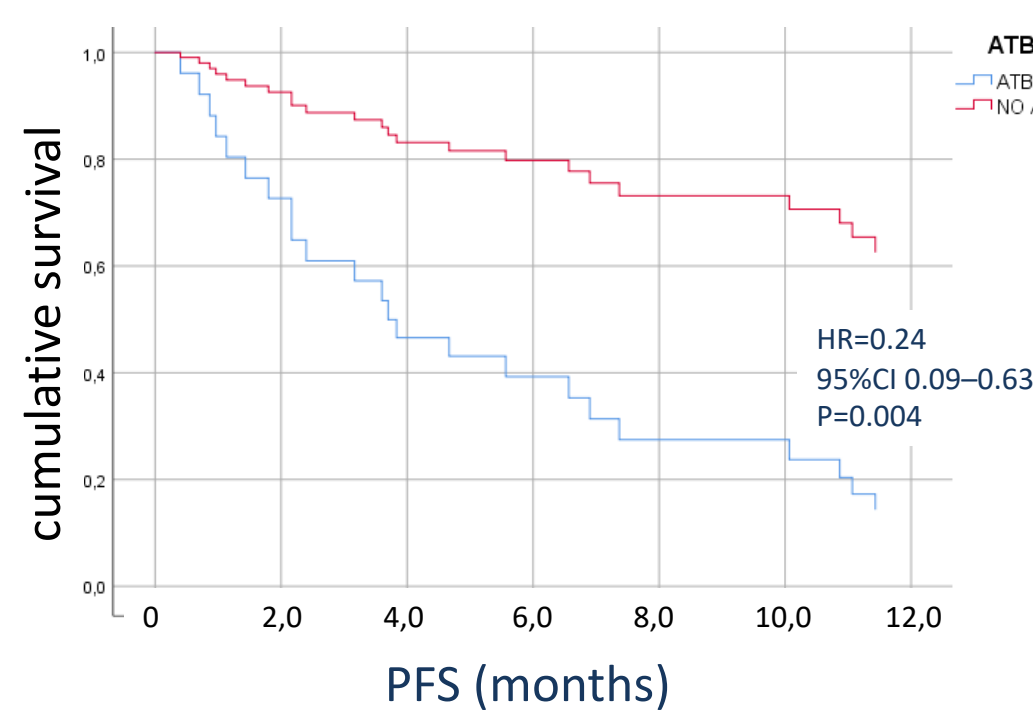
- **49 patients**, 75.5% men
- Mean age: 66.3 ± 8.2 years
- 34.7% used **ATB**
- 53.1% used **PPI**

UNIVARIATE ANALYSIS

ATB	HR	95 % CI	P	PFS (months)
PFS	0,46	0,20 - 1,06	0,068	12,1 vs. 18,5 ATB no ATB
OS	0,56	0,26 - 1,22	0,144	

PPI	HR	95 % CI	P	OS (months)
PFS	0,98	0,43 - 2,21	0,953	11,7 vs. 17,9 PPI no PPI
OS	0,40	0,17 - 0,93	0,033	

MULTIVARIATE ANALYSIS



- **Multivariate analysis** in all patients considering ATB, PPI, age and PD-L1 expression revealed that ATB were significantly associated with **shorter PFS** and **shorter OS**.
- The use of **PPI** showed **no significant differences** in multivariate analysis.

CONCLUSION

- Data suggest that **ATB** use in patients with metastatic NSCLC may be associated with **poor outcomes in PFS** and may influence the efficacy of **pembrolizumab**. The impact of **PPI** showed better results in **OS** for the group that did not receive them.
- **More studies** with a **larger sample** of patients would be necessary to confirm these results, since our limited sample size could compromise the statistical power.



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