PEMBROLIZUMAB IN NON-SMALL CELL LUNG CANCER: ANALYSIS IN REAL LIFE OF TOXICITY AND EFFECTIVENESS

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BACKGROUND AND IMPORTANCE

Many studies support pembrolizumab (a humanized monoclonal antibody directed towards PD-1, Programmed cell death protein-1) in the first-line treatment of advanced No Small Cell Lung Cancer (NSCLC) without EGFR/ALK alterations and PDL-1 TPS (Tumor Proportion score) ≥50%.

AIM AND OBJECTIVES

This observational study aims to report the clinical outcome in terms of overall survival (OS) as well as in stratified analysis among subgroups of patients.

MATERIAL AND METHODS

Between 01/07/2017 and 28/02/2020, 98 NSCLC patients eligible to be treated with pembrolizumab (200 mg q3w fixed dose) were enrolled. All patients were observed from the first treatment administration until July 2020. Clinical data, as expression of PD-L1, Performance Status (ECOG-PS), treatment duration, toxicity (CTCAE v.5.0) and outcome were collected from the local electronic medical record. OS, defined as the time from start of therapy to death or last follow-up, was firstly evaluated. Survival analysis was evaluated grouping patients by ECOG, weight, overall toxicity, cutaneous toxicity using the Kaplan-Meier and log-rank test (with R software v 4.0.3); p-values<0.05 were considered statistically significant.

RESULTS

This investigation showed preliminary results in the 98 patients (of which 64.3% were male). The mean age was 71.78 years (SD 8.8). The ECOG-PS was 0 or 1 in 90.8% of cases while PDL-1 expression was ≥ 75% on 49% of patients (Table1). Only 29.6% of patients had a PDL-1 expression ≥ 90%. The median duration of treatment was 7 cycles. The median follow-up was 14.6 months while 51% of patients was still alive at the end of the observation. Besides the median OS was 13.3 (95% CI: 10.5-31.4) months as shown in Figure 1. The analysis revealed that the OS was not influenced by sex and PDL-1 (not reported), while it was significantly associated to ECOG-PS (p-value<0.001) as showed in Fig 2.
Adverse Events (AE) occurred in 75.5% of the patients (29.6% cutaneous, 24.5% gastrointestinal, and 18.4% endocrinological). Patients with toxicity showed a significantly higher median OS (29.6 months, 95% CI: 12.2-NA) compared to those without significant toxicity (6.5 months, 95% CI: 1.3-13.1), p-value=0.002 (Fig 4 and 5).

Characteristics	No of patients (n=98)
Sex, Male (%)	63 (64.3)
Age (mean (SD))	71.78 (8.88)
Metastasis, n (%)	
Adrenal	19 (19.4)
Bone	26 (26.5)
Brain	10 (10.2)
lymph nodes	37 (37.8)
Lung	45 (45.9)
Weight (mean (SD))	70.06 (13.37)
stato.PDL1 (%)	
<75	50 (51)
?75	48 (49)
ECOG.1.ciclo (%)	
0	25 (25.5)
1	64 (65.3)
2	9 (9.2)
Follow.up (median in months)	14.6
Duration of treatment (median in cycles)	7
Overall toxicity (%)	60 (61.2)
Cutaneous toxicity (%)	29 (29.6)
Gastrointestinal toxicity (%)	24 (24.5)
Endocrinological tosicity (%)	18 (18.4)
Other toxicity (%)	54 (55.1)

Table 1 - Patients characteristics

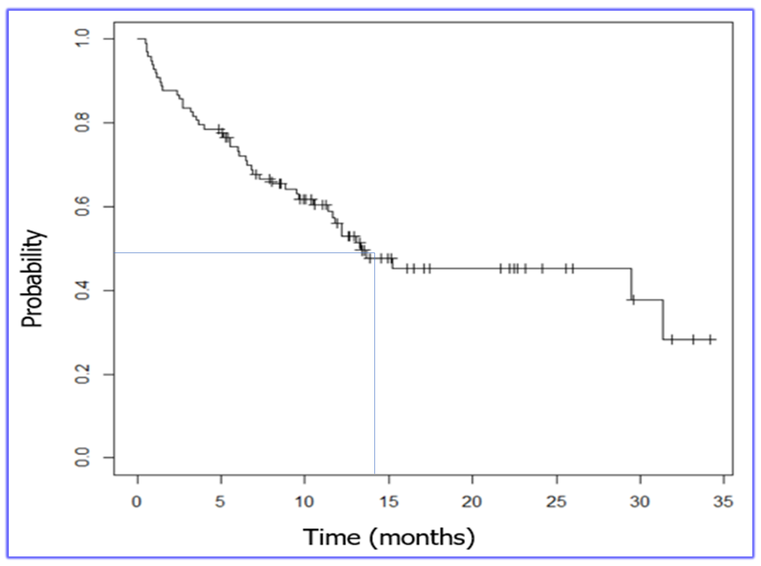

Fig.1 - Overall survival curves of patients treated by pembrolizumab whose 51% still alive at the last follow-up (36 months)

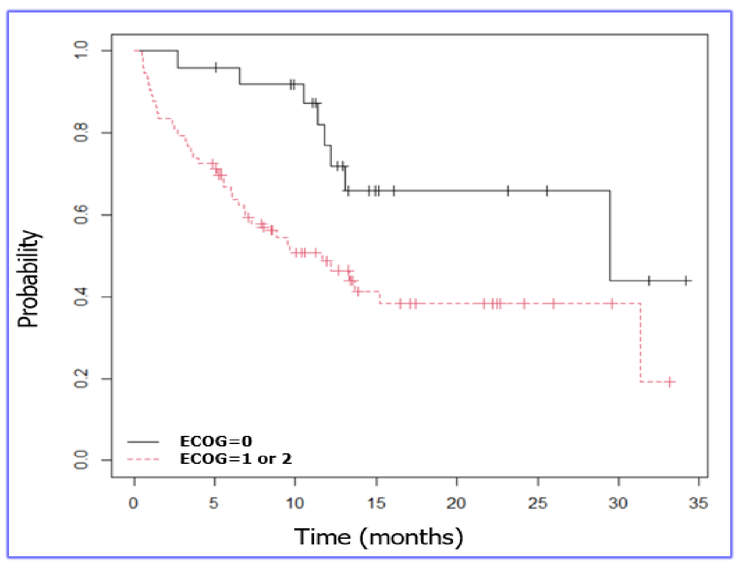

Fig.2 - Overall survival curve of patients with ECOG=0 compared to ECOG 1 or 2

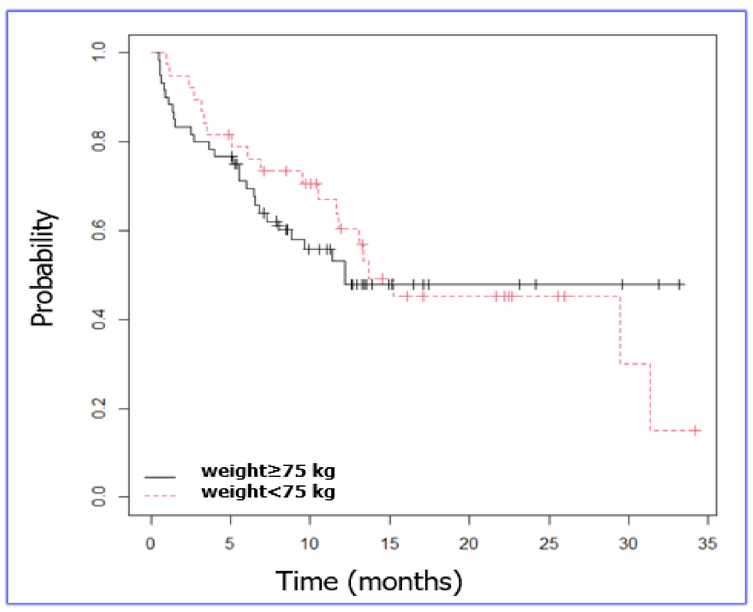

Fig.3 - Survival curves of patients who weighed≥75 kg (n=60) or less (n=38) (p=0.8)

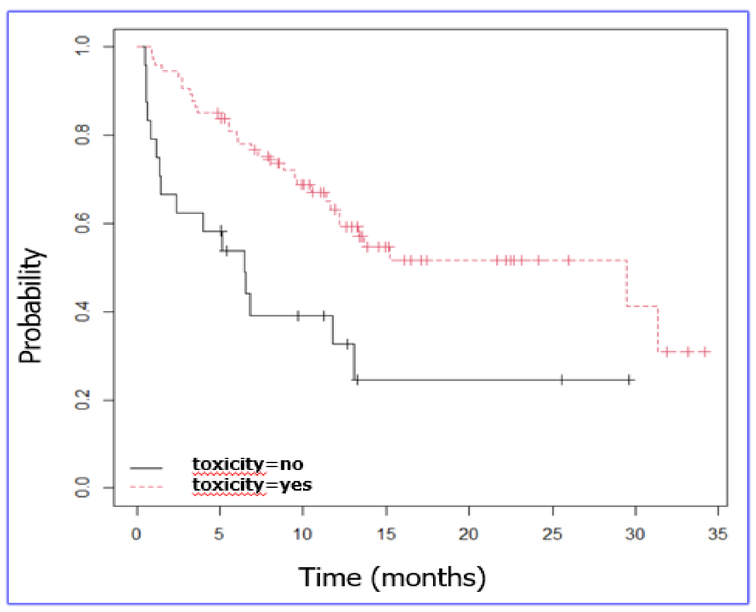

Fig.4 - OS curves of patients who experienced toxicity (n=74) or not (n=24) (p=0.002)

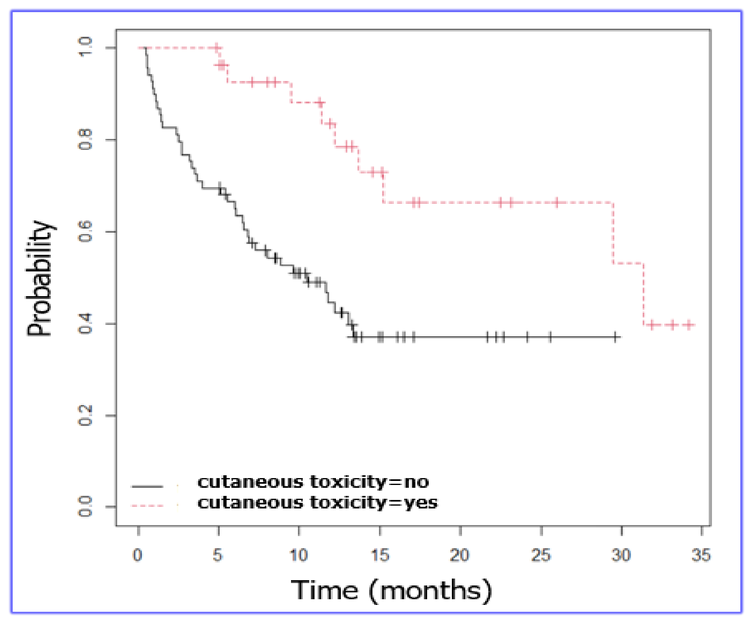

Fig.5 - OS curves of patients who experienced (n=29) or did not (n=69) treatment-related cutaneous toxicity (p=0.002)

CONCLUSION AND RELEVANCE

The present work shows real-life findings revealed in the setting of advanced NSCLC patients with PD-L1 TPS ≥50% demonstrate the effectiveness of pembrolizumab. The median OS of 13.3 months was similarly estimated as the real-world Pembreizh study[1] (15.3 months). The detected percentage of AE (75.5%) were comparable with those reported (73.4%) in KEYNOTE-024[2]. Pembrolizumab as mono-immunotherapy represents the actual standard of care in first-line treatment; results from trials evaluating combination with chemotherapy (KEYNOTE189) [3] could further change therapeutic approaches.

References:

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