

#2969 Metabolic Response Assessment by FDG-PET/CT in NSCLC Treated with ICIs;A Prospective Observational Study

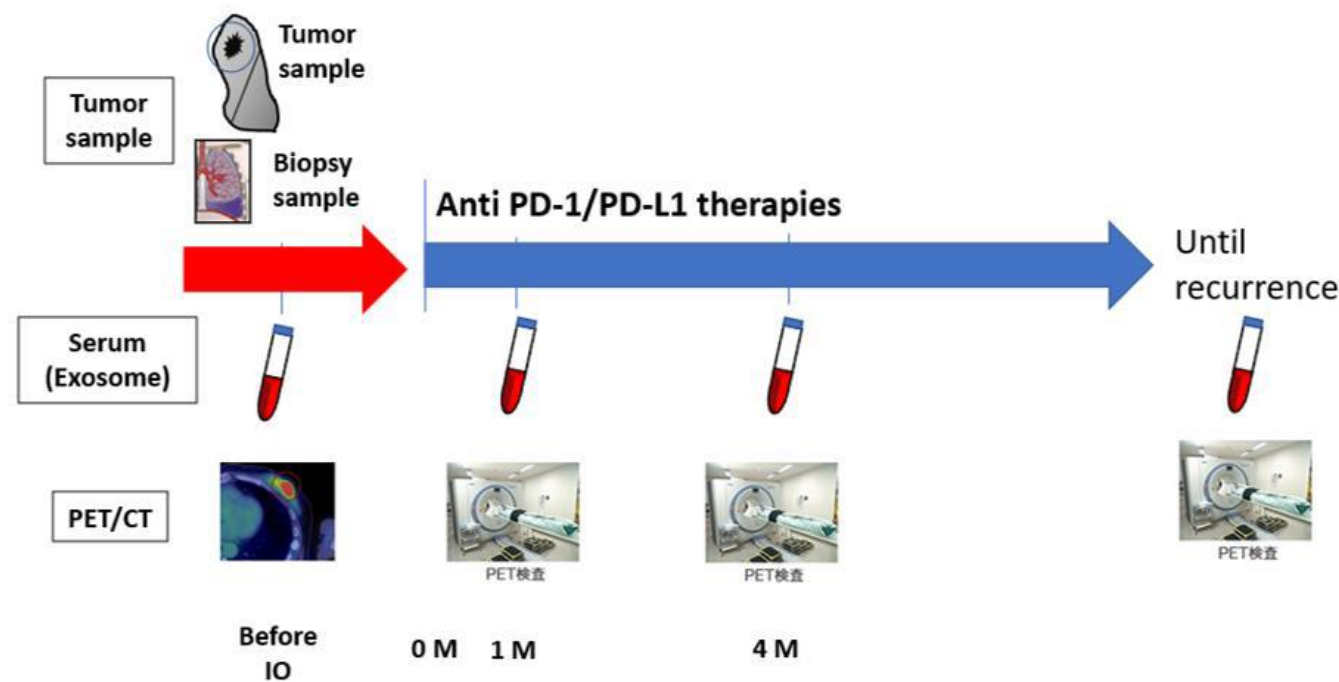
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Background

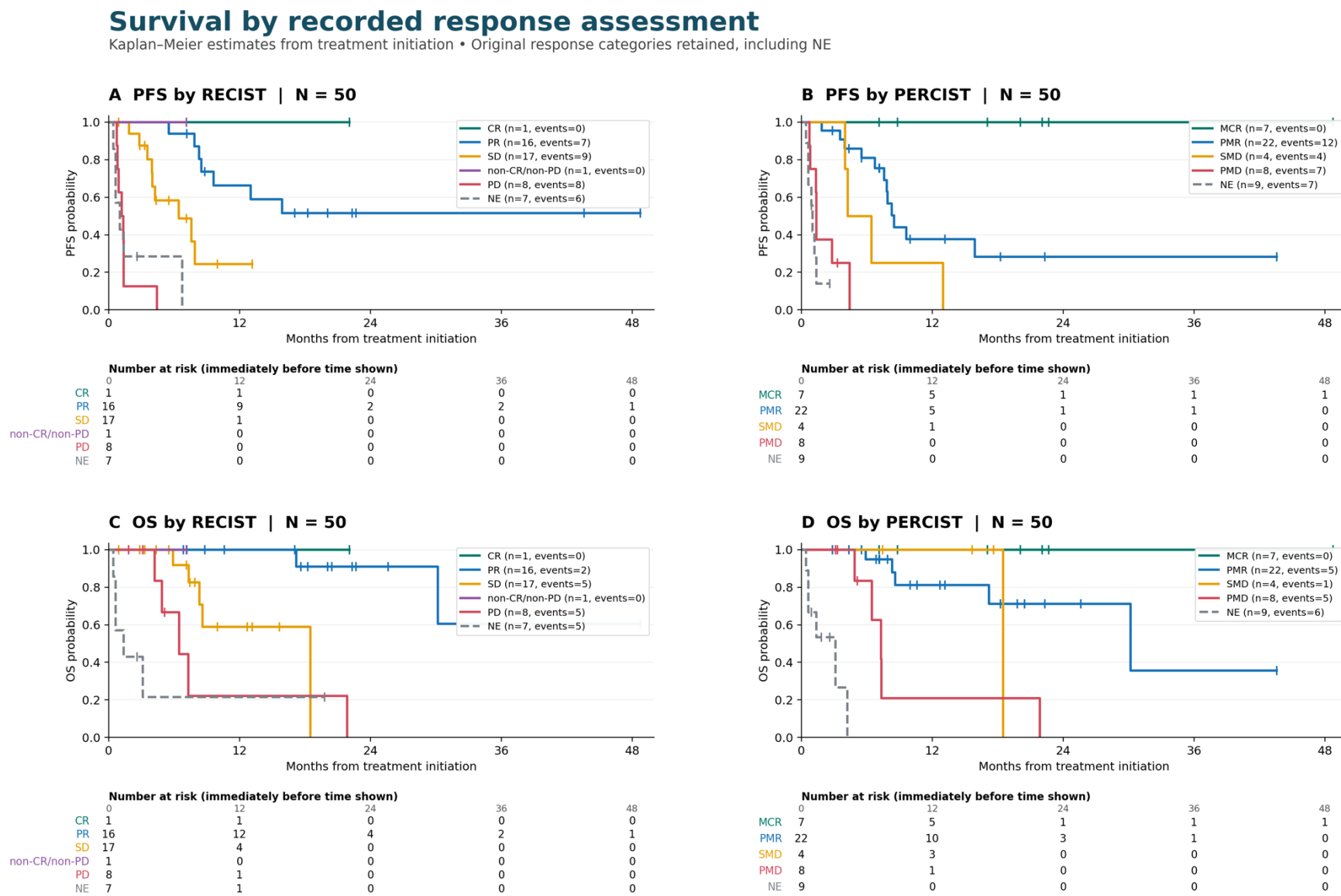
- ✓ Response assessment in NSCLC treated with immune checkpoint inhibitors (ICIs) remains challenging due to atypical patterns such as pseudoprogression, which cannot be adequately captured by size-based criteria.
- ✓ FDG-PET/CT provides a functional assessment of tumor metabolismand may allow earlier and more accurate evaluation of treatment response.
- ✓ This study aimed to compare metabolic response assessed by PERCIST with conventional RECIST in patients receiving ICIs.

Study schema



- ✓ In this prospective observational study, 50 patients with unresectable or recurrent NSCLC treated with ICIs were enrolled.
- ✓ All patients underwent baseline FDG-PET/CT prior to treatment. Follow-up PET/CT scans were performed at 1 month (T1), 4 months (T2), and at recurrence.
- ✓ Treatment response was assessed using PERCIST and compared with RECIST. Longitudinal changes in SUVmax were also evaluated.

Survival outcome



- ✓ A total of 50 patients (41 males, 9 females) were included, with adenocarcinoma accounting for 70% of cases.
- ✓ PET/CT evaluation up to T2 was completed in 29 patients (58%).

Results

Table1: Patient characteristics

Characteristic	Overall (N = 50)	Characteristic	Overall (N = 50)
Age, years	68 (47–83)	Disease status	
Sex		Stage III	3 (6.0)
Male	41 (82.0)	Stage IV	18 (36.0)
Female	9 (18.0)	Recurrence	29 (58.0)
Histology		PD-L1 TPS	
Adenocarcinoma	35 (70.0)	<1%	13 (26.0)
Squamous cell carcinoma	10 (20.0)	1–49%	16 (32.0)
Other histologies	5 (10.0)	≥50%	21 (42.0)
Treatment line		Treatment Regimen	
First line	45 (90.0)	Pembrolizumab	31 (62.0)
Second line	5 (10.0)	Atezolizumab	13 (26.0)
Treatment type		Nivolumab (+ Ipilimumab)	5 (42.0)
With chemo	38 (76.0)	Durvalumab + Tremelimumab	1 (2.0)
Without chemo	12 (24.0)	Disease status	

Table2: Agreement Between RECIST and PERCIST Response Assessments

RECIST	CMR	PMR	SMD	PMD	NE	Total
CR	1	0	0	0	0	1
PR	5	10	1	0	0	16
SD	0	11	3	2	1	17
Non-CR/non-PD	1	0	0	0	0	1
PD	0	0	0	6	2	8
NE	0	1	0	0	6	7
Total	7	22	4	8	9	50

Conclusion

Metabolic response assessed by FDG-PET/CT identified treatment effects not captured by RECIST and detected progression earlier in a subset of patients. In particular, CMR was associated with sustained disease control. PET-based assessment may therefore complement conventional imaging in evaluating ICI response.

Acknowledgement:

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