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ICI. In this study, we evaluate the prognosis of patients with NSCLC, according to NLR and PLR, treated with ICI.
Methods: Retrospective analysis of 92 patients with NSCLC treated with ICI since January 2016 until June 2020. Pre-treatment NLR and PLR were calculated by division of neutrophils and platelets by lymphocytes measured in peripheral blood. NLR ≥ 5 and PLR ≥ 150 were considered high, according to literature data. Overall survival (OS) and progression free-survival (PFS) curves were estimated using the Kaplan–Meier method.
Results: From 92 patients with NSCLC treated with ICI, 65 (70.7%) were male, with a median age of 62 years (range 38–83). Seventy-eight (84.8%) had stage IV disease and 14 (15.2%) received ICI in first-line treatment. Pembrolizumab was used in 35 (38%) patients, nivolumab in 53 (57.6%) and durvalumab in 4 (4.3%). Median OS was 16.8 m (95% CI 7.98–25.60) in NLR <5 group and 5.5 m (95% CI 1.85–9.12) in NLR ≥5 group (p = 0.003). Median PFS was 9.9 m (95% CI 4.57–15.28) in NLR <5 group and 2.4 m (95% CI 0.99–3.87) in NLR ≥5 group (p = 0.008). Cox regression analysis showed a better OS and PFS in NLR <5 group (HR = 2.43, 95% CI 1.33–4.44 and HR = 2.15, 95% CI 1.21–3.81, respectively). Median OS was 24.5 m (95% CI 6.03–43.05) in PLR <150 group and 9.4 m (95% CI 4.37–14–50) in PLR ≥150 group (p = 0.041).
Conclusions: Elevated pre-treatment NLR and PLR were associated with worse outcomes. Our results are in agreement with previous studies showing that inflammation markers are potential predictors of response in ICI treated patients. Prospective studies are required to validate these findings.
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177P

Efficacy of S-1 after pemetrexed in patients with non-small cell lung cancer: A retrospective multi-institutional analysis

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Background: S-1 and pemetrexed (PEM) are key treatments for non-small cell lung cancer (NSCLC). PEM and cisplatin (CDDP), showed superior overall survival (OS) compared with gemcitabine and CDDP in treating non-squamous (non-Sq) NSCLC patients, and PEM and platinum treatment is usually used for this population (1). S-1 monotherapy showed non-inferior OS compared with docetaxel in treated NSCLC patients, and is also used for NSCLC as a standard therapy after first line treatment (2). However, the mechanism of anticancer activity of S-1 and PEM is similar. For example, both S-1 and PEM target thymidylate synthase (TS) (3). Moreover, cross-resistance between S-1 and PEM is of concern. Some preclinical studies indicated that elevation of TS expression after PEM treatment may be one of the causes of cross-resistance between S-1 and PEM (4,5). In addition, TS expression level is associated with response to S-1 in NSCLC in a clinical setting (6). Resistance to PEM may indicate resistance to S-1. Unfortunately, studies about the treatment effect of S-1 after PEM in the clinical setting are limited.
Methods: This retrospective study included patients with advanced (c-stage III or IV, UICC 7th) or recurrent NSCLC who received S-1 monotherapy following the failure of previous PEM-containing chemotherapy at 6 hospitals in Japan. Primary endpoint: Overall response rate (ORR). Secondary endpoint: Disease control rate (DCR), time to treatment failure (TTF), progression-free survival (PFS), and overall survival (OS).
Results: A total of 53 NSCLC patients met the criteria. Forty-six patients had adenocarcinoma (88.7%) and no patients had squamous cell carcinoma. Thirty-one patients (58.5%) received the standard S-1 regimen and 18 patients (34.0%) received the modified S-1 regimen. ORR was 1.9% (95% confidential interval (CI): 0.00–10.1%). Median TTF, PFS, and OS were 65 days, 84 days, and 385 days, respectively.
Conclusions: Though there were several limitations in this study, the ORR of S-1 after PEM in patients with non-SQ NSCLC was low compared to the historical control. It might be one of the choices to avoid S-1 treatment in PEM-treated patients who need tumor shrinkage.
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178P

Neutrophil lymphocyte ratio (NLR) kinetics as a biomarker of treatment response and outcome

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Background: Neutrophil Lymphocyte Ratio (NLR) at baseline has been shown to be a biomarker of prognosis in many malignancies. However, few studies have addressed if NLR kinetics (pre- and post-treatment) affects treatment responses and outcomes. It has been postulated that NLR differences of more than double (over baseline) is associated with poorer outcomes.
Methods: This is a retrospective analysis. Records of all patients with Locally Advanced Lung Cancer (Stage 2B-3C) who were treated radically in Hospital Kuala Lumpur from 2012 to 2019 were analysed. There were 18 patients with complete records (including available Full Blood Counts pre-treatment). Difference in NLR (baseline and post treatment) was calculated. The difference in NLR, as a ratio to the baseline NLR was calculated and tabulated as High (doubled or more) or low/stable (less than double).
Results: The median progression free survival (PFS) of patients with high NLR was significantly shorter than those with low/stable NLR (12 months vs 24 months, p = 0.02). The median overall survival showed a trend towards improvement with low/stable NLR compared to high NLR (25months vs 14months, p = 0.063).
Conclusions: An NLR value that doubles or more post treatment is associated with worse outcomes. NLR is an acute phase reactant which is a systemic inflammatory marker. It has been hypothesized that persistent inflammation is detrimental. NLR kinetics may be an index of response to treatment and prognosis that will need to assess in prospective studies. In conclusion, NLR which doubles or more post treatment was associated with significantly worse progression free survival and a trend towards worse overall survival.
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179P

Efficacy and safety of extended-interval dosing strategy of immune checkpoint inhibitors during the COVID-19 outbreak: Experience from a single center

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Background: Question emerged during COVID-19 pandemic to minimize the risk of nosocomial viral exposure. Pharmacokinetic modelling evidence supports extended-interval dosing of ICI in advanced NSCLC,

showing equivalent pharmacological performance than standard schedule. However, there is a clear lack of clinical data.

Methods: We performed an observational, retrospective study in a French university hospital. The extended-schedule of ICI administration began during the first pandemic period (from march to may 2020). We report here the clinical characteristics and early efficacy and safety signals, after a minimal follow-up of 6 months. Data (tumor response, adverse event) were collected based on medical records.

Results: 25 patients received the extending-dose schedule (13 pembrolizumab 400 mg Q6W, 12 nivolumab 480 mg Q4W) during the inclusion period. Most of the malignancies were stage IV (21/25) adenocarcinoma (20/25) with 13/25 tumors showing a PD-L1 TPS>50%. Most of the patients were in 2nd or 3rd line of treatment (15/25). 3 patients started ICI with double dose-schedule, whereas 22 transitioned from a previous standard-dose regimen. Altogether, 13/25 (52%) patients presented or remained on partial response with extended-interval dosing schedule during follow-up, with 11/25 (44%) continuing this regimen on september 1st. The adverse events reported in the patient still on ICI were grade 1 diarrhea or arthralgia. The median duration of prior exposure to ICI for those patients was 278 days. 14 patients stopped the extended-interval dosing schedule including 7 for disease progression and 6 for immune-related adverse event. The main observed adverse events were asthenia (n = 4), diarrhea (n = 1) and arthralgia. The median duration of prior exposure to ICI for those patients was 178 days. 3 patients died during the follow-up period. No SARS-CoV2 infection was observed.

Conclusions: This work based on real-life experience shows that extending the dose and interval of ICI treatment in advanced NSCLC is feasible. Early efficacy and safety signals appear encouraging. The adverse events reported were expected side-effects of immunotherapy and no grade 4–5 toxicity was observed.

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180P

Incidence of brain metastases (BM) in newly diagnosed stage IV NSCLC during COVID-19

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Background: Reduced diagnostic procedures and late presentation during COVID19 may lead to late diagnosis of NSCLC. De novo BM may thus be more common during COVID19. Baseline incidence of BM in asymptomatic patients (pts) needs to be defined.

Methods: Consecutive pts with stage IV NSCLC referred to Royal Marsden Hospital between Jun-Nov 2020 were included. Prospectively collected data were analysed descriptively.

Results: Of 172 pts, 95 (55%) underwent brain imaging, 77 (45%) did not. More pts with brain imaging had good ECOG and received systemic therapy compared to those without brain imaging (table). 37/95 (39%) pts had BM on imaging. In pts with BM, 65% had BM symptoms, 35% did not. 12/27 (44%) pts with 1–5 BM were asymptomatic compared to 1/10 (10%) pts with ≥6 BM (p = 0.07). 32/95 (34%) pts with brain imaging had BM symptoms; of which 24 (66%) had BM confirmed on imaging. However, 13/63 (21%) asymptomatic pts also had BM detected on imaging. 10/37 (27%) pts with BM received stereotactic radiosurgery, of which 5 were asymptomatic. Of the remaining 27 pts with BM, 12 received TKI alone, 1 was monitored, 4 received palliative radiotherapy, 8 were unfit for treatment, 2 died. 11/37 (30%) pts with BM did not receive systemic therapy.

Table 180P: Characteristics

	Brain imaging N = 95 N (%)	No brain imaging N = 77 N (%)
Age		
Median (range)	70 (34–95)	74 (47–91)
Smoking		
Never	20 (21%)	12 (16%)
Ex/current	74 (78%)	51 (66%)
NA	1 (1%)	14 (18%)
ECOG		
0	16 (17%)	5 (6%)
1–2	68 (72%)	37 (48%)
3–4	11 (11%)	27 (35%)
NA	0 (0%)	8 (10%)
Subtype		
Adenocarcinoma	68 (72%)	45 (58%)
Squamous cell	11 (12%)	12 (16%)
Other	11 (11%)	4 (5%)
NA	5 (5%)	16 (21%)
Molecular		
Variant detected	52 (55%)	25 (32%)
No variant	28 (29%)	31 (40%)
NA	15 (16%)	21 (27%)
BM symptoms		
Yes	32 (34%)	4 (5%)*
No	63 (66%)	60 (78%)
NA	0	13 (17%)
Systemic therapy		
NA	0 (0%)	2 (3%)
Yes	64 (67%)	32 (42%)
No	31 (33%)	43 (56%)
Poor ECOG Pt wishes Died Surgery/ radiotherapy only Monitor	17 4 5 3 2	28 2 12 0 1

*Not for active treatment.

Conclusions: The incidence of de novo BM was high in pts with stage 4 NSCLC during COVID19 (39%), higher than historical rates (25%). Many pts with BM were asymptomatic (35%). Brain imaging should be considered in all pts with a new diagnosis of stage 4 NSCLC. Whether early diagnosis and treatment of BM affects survival will need to be explored.

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