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ADVANCING IMMUNO-ONCOLOGY

Conference Call & Webcast:

Clinical Data Highlights at Society for Immunotherapy of Cancer (SITC) Annual Meeting

November 13, 2021

Forward Looking Statements

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Agenda and Introduction

- **Welcome**: Fred Vogt, Interim CEO and President
- **First phase 2 results of autologous tumor-infiltrating lymphocyte (TIL; LN-145) monotherapy in patients with advanced, immune checkpoint inhibitor-treated, non-small cell lung cancer (NSCLC):** Adam J. Schoenfeld, MD, Memorial Sloan Kettering
- **Phase 2 efficacy and safety of autologous tumor-infiltrating lymphocyte (TIL) cell therapy in combination with pembrolizumab in immune checkpoint inhibitor-naïve patients with advanced cancers**: David M. O'Malley, MD, The Ohio State University
- **Panel Discussion**
- **Q&A**

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SITC 2021 | 10-14 November 2021 | Washington, DC & Virtual

First Phase 2 Results of Autologous Tumor-Infiltrating Lymphocyte (LN-145) Monotherapy in Patients with Advanced, Immune Checkpoint Inhibitor-Treated, Non-Small Cell Lung Cancer (NSCLC)

Adam J Schoenfeld,[1] Sylvia Lee,[2] Luis Paz-Ares,[3] Bernard Doger,[4] Scott Gettinger,[5] Simon Häfliger,[6] Angela Orcurto,[7] Ammar Sukari,[8] Sophie Papa,[9] Juan Francisco Rodriguez Moreno,[10] Friedrich Graf Finckenstein,[11] Madan Jagasia,[11] Rana Fiaz,[11] Giri Sulur,[11] Guang Chen,[11] Viktoria Gontcharova,[11] Kai He[12]

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SITC Key Data Takeaways for Iovance TIL in mNSCLC

TIL cell therapy is a potentially viable treatment option for patients with advanced NSCLC

- A majority of patients with advanced NSCLC develop disease progression with first-line ICI ± chemotherapy[1] - effective strategies to provide deep and durable responses are urgently needed
- Signal-finding Cohort 3B demonstrates feasibility and safety for TIL therapy LN-145 in mNSCLC in a diverse set of heavily-treated patients
- First experience for TIL monotherapy to show clinical benefit in a multi-center study with a centralized manufacturing process
- ORR is 21.4% in the full analysis set (n=28) and 25% in the efficacy-evaluable set (n=24).
  - One CR and one PR ongoing at 20.7 months and 3.0 months, respectively, at a median study follow up of 9.8 months
  - Responses observed following multiple prior therapies, including tumors resistant to anti–PD-1, and across a range of PD-L1 expression levels, clinical characteristics and molecular features.
- Supports ongoing study IOV-LUN-202 in 2L mNSCLC patients, with potential to demonstrate increase in overall responses and durability for patients with unmet medical need but with fewer prior lines of therapy
- Solidifies Iovance commitment to advancing both TIL alone and TIL combinations to address multiple non-small cell lung cancer patient populations

August 24, 2021 data cutoff. Abbreviations: mNSCLC, metastatic non small cell lung cancer; ICI, immune checkpoint inhibitors; ORR, objective response rate; TIL, tumor-infiltrating lymphocytes; CR, complete response; PD-L1, programmed death ligand 1; PR, partial response.

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Adam J. Schoenfeld, MD

Medical Oncologist, Memorial Sloan Kettering

Baseline Patient Characteristics (FAS)

Characteristic	COM-202 Cohort 3B (N=28)
Sex, n (%)	
Male	14 (50.0)
Female	14 (50.0)
Median (min, max) age, y	61.0 (40, 74)
Smoker (current or former), n (%)	24 (85.7)
Histologic cell type, n (%)	
Adenocarcinoma	22 (78.6)
Squamous	5 (17.9)
Other	1 (3.6)
Tumor PD-L1 expression, n (%)*	
TPS <1%	4 (14.3)
TPS 1%–49%	10 (35.7)
TPS ≥50%	8 (28.6)
Median (min, max) number of target and non-target lesions	4.5 (2, 11)
Median (min, max) target lesion sum of diameters, mm	79.0 (22, 179)

Characteristic	COM-202 Cohort 3B (N=28)
Prior brain metastases, n (%)	10 (35.7)
Median (min, max) number of prior systemic therapies	2.0 (1, 6)
Prior systemic therapies, n (%)	
Anti–PD-1 and/or anti–PD-L1	28 (100)
Chemotherapy	27 (96.4)
Anti–PD-1	23 (82.1)
Anti–PD-L1	7 (25.0)
Anti–VEGF	6 (21.4)
Anti–CTLA-4	6 (21.4)
EGFR inhibitor	1 (3.6)
Tyrosine kinase inhibitor	1 (3.6)
Other	3 (10.7)

- All patients received prior ICI
- TIL were most commonly harvested from lung metastases (60.7%)

*Per central laboratory from tumor harvest specimen; tumor PD-L1 expression data were missing for 6 patients.
Abbreviations: CTLA-4, cytotoxic T lymphocyte antigen-4; EGFR, epidermal growth factor receptor; ICI, immune checkpoint inhibitors; PD-1, programmed cell death protein-1; PD-L1, programmed death ligand-1; TPS, tumor proportion score; VEGF, vascular endothelial cell growth factor.

Treatment-Emergent Adverse Events* (≥30%, FAS)

	COM-202 Cohort 3B (N=28)		
TEAE, n (%)	Any Grade	Grade 3/4	Grade 5
Any event	28 (100)	27 (96.4)	2 (7.1)‡
Thrombocytopenia	20 (71.4)	19 (67.9)	0
Anemia	19 (67.9)	14 (50.0)	0
Hypotension	17 (60.7)	7 (25.0)	0
Chills	16 (57.1)	1 (3.6)	0
Pyrexia	16 (57.1)	1 (3.6)	0
Hypoxia	13 (46.4)	5 (17.9)	0
Diarrhea	10 (35.7)	3 (10.7)	0
Neutropenia†	10 (35.7)	6 (21.4)	0
Peripheral edema	10 (35.7)	0	0
Alopecia	9 (32.1)	0	0
Decreased appetite	9 (32.1)	3 (10.7)	0
Dyspnea	9 (32.1)	3 (10.7)	0
Fatigue	9 (32.1)	4 (14.3)	0

- Safety was consistent with the underlying advanced disease and known safety profiles of NMA-LD and IL-2
- Any-grade tumor harvest-related AEs were reported for 16 (41.0%) patients, most commonly:
  - Procedural pain, n=7 (17.9%)
  - Hypoxia, n=4 (10.3%)
  - Majority of tumor harvest-related AEs were Grade 1 or 2

*TEAEs include AEs that occur from the time of TIL infusion, up to 30 days after TIL infusion or start of a new anticancer therapy.
†Only laboratory abnormalities considered clinically significant by the investigator were reported as AEs.
‡One Grade 5 event each was reported for chronic cardiac failure (not related to TIL) and multiple organ dysfunction syndrome (possibly related to TIL).
Abbreviations: AE, adverse event; FAS, full analysis set; IL-2, interleukin-2; NMA-LD, nonmyeloablative lymphodepletion; TIL, tumor-infiltrating lymphocytes.

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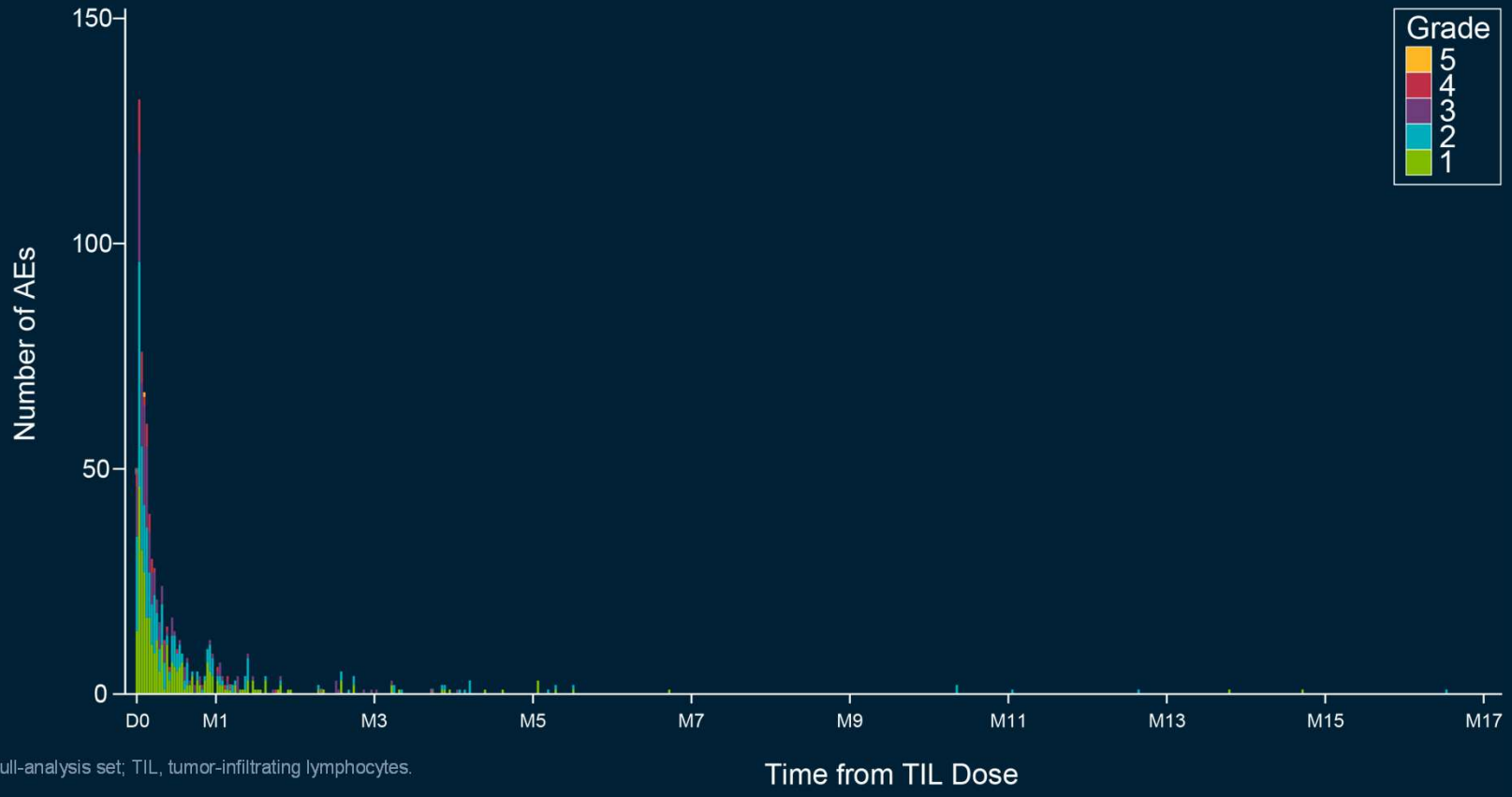
Adverse Events Over Time (FAS)

- Most AEs occurred prior to or within the first 2 weeks after TIL infusion
- Median number of IL-2 doses: 5.5



Abbreviations: AE, adverse event; FAS, full-analysis set; TIL, tumor-infiltrating lymphocytes.

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Efficacy

Response	COM-202 Cohort 3B (N=28) n/N	% (95% CI)
Full-Analysis Set (FAS)		
ORR	6/28	21.4 (8.3, 41.0)
CR	1/28	3.6
PR	5/28	17.9
SD	12/28	42.9
PD	6/28	21.4
DCR	18/28	64.3 (44.1, 81.4)
NE*	4/28	14.3
Efficacy-Evaluable Set		
ORR	6/24	25.0 (9.8, 46.7)
DCR	18/24	75.0 (53.3, 90.2)

Duration, months	Median (95% CI)	Min, Max
Study follow-up (FAS)	9.8 (5.8, 14.5)	0.1+, 22.1

- ORR:
  - 21.4% in the FAS
  - 25.0% in the efficacy-evaluable set
- All responders received ≥2 prior lines of systemic therapy
- Median number of TIL infused was 20.9×10^9
  - Median time from resection to infusion was 35.0 days
  - Median time from infusion to BOR was 2.2 months

*Excluded from efficacy-evaluable set due to death prior to first assessment.
Abbreviations: BOR, best overall response; CR, complete response; DCR, disease control rate; FAS, full-analysis set; ORR, objective response rate; PD, progressive disease; PR, partial response; SD, stable disease; TIL, tumor-infiltrating lymphocytes.

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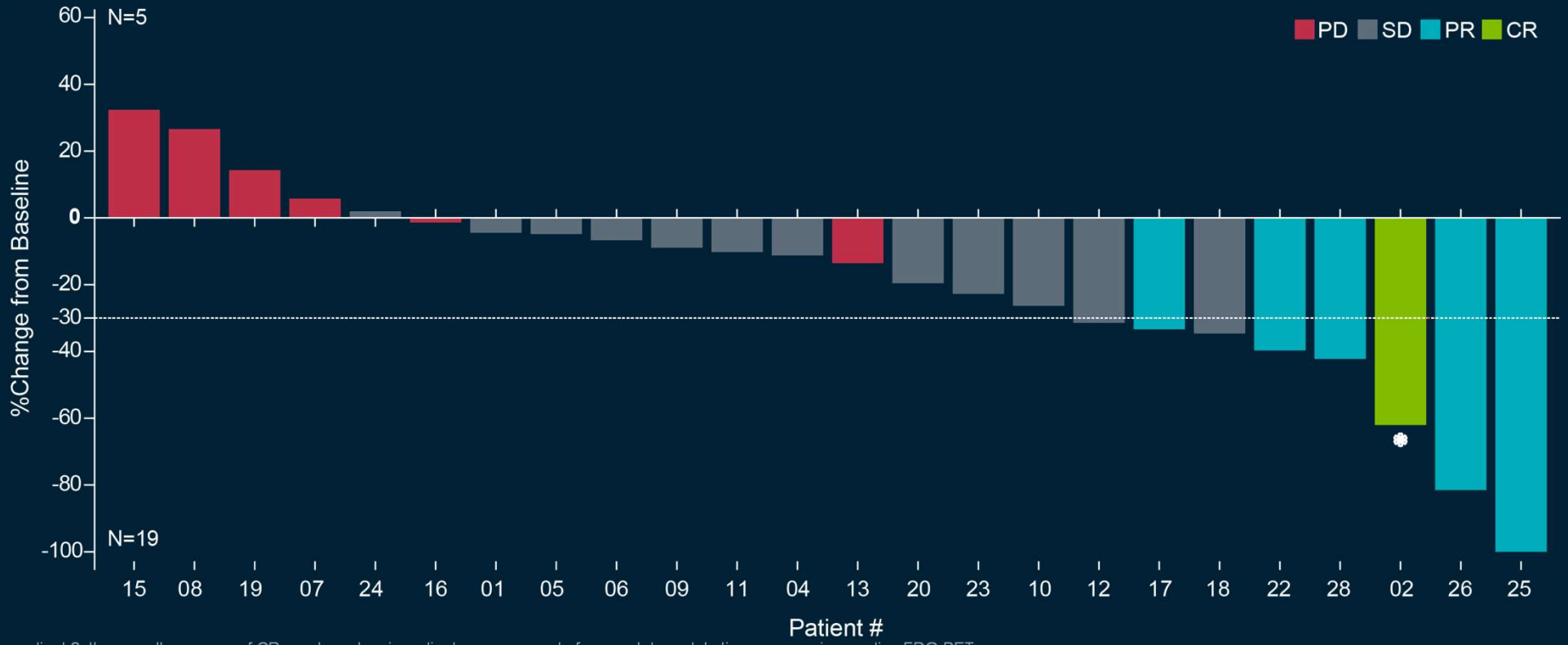
Best Percentage Change from Baseline in Target Lesion Sum of Diameters (Efficacy-Evaluable Set)



*For patient 2, the overall response of CR was based on investigator assessment of a complete metabolic response via negative FDG-PET scan.
Abbreviations: CR, complete response; FDG-PET, fluorodeoxyglucose-positron emission tomography; PD, progressive disease; PR, partial response; SD, stable disease.

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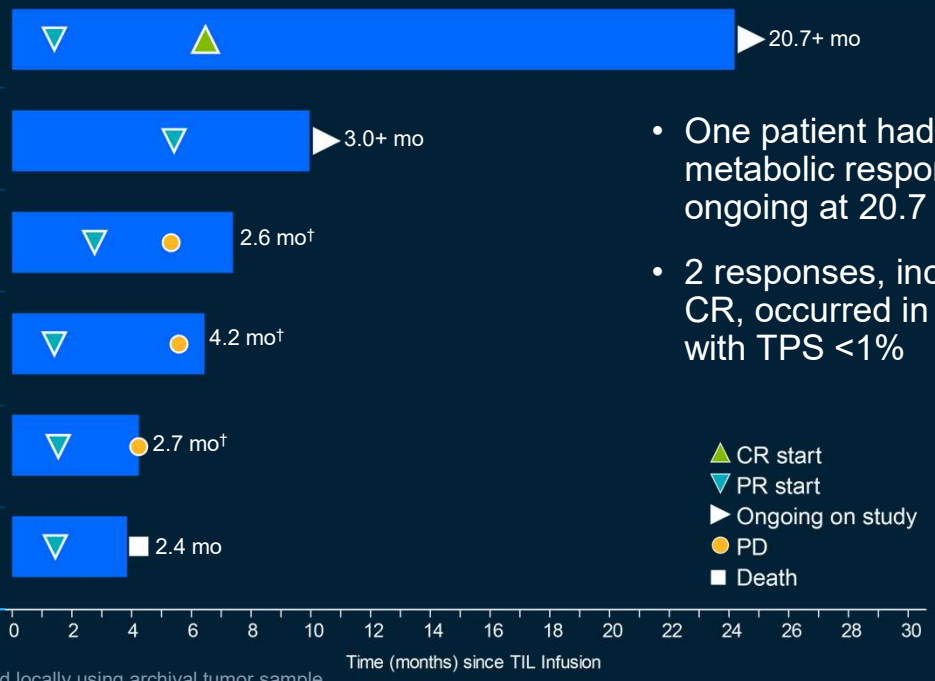
Time to First Response, Duration of Response, and Time on Efficacy Assessment for Confirmed Responders Who Achieved PR or Better

Pt ID	Prior Therapies	BOR to Prior ICI	Smoking (pack-yr)	PD-L1 TPS (%)*	Driver Oncogene Mutations
2	Abraxane + Carboplatin; Nivolumab; Cisplatin + Gemcitabine	PD	0	<1	Not assessed
17	Radiotherapy; Ipilimumab + Nivolumab; Bevacizumab + Cisplatin + Pemetrexed	PD	16	70	*KRAS*^{G12C}
25	Carboplatin + Paclitaxel; Cisplatin + Etoposide; Durvalumab	PD	52	0	Not assessed
26	Cisplatin + Pembrolizumab + Pemetrexed; Carboplatin + Paclitaxel + Pembrolizumab; Gemcitabine + Vinorelbine	PR	<1	40	*KRAS*^{G12D}
22	Radiosurgery; Carboplatin + Pembrolizumab + Pemetrexed; Docetaxel	PR	21	5	None detected
28	Radiotherapy; Cisplatin + Vinorelbine; Atezolizumab; Pemetrexed	SD	3	90	None detected



- One patient had a complete metabolic response, ongoing at 20.7 months
- 2 responses, including the CR, occurred in patients with TPS <1%

*Per central laboratory from tumor harvest specimen, except for patient 2, who had TPS assessed locally using archival tumor sample.
†Patient 25 had PD due to new lesion; patients 26 and 22 had unequivocal PD of non-target disease.
Abbreviations: BOR, best overall response; CR, complete response; ICI, immune checkpoint inhibitors; PD, progressive disease; PD-L1, programmed death ligand 1; PR, partial response; Pt, patient; TIL, tumor-infiltrating lymphocytes; TPS, tumor proportion score.

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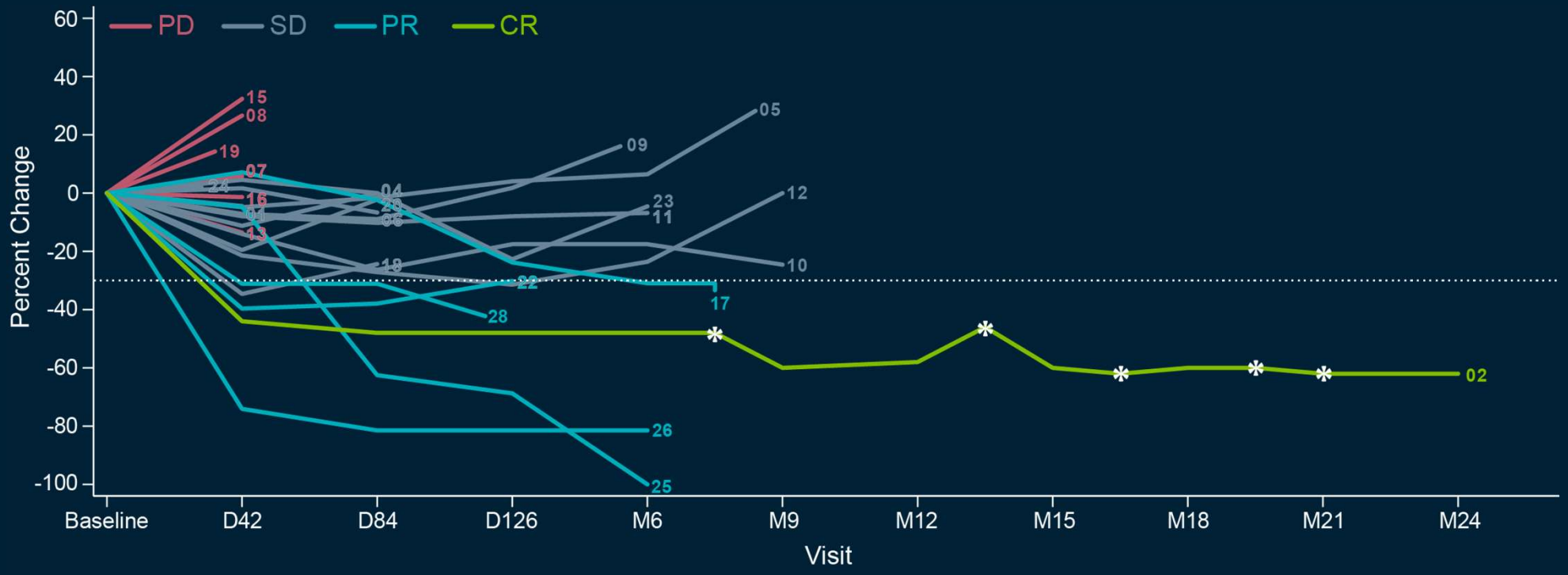
Percentage Change from Baseline in Target Lesion Sum of Diameters (FAS)



*The overall response of CR is based on a negative FDG-PET scan by Investigator.
Abbreviations: CR, complete response; FAS, full-analysis set; PD, progressive disease; PR, partial response; SD, stable disease.

Conclusions

- This signal-finding study demonstrated the feasibility of tumor harvest, TIL manufacturing, and TIL treatment in patients with advanced NSCLC
  - Patients tolerated surgical resection, including pulmonary lesions
  - TIL manufacturing was feasible for most patients
  - One-time LN-145 treatment with conditioning regimen was well-tolerated
- The TCR repertoire of LN-145 generated from NSCLC tumors demonstrated a similar number of unique TCR clones, as well as measures of diversity and clonality, as previously published for lifileucel for melanoma[1] and LN-145 for cervical cancer[2]
- Despite multiple prior lines of therapy, 6 patients experienced responses, including 2 with durable responses, consistent with published experience including durable CRs extending beyond 1 year[3]

Learnings from this study:

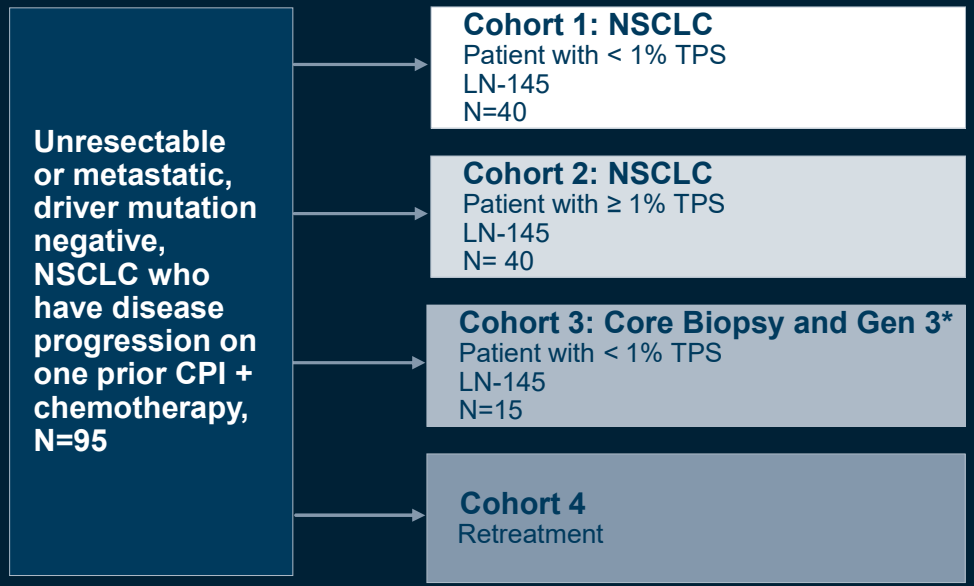
- TIL cell therapy is a potentially viable treatment option for patients with advanced NSCLC
- Study IOV-LUN-202 (NCT04614103) was designed to enroll patients with NSCLC with an unmet medical need but with fewer prior lines of therapy to maximize the potential for more sustained responses

Abbreviations: CR, complete response; NSCLC, non-small cell lung cancer; TCR, T-cell receptor; TIL, tumor-infiltrating lymphocytes.

1. Gontcharova V, et al. *Cancer Research* (2019); 79:13 (suppl; abstract 14). 2. Jazaeri A, et al. *Annals Oncol* (2020);31:S642 (suppl; abstract 3688). 3. Creelan BC, et al. *Nature Med* (2021): doi: 10.1038/s41591-021-01462-y.

IOV-LUN-202

Phase 2, multicenter study of LN-145 in Patients with Metastatic Non-Small-Cell Lung Cancer, IOV-LUN-202 (NCT04614103)



Endpoints:

- Primary: Efficacy defined as ORR by IRC
- Secondary: Safety and efficacy

Study Updates

- First patients dosed in 2Q21
- >20 sites are active in U.S. and Canada

IOV-LUN-202 (NCT04614103) is designed to enroll patients with NSCLC with an unmet medical need but with fewer prior lines of therapy to maximize the potential for more sustained responses

*Cohort 3 patients unable to undergo surgical harvest, TIL grown from core biopsy

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Phase 2 Efficacy and Safety of Autologous Tumor-Infiltrating Lymphocyte (TIL) Cell Therapy in Combination with Pembrolizumab in Immune Checkpoint Inhibitor-Naïve Patients with Advanced Cancers

David O'Malley,[1] Sylvia M Lee,[2] Amanda Psyrri,[3] Ammar Sukari,[4] Sajeve Thomas,[5] Robert M Wenham,[6] Helen Gogas,[7] Amir Jazaeri,[8] Bradley J Monk,[9] Peter G Rose,[10] Antonio Rueda,[11] Friedrich Graf Finckenstein,[12] Madan Jagasia,[12] Rana Fiaz,[12] Brigid Garelik,[12] Wen Shi,[12] Anjali Desai,[12] Giri Sulur,[12] Guang Chen,[12] Xiao Wu,[12] Antonio Jimeno[13]

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SITC Key Data Takeaways for Iovance TIL + Pembrolizumab

Validates combination of check-point inhibition and TIL cell therapy as a potential platform in solid tumors

- Novel early-line combination therapies are needed to improve rate and depth of responses with manageable long-term safety for patients with solid tumors
- In the ICI-naïve setting, TIL + pembrolizumab produced encouraging efficacy with expected safety in patients with advanced melanoma, HNSCC, and cervical cancer
- ORR of 57% in cervical cancer, 60% in melanoma, and 39% in HNSCC represent meaningful increase in responses vs. pembrolizumab alone
  - ORR for early-line treatment with single-agent pembrolizumab is 33% in advanced melanoma[1] and 17% in HNSCC.[2]
  - ORR with pembrolizumab monotherapy is 11%-14% in cervical cancer patients previously treated with standard of care systemic chemotherapy.[3]
- 30% CR rate (n=3/10) in melanoma compares to 6% CR rate for pembrolizumab alone. 1 uCR and 2 metabolic CRs reported at ASCO 2021 converted to 3 confirmed CRs per RECIST 1.1
- Overall data from 3 cohorts support continued development of TIL combinations as earlier treatment in melanoma, head and neck, cervical, non-small cell lung and other solid tumor cancers

1. Robert C, et al. N Engl J Med 2015; 372:2521-2532.
2. Burtness B, et al. Lancet 2019; 394:1915-1928.
3. KEYTRUDA (pembrolizumab) USPI

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David M. O'Malley, MD

Professor of Obstetrics and Gynecology at The Ohio State University College of Medicine

Director of the Division of Gynecologic Oncology, The Ohio State University Comprehensive Cancer Center (OSUCCC – James)

Background

- ICI are standard-of-care in the treatment of several types of advanced cancer, including melanoma,[1] HNSCC,[2,3] and cervical cancer[4,5]
- Lifileucel (LN-144) and LN-145, one-time autologous adoptive cell therapies using TIL, have demonstrated encouraging efficacy with acceptable safety as monotherapy in patients with advanced cancer that has failed treatment with ICI[6,7]
- Early-line treatment with single-agent pembrolizumab achieved an ORR of 33% in patients with advanced melanoma[8] and 17% in patients with HNSCC[9]
  - Novel early-line combination therapies are needed to improve rate and depth of responses with manageable long-term safety
- We explored a combination of TIL cell therapy and pembrolizumab in patients with ICI-naïve melanoma, HNSCC, and cervical cancer

1. Carlino MS, et al. *Lancet*. 2021;398(10304):1002-14. 2. Ferris RL, et al. *N Engl J Med*. 2016;375(19):1856-67. 3. Hsieh RW, et al. *Frontiers in Oncology*. 2021;11:705614.
4. Liu Y, et al. *Frontiers in Pharmacology*. 2019;10:65. 5. Minion LE, et al. *Gynecologic Oncology*. 2018;148(3):609-21. 6. Sarnaik AA, et al. *J Clin Oncol*. 2021;39(24):2656-66.
7. Jazaeri AA, et al. *J Clin Oncol*. 2019;37 (suppl; abstract 182). 8. Robert C, et al. *N Engl J Med* 2015; 372:2521-2532. 9. Burtness B, et al. *Lancet 2019*; 394:1915-1928.
Abbreviations: HNSCC, head and neck squamous cell carcinoma; ICI, immune checkpoint inhibitors; ORR, objective response rate; TIL, tumor-infiltrating lymphocytes.

Study Design and Eligibility

IOV-COM-202 (NCT03645928): A Phase 2, multicenter study of autologous TIL in patients with solid tumors

→ **Cohort 1A: Unresectable or metastatic melanoma**
Anti–PD-1 / PD-L1 naïve
Lifileucel + pembrolizumab
N=12

→ **Cohort 2A: Advanced, recurrent, or metastatic HNSCC**
Anti–PD-1 / PD-L1 naïve
LN-145 + pembrolizumab
N=19

C-145-04 (NCT03108495): A Phase 2, multicenter study of autologous TIL in patients with recurrent, metastatic, or persistent cervical cancer

→ **Cohort 3: Stage 4b, persistent, recurrent, or metastatic cervical cancer**
No prior therapy (except chemoradiation or surgery for loco-regional disease)
LN-145 + pembrolizumab
N=24

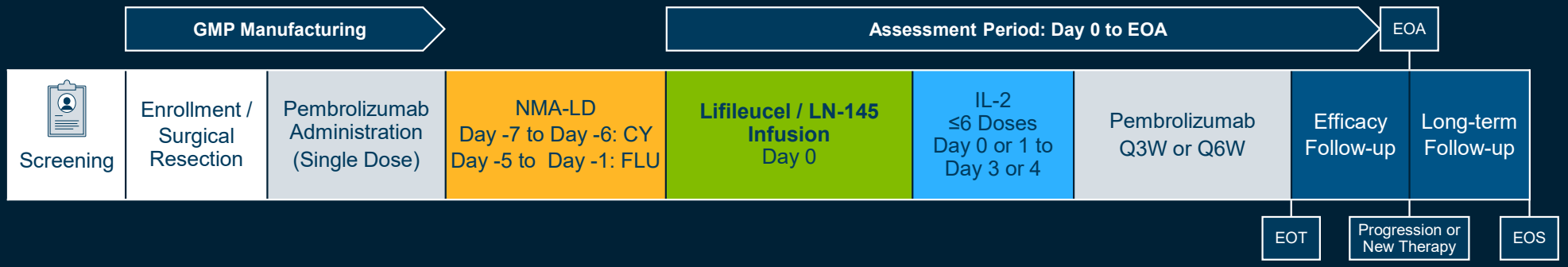
Endpoints	IOV-COM-202	C-145-04
Primary	• ORR • Incidence of Grade ≥3 TEAEs	• Incidence of Grade ≥3 TEAEs
Secondary	• CR rate, DOR, DCR, PFS, OS	• ORR, DOR, DCR, PFS, OS

- **Key eligibility criteria**
  - ≥1 resectable lesion for TIL manufacturing (diameter ≥1.5 cm post-resection)
  - ≥1 measurable lesion for response assessment (by investigator per RECIST v1.1)
  - ECOG performance status 0–1
- **Methods**
  - Patients were enrolled from March 2019 to August 2021 at sites across North America and the EU
  - Concomitant anticancer therapy was not permitted
  - Responses were evaluated per RECIST v1.1
- **Data cutoff:** 22 September 2021

Abbreviations: DCR, disease control rate; DOR, duration of response; ECOG, Eastern Cooperative Oncology Group; HNSCC, head and neck squamous cell carcinoma; ICI, immune checkpoint inhibitor; ORR, objective response rate; PFS, progression-free survival; RECIST, Response Evaluation Criteria in Solid Tumors; TEAEs, treatment-emergent adverse events; TIL, tumor-infiltrating lymphocytes.

Treatment Schema

- Treatment included:
  - Tumor resection for TIL manufacturing
  - 1 dose of pembrolizumab (200 mg* or 400 mg) after tumor resection but before NMA-LD
  - NMA-LD (cyclophosphamide 60 mg/kg daily for 2 doses and fludarabine 25 mg/m2 daily for 5 doses)
  - TIL infusion (1×10^9 to 150×10^9 cells)
  - ≤6 IL-2 doses (600,000 IU/kg) every 8–12 hours (3-24 hr after the completion of TIL infusion)
  - Continued pembrolizumab every 3 weeks (200 mg) or 6 weeks (400 mg) for ≤24 months



*For the single pre–NMA-LD dose of pembrolizumab, 200 mg dose was required in C-145-04; 200 mg or 400 mg dose was permitted in IOV-COM-202.
Abbreviations: CY, cyclophosphamide; EOA, end of assessment; EOS, end of study; EOT, end of treatment; FLU, fludarabine; IL-2, interleukin-2; NMA-LD, nonmyeloablative lymphodepletion; Q3W, every 3 weeks; Q6W, every 6 weeks; TIL, tumor-infiltrating lymphocytes.

Baseline Demographic and Clinical Characteristics (1 of 2)

Characteristic	COM-202 Cohort 1A Melanoma (N=10)	COM-202 Cohort 2A HNSCC (N=18)	C-145-04 Cohort 3 Cervical (N=14)
Sex, n (%)			
Male	8 (80.0)	16 (88.9)	0
Female	2 (20.0)	2 (11.1)	14 (100)
Age, years			
Median	52.0	59.0	46.5
Min, max	34, 68	24, 66	37, 73
Number of prior systemic therapies			
Median	0	1.0	0
Min, max	0, 2	0, 3	0, 0
Prior systemic therapies, n (%)*			
Chemotherapy	3 (30.0)	12 (66.7)	NA
Radiotherapy	0	9 (50.0)	NA
Anti-EGFR monoclonal antibody	0	2 (11.1)	NA
BRAFi / MEKi	2 (20.0)	0	NA
Other†	1 (10.0)	0	NA
Prior therapies, n (%)‡			
Curative/therapeutic surgery	NA	NA	9 (64.3)
Chemo-radiotherapy	NA	NA	7 (50.0)
Radiotherapy only	NA	NA	3 (21.4)

- Baseline patient characteristics were consistent with inclusion criterion of ICI-naïve (melanoma and HNSCC) or treatment-naïve (cervical) disease

*For melanoma and HNSCC only. †Patient received prednisone along with chemotherapy (cyclophosphamide, doxorubicin, vincristine). ‡For cervical only.
Abbreviations: BRAFi/MEKi, BRAF inhibitor and/or MEK inhibitor; HNSCC, head and neck squamous cell carcinoma; ICI, immune checkpoint inhibitor; NA, not applicable.

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Baseline Demographic and Clinical Characteristics (2 of 2)

Characteristic	COM-202 Cohort 1A Melanoma (N=10)		COM-202 Cohort 2A HNSCC (N=18)		C-145-04 Cohort 3 Cervical (N=14)	
Disease Metastasis at Study Entry, n (%)						
	M0	1 (10.0)	M0	3 (16.7)	M0	0
	M1A	2 (20.0)	M1	13 (72.2)	M1	13 (92.9)
	M1C	7 (70.0)				
	Unknown	0	Unknown†	2 (11.1)	Unknown	1 (7.1)
Tumor PD-L1 Expression, n (%)						
PD-L1 negative	TPS <5%	4 (40.0)	CPS <20%	3 (16.7)	CPS <1%	1 (7.1)
PD-L1 positive	TPS ≥5%	5 (50.0)	CPS ≥20%	11 (61.1)	CPS ≥1%	10 (71.4)
Unknown	Missing	1 (10.0)	Missing	4 (22.2)	Missing	3 (21.4)
Target Lesion SOD, mm*						
Mean	99.4		65.9		68.8	
Min, max	(32, 355)		(21, 134)		(16, 143)	
Number of Target and Non-Target Lesions						
Median	4.0		5.5		7.0	
Min, Max	(2, 7)		(1, 8)		(1, 10)	

- Patients had high tumor burden at baseline
- All patients in the cervical cohort with known disease metastasis status at the time of study entry had distant metastases

*SOD determined using RECIST v1.1 (sum of diameters of target lesions in 1 dimension). †Includes 1 patient with MX, as entered by the study site.
Abbreviations: CPS, combined positive score; HNSCC, head and neck squamous cell carcinoma; NA, not applicable; PD-1, programmed cell death protein-1; PD-L1, programmed death ligand-1; SOD, sum of diameters; TPS, tumor proportion score.

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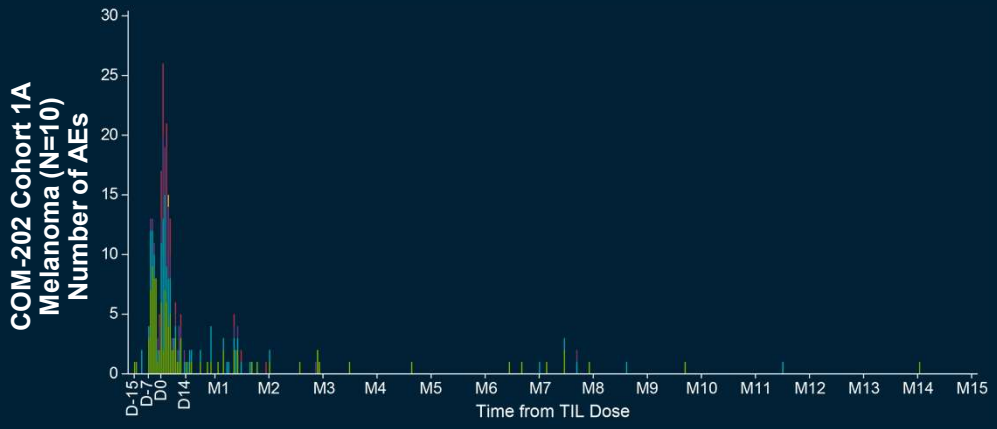
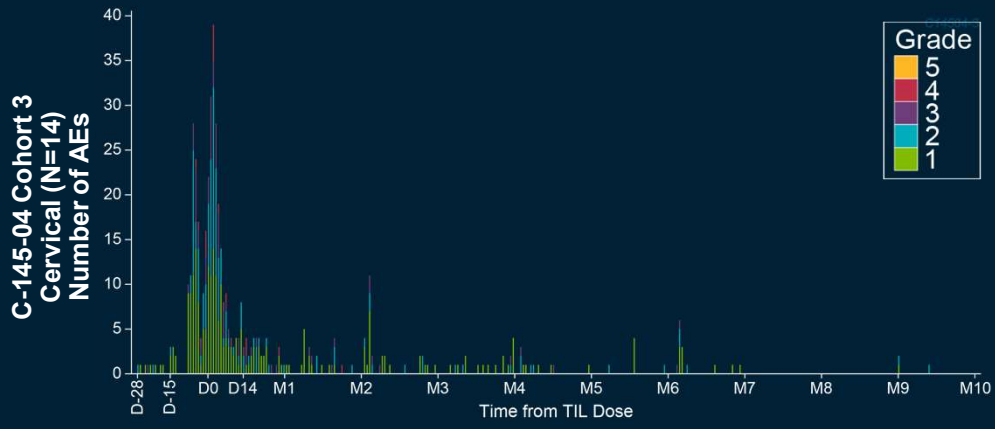
Treatment-Emergent Adverse Events* (≥30%†)

	COM-202 Cohort 1A Melanoma (N=10)			COM-202 Cohort 2A HNSCC (N=18)			C-145-04 Cohort 3 Cervical (N=14)			Total (N=42)		
TEAE, n (%)	**Any Grade**	**Grade 3/4**	**Grade 5‡**	**Any Grade**	**Grade 3/4**	**Grade 5‡**	**Any Grade**	**Grade 3/4**	**Grade 5‡**	**Any Grade**	**Grade 3/4**	**Grade 5‡**
Any event	10 (100)	10 (100)	1 (10.0)	18 (100)	17 (94.4)	4 (22.2)	14 (100)	13 (92.9)	0	42 (100)	40 (95.2)	5 (11.9)
Chills	9 (90.0)	1 (10.0)	0	14 (77.8)	1 (5.6)	0	13 (92.9)	1 (7.1)	0	36 (85.7)	3 (7.1)	0
Pyrexia	9 (90.0)	4 (40.0)	0	15 (83.3)	4 (22.2)	0	9 (64.3)	0	0	33 (78.6)	8 (19.0)	0
Nausea	6 (60.0)	0	0	13 (72.2)	1 (5.6)	0	12 (85.7)	1 (7.1)	0	31 (73.8)	2 (4.8)	0
Fatigue	6 (60.0)	1 (10.0)	0	10 (55.6)	1 (5.6)	0	10 (71.4)	1 (7.1)	0	26 (61.9)	3 (7.1)	0
Hypotension	2 (20.0)	0	0	15 (83.3)	6 (33.3)	0	9 (64.3)	2 (14.3)	0	26 (61.9)	8 (19.0)	0
Thrombocytopenia	9 (90.0)	7 (70.0)	0	12 (66.7)	10 (55.6)	0	5 (35.7)	5 (35.7)	0	26 (61.9)	22 (52.4)	0
Anemia	4 (40.0)	3 (30.0)	0	12 (66.7)	11 (61.1)	0	9 (64.3)	7 (50.0)	0	25 (59.5)	21 (50.0)	0
Vomiting	7 (70.0)	0	0	5 (27.8)	0	0	11 (78.6)	2 (14.3)	0	23 (54.8)	2 (4.8)	0
Dyspnea	4 (40.0)	0	0	8 (44.4)	1 (5.6)	0	8 (57.1)	0	0	20 (47.6)	1 (2.4)	0
Diarrhea	2 (20.0)	0	0	12 (66.7)	1 (5.6)	0	4 (28.6)	0	0	18 (42.9)	1 (2.4)	0
Neutropenia	4 (40.0)	4 (40.0)	0	9 (50.0)	9 (50.0)	0	4 (28.6)	4 (28.6)	0	17 (40.5)	17 (40.5)	0
Alopecia	4 (40.0)	0	0	3 (16.7)	0	0	9 (64.3)	0	0	16 (38.1)	0	0
Decreased appetite	3 (30.0)	0	0	6 (33.3)	1 (5.6)	0	7 (50.0)	0	0	16 (38.1)	1 (2.4)	0
Febrile neutropenia	6 (60.0)	6 (60.0)	0	5 (27.8)	5 (27.8)	0	5 (35.7)	5 (35.7)	0	16 (38.1)	16 (38.1)	0
Constipation	2 (20.0)	0	0	4 (22.2)	0	0	9 (64.3)	0	0	15 (35.7)	0	0
Cough	4 (40.0)	0	0	7 (38.9)	0	0	4 (28.6)	0	0	15 (35.7)	0	0
Headache	3 (30.0)	0	0	4 (22.2)	0	0	8 (57.1)	1 (7.1)	0	15 (35.7)	1 (2.4)	0
Hypertension	5 (50.0)	3 (30.0)	0	6 (33.3)	4 (22.2)	0	4 (28.6)	1 (7.1)	0	15 (35.7)	8 (19.0)	0
Insomnia	2 (20.0)	0	0	7 (38.9)	0	0	4 (28.6)	0	0	13 (31.0)	0	0
Tachycardia	2 (20.0)	0	0	9 (50.0)	1 (5.6)	0	2 (14.3)	0	0	13 (31.0)	1 (2.4)	0

*TEAEs include AEs that occur from the earlier of the first dose of pembrolizumab or TIL infusion, up to 30 days after the later of the last dose of pembrolizumab or TIL infusion or start of a new anticancer therapy. † In total population. ‡Grade 5 events included 2 events of respiratory failure (COM-202 Cohort 2A), 1 tumor hemorrhage (COM-202 Cohort 2A), 1 sepsis (COM-202 Cohort 1A), and 1 septic shock (COM-202 Cohort 2A); all were assessed as not related or not likely related to TIL or pembrolizumab, 2 were related to NMA-LD, and 1 was related to NMA-LD and IL-2.
Abbreviations: AE, adverse event; HNSCC, head and neck squamous cell carcinoma; IL-2, interleukin-2; NMA-LD, nonmyeloablative lymphodepletion; TEAE, treatment-emergent adverse event; TIL, tumor-infiltrating lymphocytes.

Treatment-Emergent Adverse Events* Over Time





- The TEAE profile was consistent with the underlying diseases and known profiles of pembrolizumab, NMA-LD, and IL-2
- Most TEAEs occurred prior to or within the first 2 weeks after TIL infusion
- Median number of IL-2 doses:
  - Melanoma, 5.5
  - HNSCC, 5.0
  - Cervical, 5.5

*TEAEs include AEs that occur from the earlier of the first dose of pembrolizumab or TIL infusion, up to 30 days after the later of the last dose of pembrolizumab or TIL infusion or start of a new anticancer therapy.
Abbreviations: AE, adverse event; HNSCC, head and neck squamous cell carcinoma; IL-2, interleukin-2; NMA-LD, nonmyeloablative lymphodepletion; TEAE, treatment-emergent adverse event; TIL, tumor-infiltrating lymphocytes.

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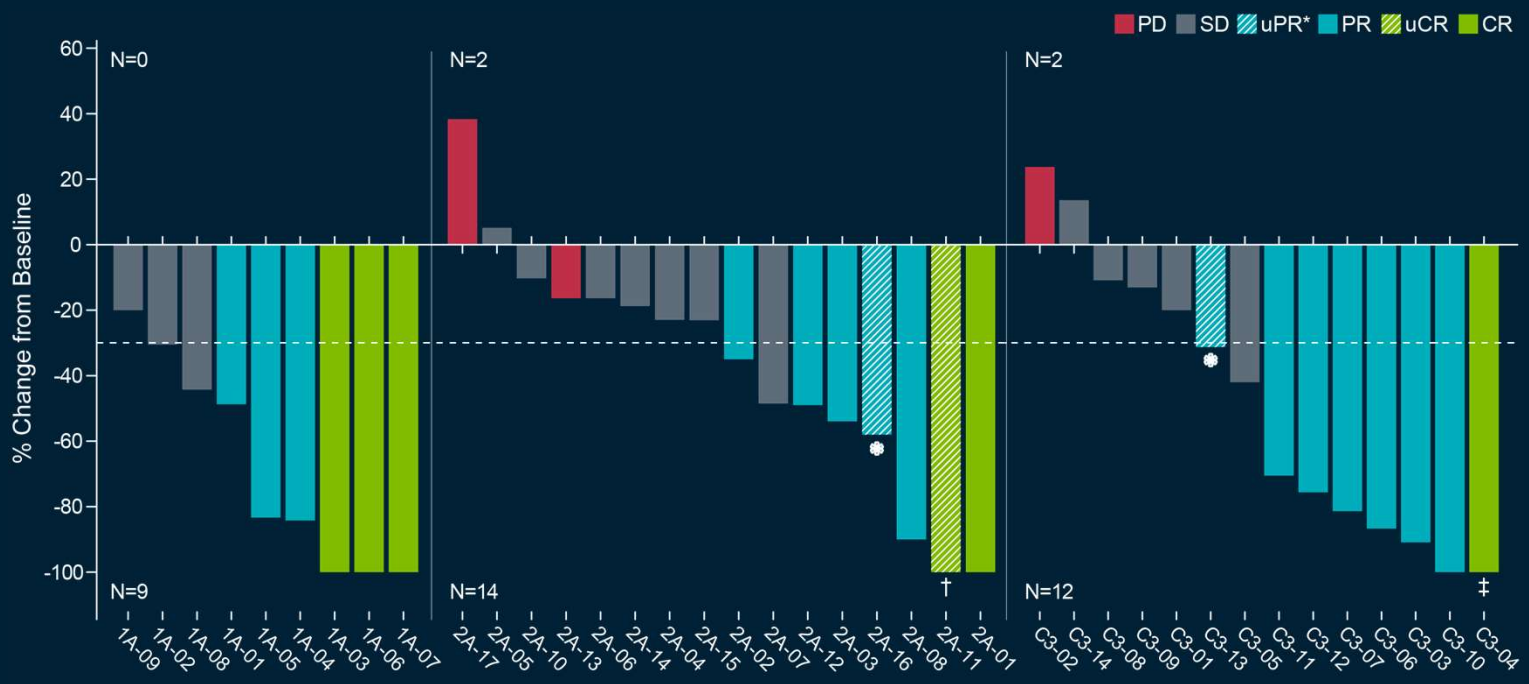
Objective Response Rate

	COM-202 Cohort 1A Melanoma (N=10)		COM-202 Cohort 2A HNSCC (N=18)		C-145-04 Cohort 3 Cervical (N=14)	
Response	**n/N**	**% (95% CI)**	**n/N**	**% (95% CI)**	**n/N**	**% (95% CI)**
Full-Analysis Set (FAS)*						
ORR	6/10	**60.0** (26.2, 87.8)	7/18	**38.9** (17.3, 64.3)	8/14	**57.1** (28.9, 82.3)
CR	3/10	30.0	1/18	5.6	1/14	7.1
uCR†	0/10	0	1/18	5.6	0/14	0
PR	3/10	30.0	4/18	22.2	6/14	42.9
uPR‡	0/10	0	1/18	5.6	1/14	7.1
SD	3/10	30.0	7/18	38.9	5/14	35.7
PD	0/10	0	2/18	11.1	1/14	7.1
DCR§	9/10	90.0 (55.5, 99.7)	14/18	77.8 (52.4, 93.6)	13/14	92.9 (66.1, 99.8)
NE€	1/10	10.0	2/18	11.1	0/14	0
Efficacy-Evaluable Set*						
ORR	6/9	**66.7** (29.9, 92.5)	7/16	**43.8** (19.8, 70.1)	8/14	**57.1** (28.9, 82.3)
DCR‡	9/9	100 (66.4, 100)	14/16	87.5 (61.7, 98.4)	13/14	92.9 (66.1, 99.8)

- ORR (FAS):
  - Melanoma, 60.0%
    - Includes 3 (30.0%) CR
  - HNSCC, 38.9%
  - Cervical, 57.1%
- Median number of TIL cells infused:
  - Melanoma, 21.3 × 10^9
  - HNSCC, 15.7 × 10^9
  - Cervical, 17.9 × 10^9

*Full-analysis set, all patients who received TIL and pembrolizumab; efficacy-evaluable set, all FAS patients with ≥1 efficacy assessment. †At the time of the datacut, patient had not yet had confirmatory assessment after initial CR but was a confirmed PR. ‡At the time of the datacut, patient had a first PR assessment, but had not yet reached the confirmatory assessment. §DCR was defined as CR+PR+SD.
€Excluded from efficacy-evaluable set due to death prior to first assessment.
Abbreviations: CR, complete response; DCR, disease control rate; FAS, full-analysis set; HNSCC, head and neck squamous cell carcinoma; NE, not evaluable; ORR, objective response rate; PR, partial response; SD, stable disease; uCR, unconfirmed complete response; uPR, unconfirmed partial response.

Best Overall Response



COM-202 Cohort 1A Melanoma

COM-202 Cohort 2A HNSCC

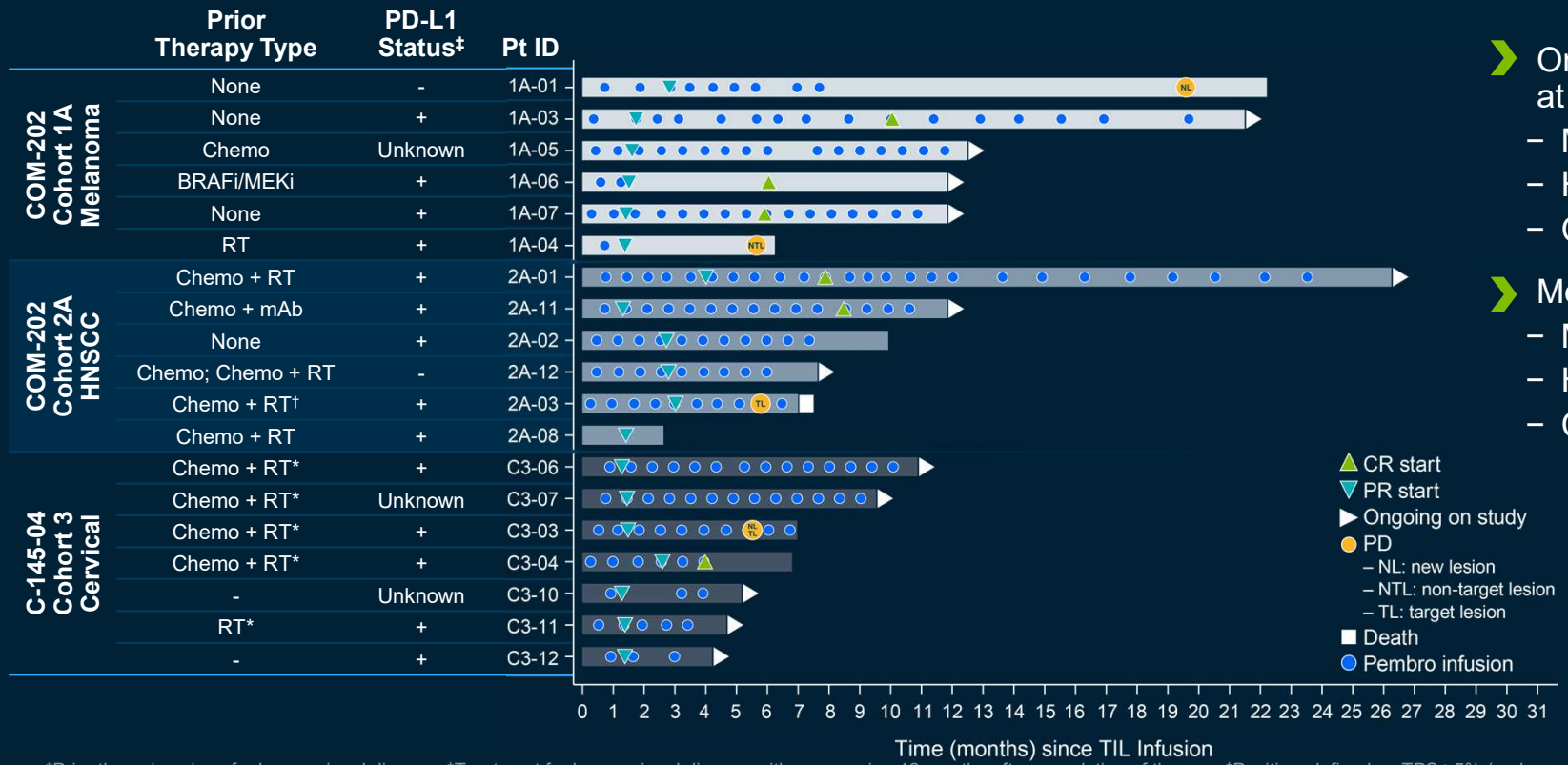
C-145-04 Cohort 3 Cervical

- Nearly all efficacy-evaluable patients experienced a reduction in tumor burden:
  - Melanoma, 100%
  - HNSCC, 87.5%
  - Cervical, 85.7%

*Patients 2A-16 and C3-13 had a first PR assessment but had not reached the confirmatory assessment at the time of the datacut. †Patient 2A-11 had a first CR assessment but had not reached the confirmatory assessment at the time of the datacut but had previously achieved a PR and is included as a confirmed responder per RECIST 1.1. ‡For patient C3-04, –100% change from baseline includes lymph node lesions that resolved to <10 mm.

Abbreviations: CR, complete response; HNSCC, head and neck squamous cell carcinoma; PD, progressive disease; PR, partial response; SD, stable disease; uCR, unconfirmed complete response; uPR, unconfirmed partial response.

Time to Response (PR or Better)



- Ongoing responses at data cutoff:
  - Melanoma, 66.7% (4/6)
  - HNSCC, 50.0% (3/6)
  - Cervical, 71.4% (5/7)
- Median study follow-up:§
  - Melanoma, 11.5 months
  - HNSCC, 7.8 months
  - Cervical, 7.6 months

*Prior therapies given for loco-regional disease. †Treatment for loco-regional disease with progression 12 months after completion of therapy. ‡Positive, defined as TPS ≥5% (melanoma), CPS ≥20% (HNSCC), CPS ≥1% (cervical). §Based on overall survival data using the reverse Kaplan-Meier method.
Each bar is presented for each patient starting from date of TIL infusion up to date of new anti-cancer therapy, end of assessment, death, or data cutoff date, whichever occurs earlier.
Chemo, chemotherapy; CPS, combined positive score; CR, complete response; PD-L1, programmed death ligand-1; pembro, pembrolizumab; PR, partial response; RT, radiotherapy; TIL, tumor-infiltrating lymphocytes; TPS, tumor proportion score.

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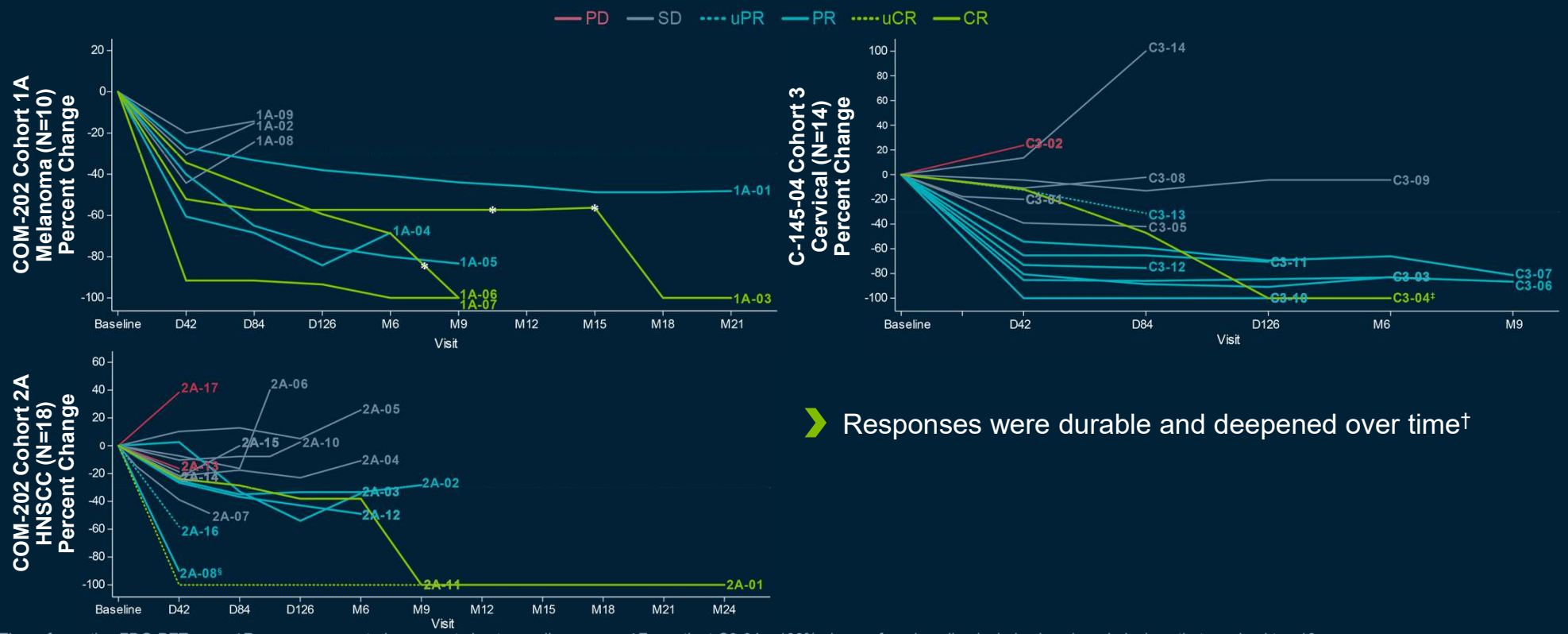
Percentage Change from Baseline in Target Lesion Sum of Diameters



- Responses were durable and deepened over time†

*Time of negative FDG-PET scan. †Response presented represents best overall response. ‡For patient C3-04, –100% change from baseline includes lymph node lesions that resolved to <10 mm.
§Patient 2A-08 is reported as a PR at Day 84 by Investigator although the target lesion is not possible to be evaluated due to comorbid conditions.
Abbreviations: CR, complete response; FDG-PET, fluorodeoxyglucose-positron emission tomography; HNSCC, head and neck squamous cell carcinoma; PD, progressive disease; PR, partial response; SD, stable disease; SOD, sum of diameters; uCR, unconfirmed complete response; uPR, unconfirmed partial response.

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Conclusions

- In the ICI-naïve setting, TIL + pembrolizumab produced encouraging efficacy with expected safety in patients with advanced melanoma, HNSCC, and cervical cancer
  - Nearly all efficacy-evaluable patients (86%–100%) experienced reduction in tumor burden
  - Objective responses (per RECIST v1.1 in FAS) were observed in 60% of patients with melanoma, 39% of patients with HNSCC, and 57% of patients with cervical cancer, rates that are similar to prior reports for the combination[1,2]
    - Includes a 30% CR rate in the melanoma cohort
- TIL cell therapy with lifileucel and LN-145 has demonstrated efficacy and safety in multiple solid tumor types and lines of therapy, both as monotherapy and in combination with ICI,[1–4] strengthening the promise of this potentially best-in-class IO combination for patients with advanced cancer
- The combination of TIL + ICI warrants continued investigation in patients with advanced cancer in ongoing studies IOV-COM-202 (NCT03645928) and C-145-04 (NCT03108495)

1. Thomas SS, et al. J Clin Oncol. 2021;39 (suppl; abstract 9537). 2. Jimeno A, et al. J Immunother Cancer. 2020;8 (suppl 3; abstract 353). 3. Sarnaik AA, et al. J Clin Oncol. 2021; doi: 10.1200/JCO.21.00612.
4. Jazaeri AA, et al. J Clin Oncol. 2019;37 (suppl; abstract 182).
Abbreviations: DOR, duration of response; FAS, full-analysis set; HNSCC, head and neck squamous cell carcinoma; ICI, immune checkpoint inhibitor; IO, immuno-oncology; ORR, objective response rate; TIL, tumor-infiltrating lymphocytes

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ADVANCING IMMUNO-ONCOLOGY

Panel Discussion

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Q&A

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Thank You!