

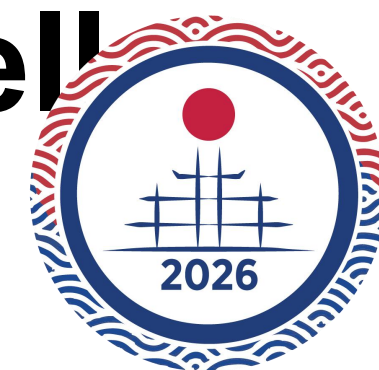


EP09.05: Drug-Eluting Transarterial Chemoembolization plus Anlotinib as First-Line Therapy for Non-Small Cell Lung Cancer in the Elderly: A Multicenter Retrospective Study

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INTRODUCTION

- Non-small cell lung cancer (NSCLC) constitutes ~85% of newly diagnosed lung cancers worldwide; the elderly are the primary population — about 30–40% of patients are over 70 years old.^{1,2}
- Standard options have limitations in the elderly: conventional chemoradiotherapy shows limited efficacy and high toxicity³; immunotherapy is hampered by immune senescence and serious immune-related events⁴; targeted therapy applies only to the small driver gene–positive subset.⁵
- Drug-eluting transarterial chemoembolization (DE-TACE) delivers sustained intratumoral chemotherapy while blocking tumor blood supply; retrospective series reported ORR 21.6%–80%, DCR 66.7%–100%, mPFS 4.3–8.4 and mOS 12.6–28.5 months.^{6–8}
- Anlotinib, a multi-target TKI (VEGFR/FGFR/PDGFR)⁹, improved survival in refractory NSCLC (ALTER0303: mPFS 5.4 vs 1.4 mo; mOS 9.6 vs 6.3 mo)¹⁰ and synergizes with TACE by blocking hypoxia-induced VEGF upregulation.¹¹

Objective: To investigate the safety and effectiveness of DE-TACE plus anlotinib as first-line therapy for NSCLC in the elderly (≥75 years).

METHODS

Design: Multicenter retrospective study (Jan 2018 – Dec 2023) in four centers in China; Ethics Committee approval #20220613; informed consent waived.

Patients: Age ≥75 years; unresectable or refusal of surgery; driver gene–negative; refusal of or inability to tolerate radiotherapy, chemotherapy and immunotherapy; ≥1 measurable lesion; pathologically confirmed NSCLC (Figure 1).

Treatment:

- DE-TACE:** cisplatin 75 mg/m² plus gemcitabine 600 mg/m² infused over 30 min via tumor-feeding arteries (super-selective 1.9F microcatheter, DSA + cone-beam CT guidance), then embolization with gemcitabine-loaded CalliSpheres beads (400 mg; 300–500 µm); repeated as needed per 3-week CT.
- Anlotinib:** 12 mg once daily from 1 week after DE-TACE, 2 weeks on / 1 week off (21-day cycle); dose reduced stepwise to 10 mg then 8 mg for intolerance.

Assessments: Response per RECIST v1.1¹² (two independent radiologists) at 1, 3 and 6 months; AEs per CTCAE v5.0¹³; complications per SIR standards¹⁴; Kaplan–Meier with log-rank test; multivariate Cox regression; R v4.3.1, two-tailed *P* < 0.05.

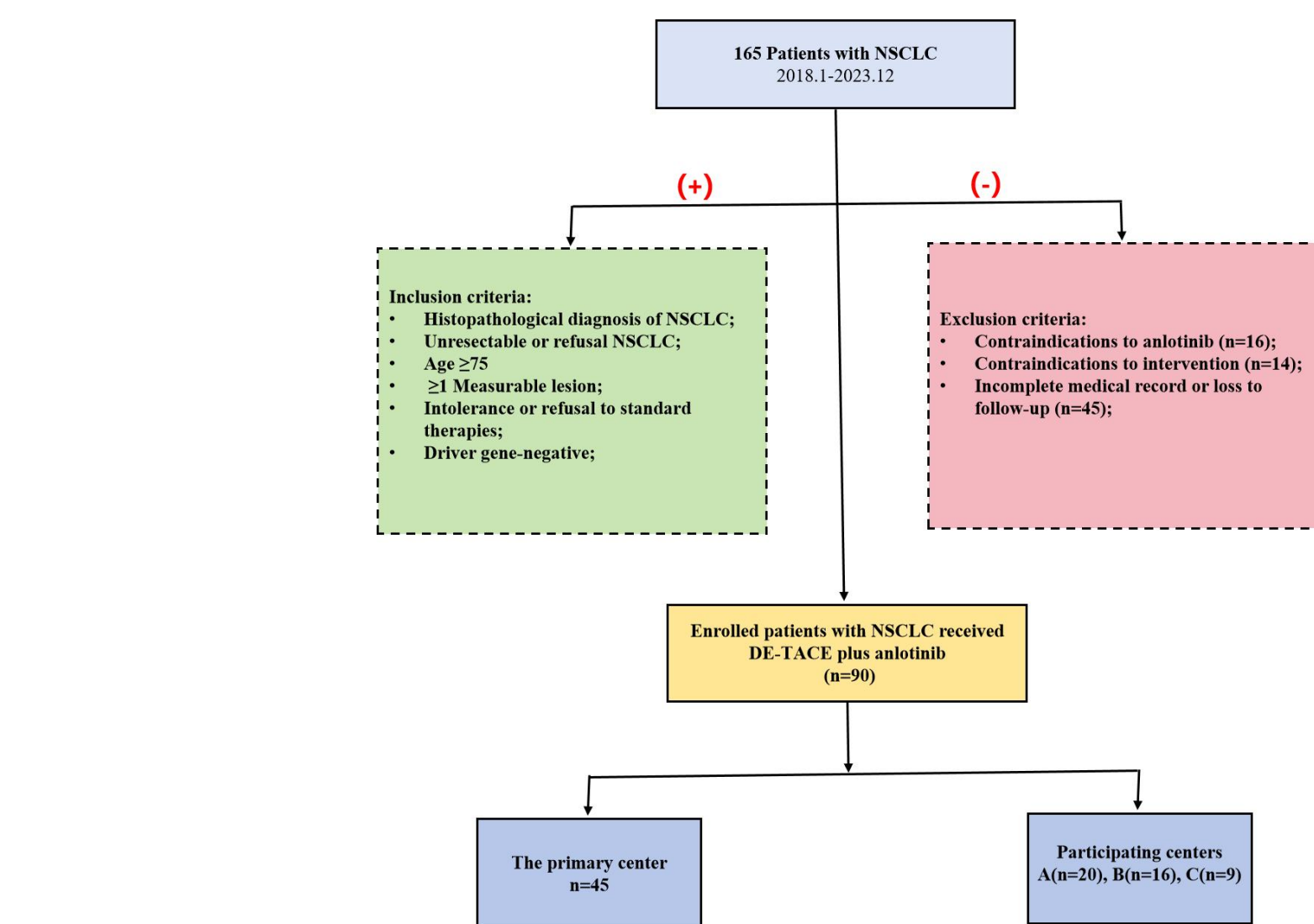


Figure 1. Flowchart of the study (165 screened; 90 enrolled and treated).

DISCUSSION AND CONCLUSION

Actionable Take Away Message

- In patients aged ≥75 years with driver gene–negative NSCLC ineligible for standard therapies, first-line DE-TACE plus anlotinib achieved median OS of **25.6 months** and median PFS of **8.6 months**, with 100% technical success and 1-month ORR of 63.3%.
- Efficacy surpasses reported anlotinib monotherapy¹⁵; synergy arises from potent local tumor reduction plus blockade of post-embolization hypoxia-induced VEGF upregulation.¹¹
- Grade ≥3 treatment-emergent AEs occurred in only 18.9%, with no spinal cord injury or cerebral embolism.

Limitations

- Retrospective, single-arm design — selection bias possible.
- Sample size may not detect all potential differences or adverse events.
- Gemcitabine-based regimen; generalizability to other regimens unknown.

Future Direction for Research

- Larger prospective studies with comparator arms are needed for validation.

Conclusion

- DE-TACE plus anlotinib is a promising, effective and safe first-line option for elderly NSCLC patients ineligible for radiotherapy, chemotherapy or surgery.

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RESULTS

90 patients enrolled (45 primary center; 20, 16, 9 from three external centers); DE-TACE technical success **100%**; median follow-up **26 months**.

Table 1. Baseline patient characteristics (N = 90)

Characteristic	Patients (N = 90)
Age, years, mean (range)	80 (75–91)
Male, n (%)	74 (82.2)
Stage III / IV, n (%)	52 (57.8) / 38 (42.2)
Squamous cell carcinoma, n (%)	50 (55.6)
Adenocarcinoma, n (%)	40 (44.4)
DE-TACE sessions, mean ± SD	1.92 ± 0.585
Primary / external centers, n	45 / 20 / 16 / 9

Table 2. Tumor response over time (RECIST v1.1)

Endpoint	1 month	3 months	6 months
ORR, % (n/N)	63.3 (57/90)	55.6 (50/90)	46.7 (42/90)
DCR, % (n/N)	91.1 (82/90)	87.8 (79/90)	74.4 (67/90)
PD, % (n/N)	8.9 (8/90)	NR	25.5 (23/90)

Survival (26-month median follow-up): median OS **25.6 months** (95% CI 21.1–29.7; Figure 3B); median PFS **8.6 months** (95% CI 7.8–9.3; Figure 3A).

Table 3. Treatment-emergent adverse events (N = 90, CTCAE v5.0)

Adverse event	Any grade, n (%)	Grade ≥3, n (%)
Any treatment-emergent AE	90 (100)	17 (18.9)
Hypertension	52 (57.8)	13 (14.4)
Hand-foot syndrome	38 (42.2)	4 (4.4)
Hypertriglyceridemia	33 (36.7)	4 (4.4)
Proteinuria	31 (34.4)	2 (2.2)
Diarrhea	30 (33.3)	1 (1.1)
Nausea or vomiting*	41 (45.6)	0 (0)
Fatigue*	22 (24.4)	0 (0)
Chest pain*	21 (23.3)	0 (0)
Fever*	19 (21.1)	0 (0)
Bone marrow suppression*	10 (11.1)	0 (0)

**DE-TACE–related complications, all grade ≤2; no spinal cord injury or cerebral embolism occurred.*

Figure 2. Treatment response in a 78-year-old male (stage IIIA SCC).

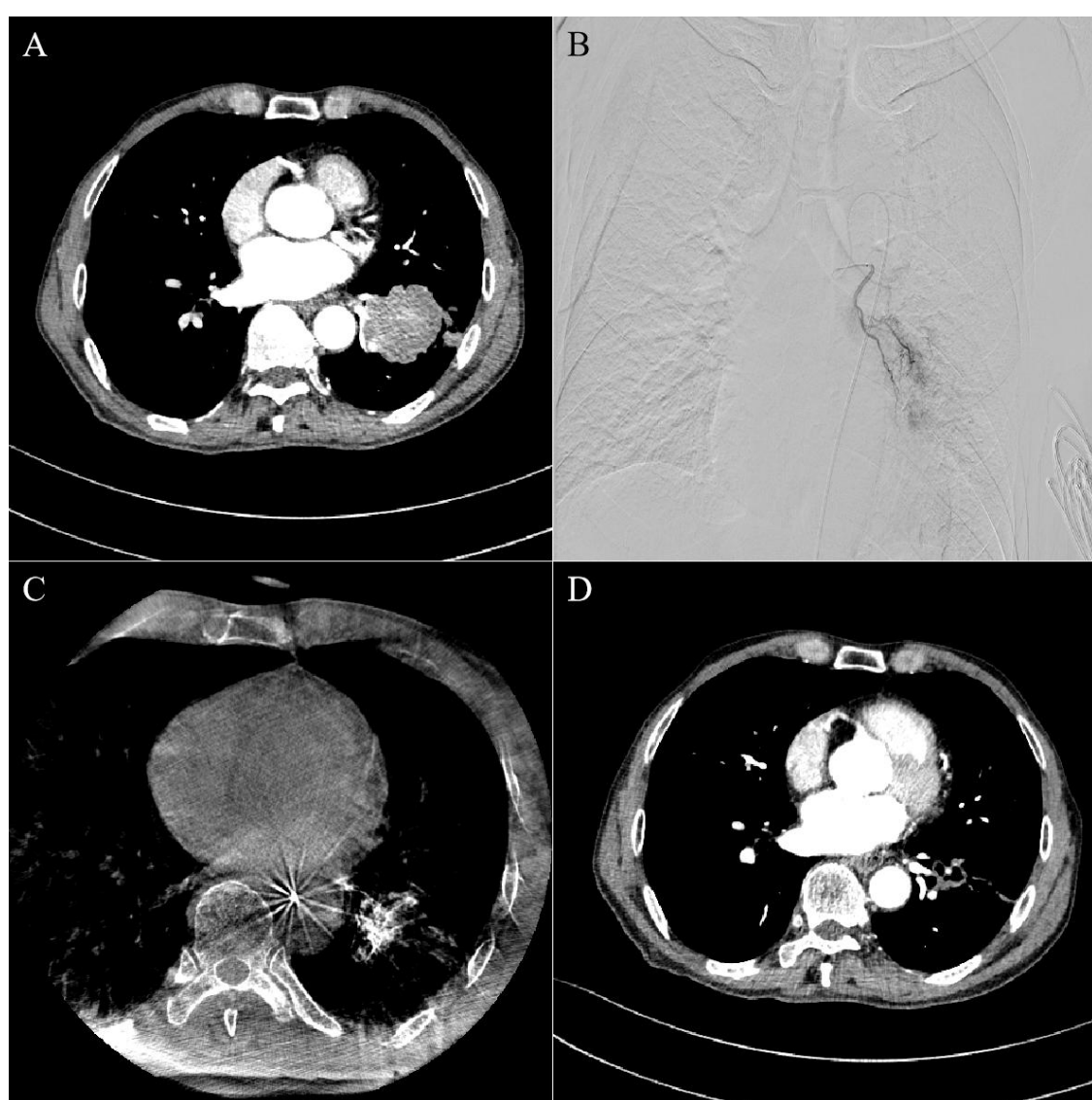


Figure 3. Kaplan–Meier curves of PFS (A) and OS (B).

