



Efficacy and Safety of Induction Chemoimmunotherapy Followed by Carbon Ion Radiotherapy in Unresectable Locally Advanced Non–Small Cell Lung Cancer (HZCIRT-Lung 001)

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INTRODUCTION

The PACIFIC regimen is the current standard of care for unresectable locally advanced non–small cell lung cancer (NSCLC), yet distant metastasis and locoregional progression remain major challenges.

Induction chemoimmunotherapy for 2–4 cycles before radiotherapy may enhance systemic immune surveillance against micrometastatic disease, but treatment-related toxicity remains a concern.

Carbon ion radiotherapy (CIRT) combines highly conformal dose distribution with enhanced biological effectiveness, potentially improving tumor control while sparing normal tissues. We therefore hypothesized that induction chemoimmunotherapy followed by CIRT and consolidation immunotherapy could provide an effective treatment strategy for unresectable locally advanced NSCLC.

METHODS

Design: Single-arm, Phase II trial

Eligibility criteria:

- Aged 18 to 75
- Histologically confirmed NSCLC
- Stage III (AJCC 8th)
- Without EGFR, ALK or ROS-1 mutation

Treatment:

- 2–4 cycles of platinum-based doublet chemotherapy combined with anti-PD-1/PD-L1 immunotherapy
- CIRT
- Consolidation anti-PD-1/PD-L1 immunotherapy

Endpoint:

- **Primary:** 1-year progression-free survival (PFS) rate, the incidence of grade ≥ 3 treatment-related adverse events
- **Secondary:** overall survival (OS)

DISCUSSION AND CONCLUSION

- This is the **first** prospective study to evaluate induction chemoimmunotherapy followed by CIRT and consolidation immunotherapy in unresectable locally advanced NSCLC. Clinical trial information: NCT07035860.
- The preliminary results demonstrate **promising efficacy** and a **favorable safety** profile for this combined modality approach.
- Further studies with larger sample sizes and longer follow-up are warranted to validate these findings.

REFERENCES & ACKNOWLEDGEMENTS

References:

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Disclosure:

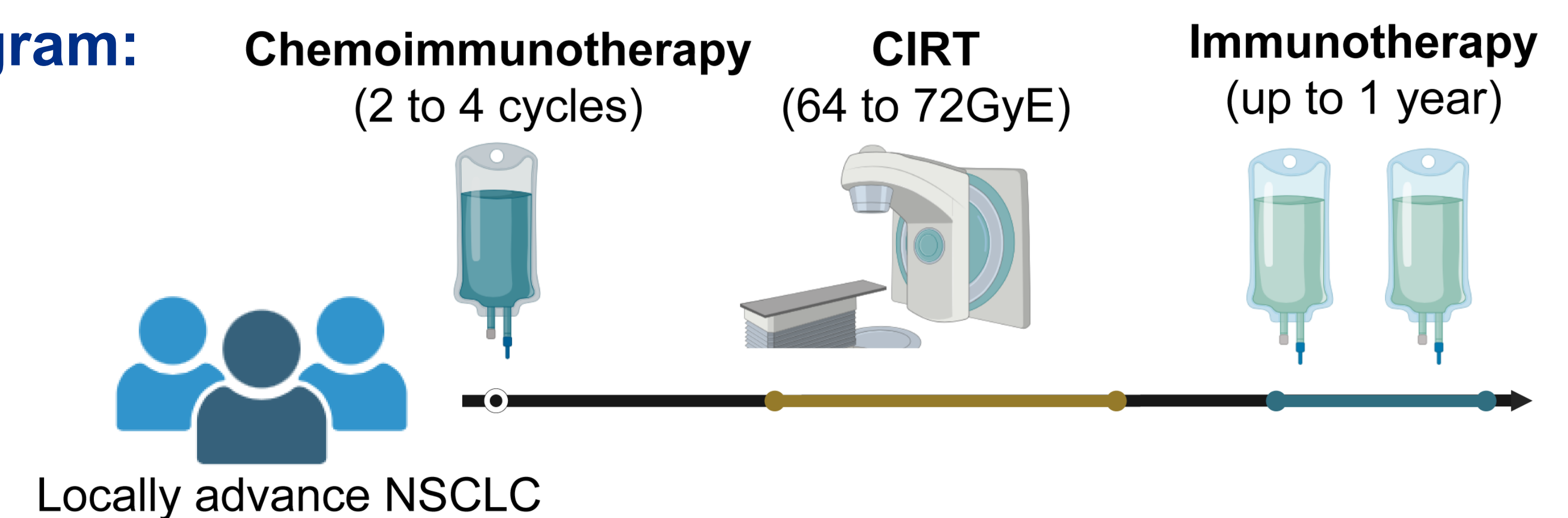
The authors declare no conflicts of interest.

AI statement:

No artificial intelligence tools were used in the data analysis or poster preparation.

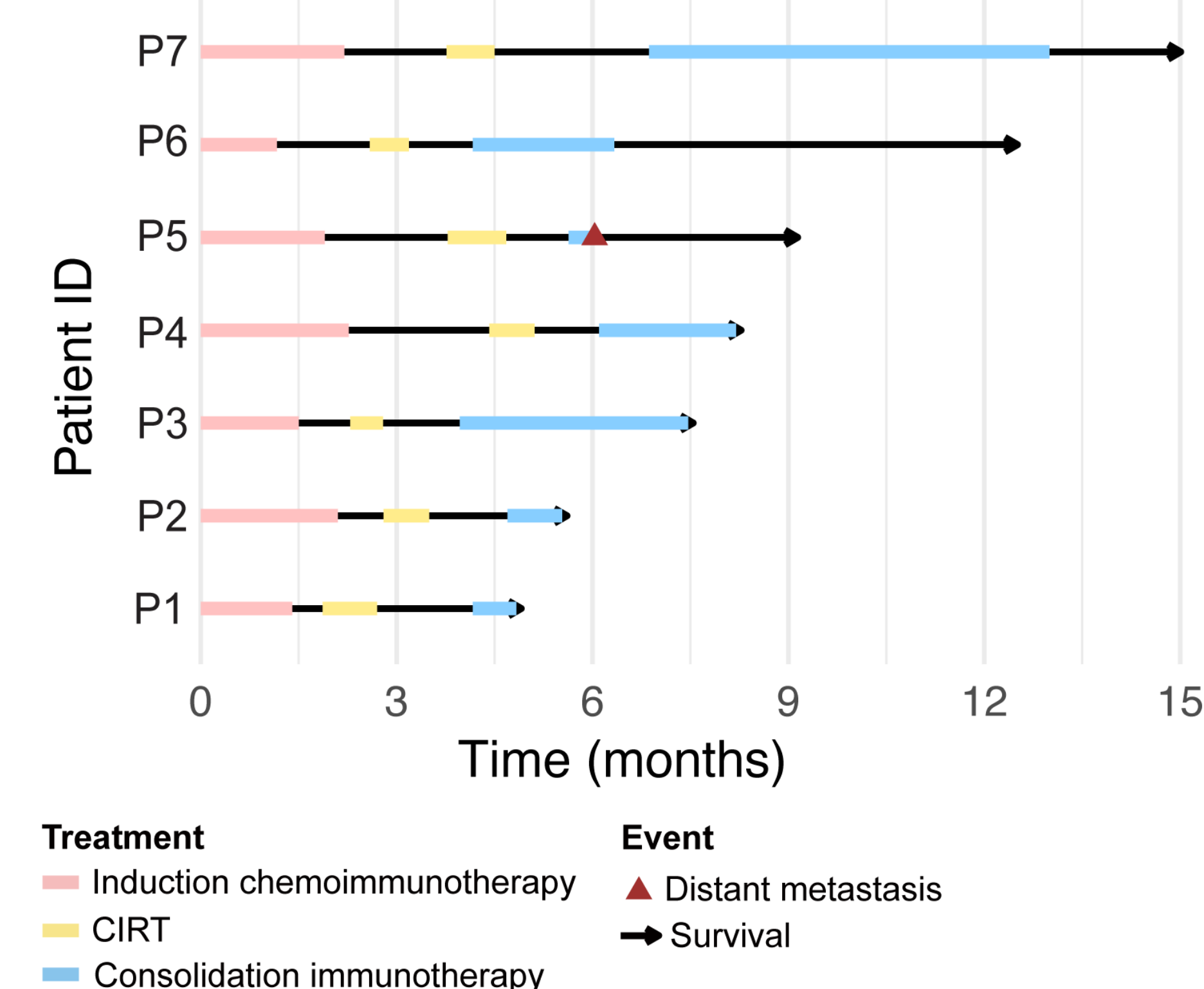
RESULTS

Flow diagram:



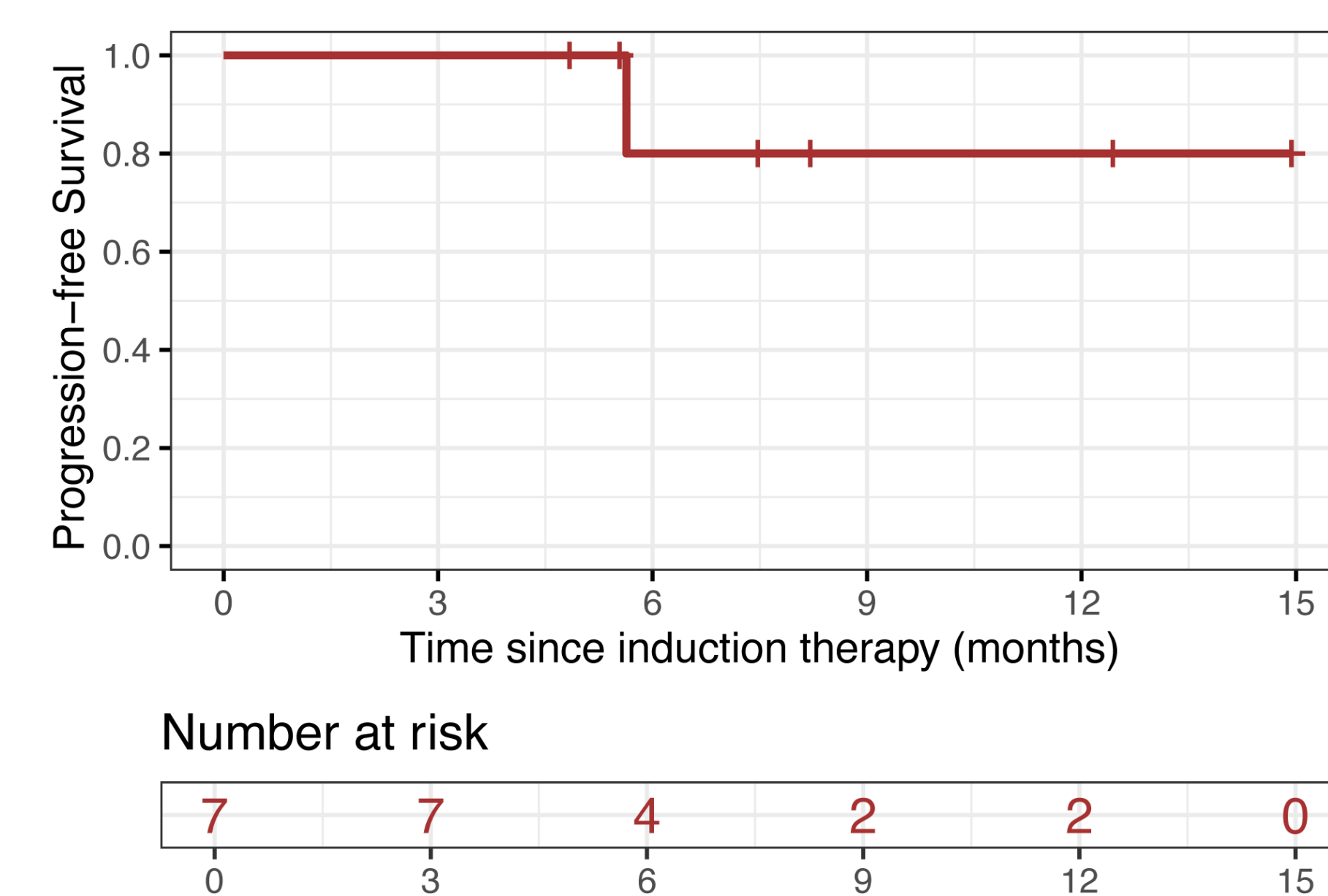
Follow-up:

Seven patients had been enrolled, with a median follow-up of 8.2 months



Efficacy:

The 1-year PFS rate was 80%, and the 1-year OS rate was 100%



Toxicity:

No grade 3–5 treatment-related adverse events

Adverse event, No.(%)	Grade 1	Grade 2	Grade 3-5
Leukopenia	3 (43)	0	0
Lymphopenia	5 (71)	1 (14)	0
Anemia	4 (57)	2 (29)	0
Thrombocytopenia	4 (57)	0	0
Elevated ALT/AST	2 (29)	1 (14)	0
Esophagitis	1 (14)	1 (14)	0
Pneumonitis	1 (14)	1 (14)	0
Rash	0	2 (29)	0
Hypothyroidism	1 (14)	2 (29)	0
Elevated blood glucose	2 (29)	1 (14)	0

