

INTRODUCTION

Clinical context

For patients with stage III-IV NSCLC who are not surgical candidates, thoracic progression can cause major symptoms and complications even when systemic disease dominates survival.

Evidence gap

Real-world benefit of moderately hypofractionated radiotherapy (HypoRT) versus no radiotherapy remains uncertain because treatment selection creates substantial baseline imbalance.

Objective

To compare overall survival (OS) and local control (LC) after propensity score-based confounding adjustment.

METHODS

Design: Single-center retrospective cohort; NSCLC diagnosed 2017-2020; follow-up through December 2024.

Treatment: IG-IMRT, 3.0 Gy x 20 fractions (60 Gy) versus no radiotherapy.

Adjustment: 1:1 nearest-neighbor PSM (caliper 0.02); overlap weighting for the imaging-complete LC subset.

Analyses: Kaplan-Meier, stratified/weighted Cox, and Fine-Gray competing-risk models.

Stage III-IV NSCLC
Single-center cohort

1:1 propensity score matching

OS cohort: 48 HypoRT + 48 controls
(n = 96)

Imaging-complete LC subset
(n = 58; overlap-weighted)

Primary endpoint: OS | Secondary endpoint: LC

DISCUSSION AND CONCLUSION

Key interpretation

HypoRT did not significantly improve OS in the matched cohort (HR=1.12; P=0.739).

Fine-Gray analysis indicated a 57% lower subdistribution hazard of local progression (sHR=0.434; P=0.050).

Clinical implication

Moderate hypofractionation may be most valuable for thoracic disease control when a prolonged conventional course is impractical.

Limitations

Single center; modest sample; LC restricted to 58 patients; heterogeneous systemic therapy; toxicity not evaluated.

Next step

Prospective validation and rational integration with contemporary systemic therapy.

REFERENCES & ACKNOWLEDGEMENTS

Selected references

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Artificial Intelligence (AI) Use Disclaimer

Deepseek was used to assist with English-language refinement, content condensation, and poster-layout drafting. It was not used to generate, modify, or analyze the study data.

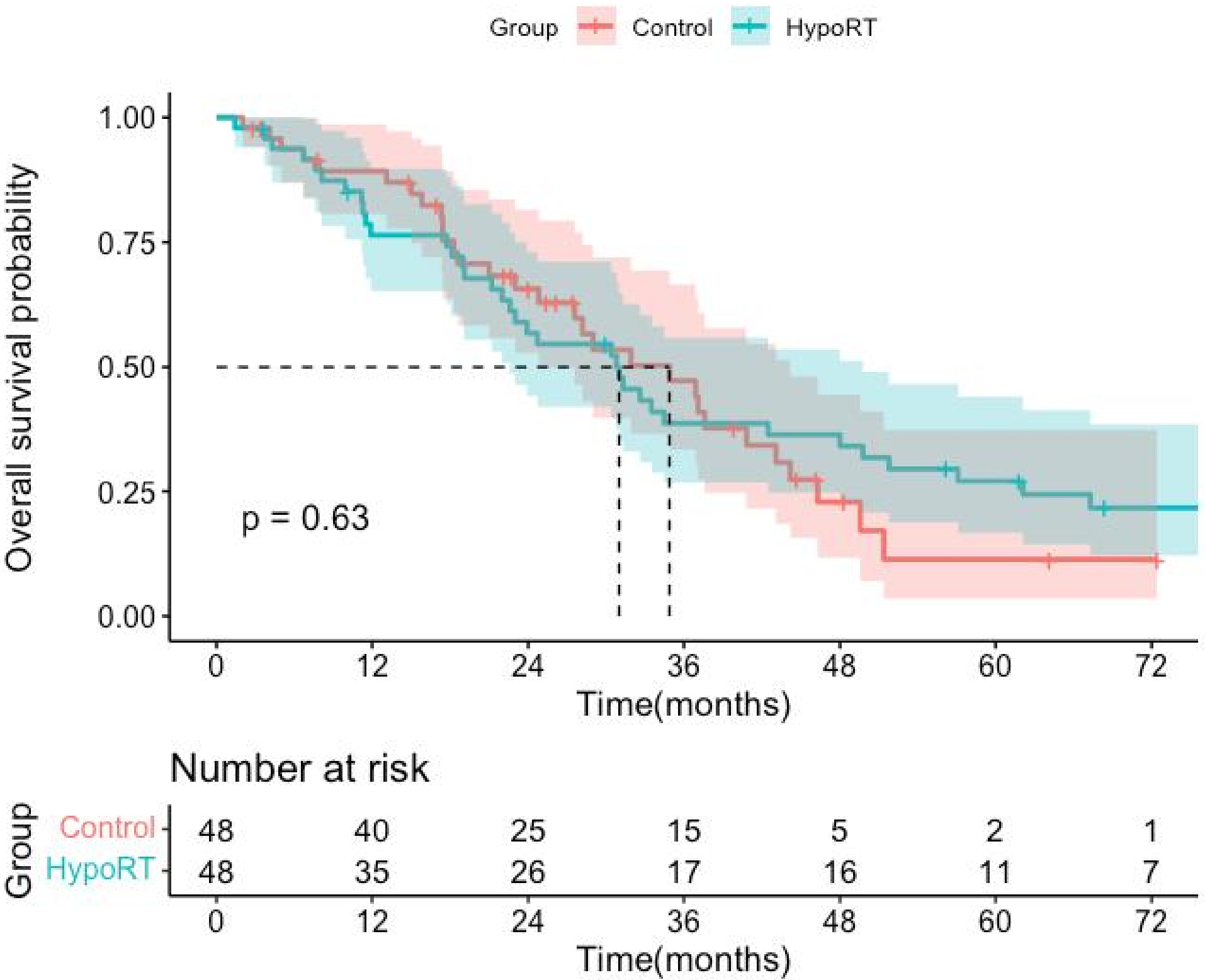
All scientific content, numerical results, interpretations, references, and final wording were reviewed and approved by the authors, who retain full responsibility for the presentation.

RESULTS

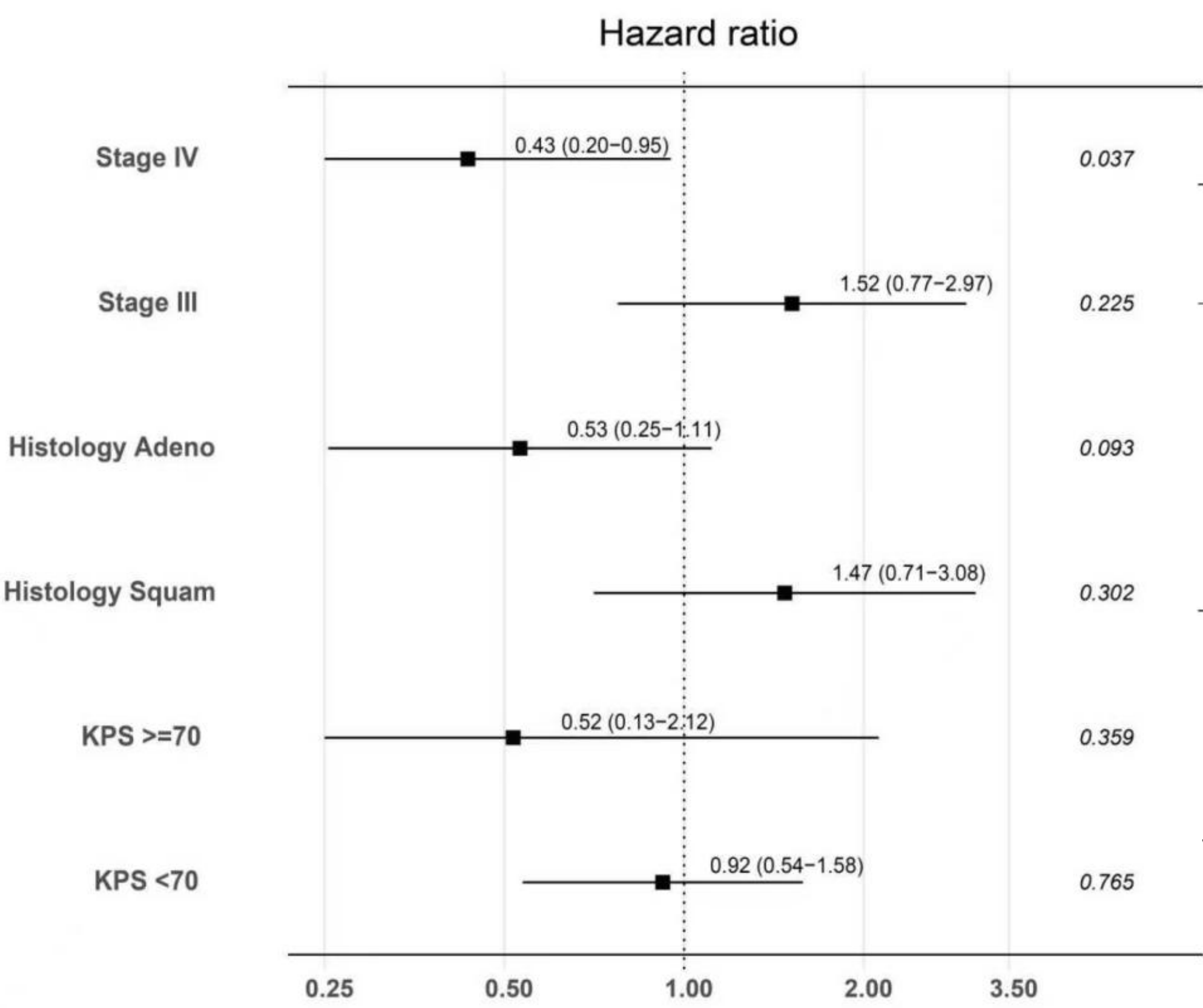
HypoRT improved local control, but not overall survival

OS HR=1.12 (95% CI:0.58-2.15), P=0.739 Local progression sHR=0.434 (95% CI:0.189-0.998), P=0.050

Exploratory stage IV subgroup: mortality HR=0.43 (95% CI:0.20-0.95), P=0.037; requires external validation.



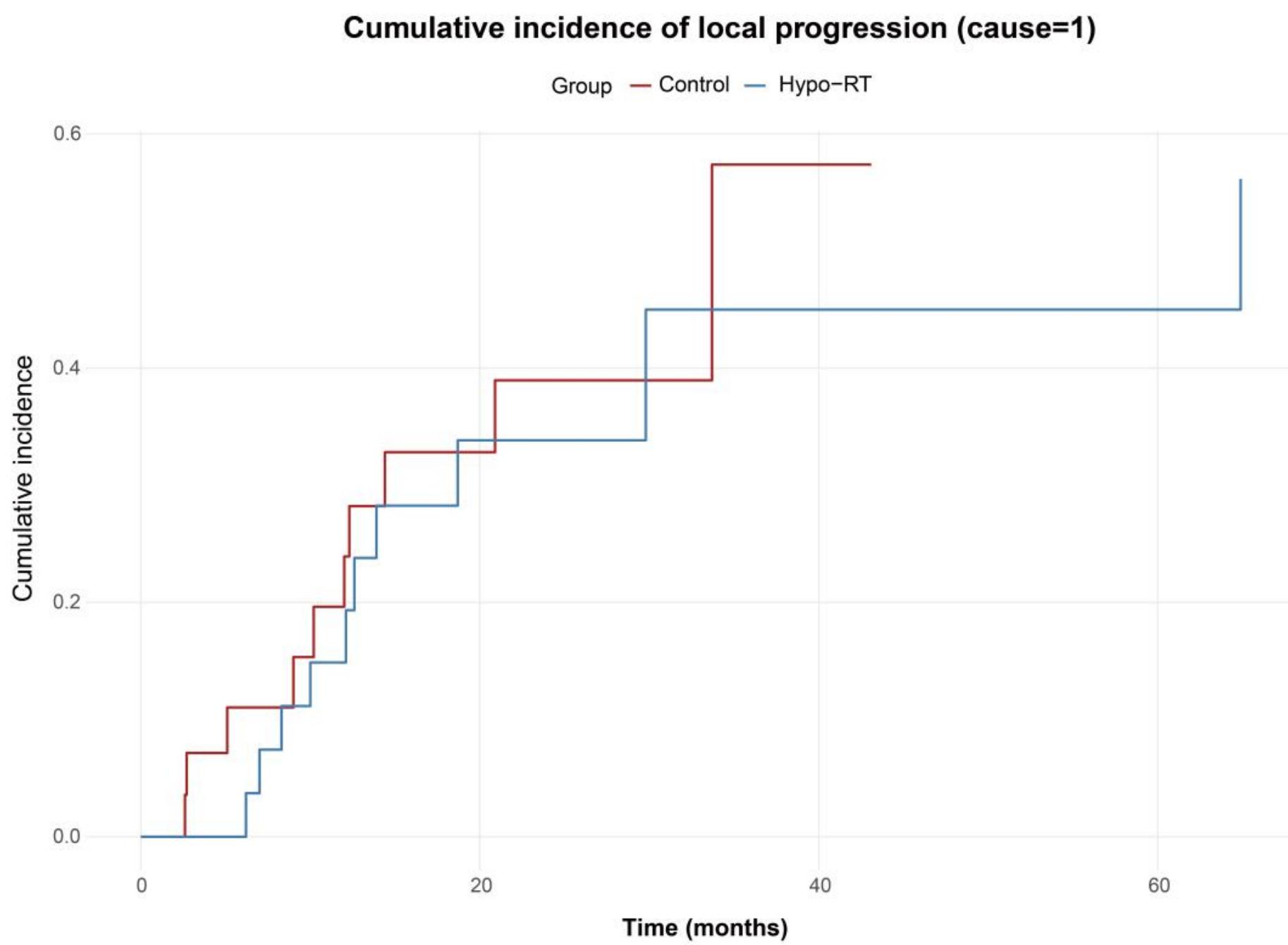
Overall survival curves overlapped (log-rank P=0.63)



Exploratory subgroup signal: lower mortality risk in stage IV disease.

Take-home message

In this propensity score-adjusted real-world cohort, the most consistent benefit of 3 Gy-fraction HypoRT was improved local disease control. Any survival effect should be considered hypothesis-generating.



Lower cumulative incidence of local progression with HypoRT

Time (years)	LC-free (Control)	LC-free (Hypo-RT)	Gray's test p value
1	76.1%	85.1%	—
2	61.0%	66.2%	—
3	42.6%	55.0%	—

3-year LC-free rate
55.0% HypoRT vs 42.6% control
Weighted Cox trend: HR=0.38 (95% CI:0.14-1.08), P=0.069