Adjuvant Chemotherapy Does Not Improve Overall Survival in Positive Surgical Margin Oral Cavity Cancer Patients Without Extranodal Extension

Daniel R. S. Habib BA[1], Yike Li MD PhD[2], Patrick Tassone MD MS[2], Ramez H. Philips MD[4], Pratyusha Yalamanchi MD MBA[5], F. Christopher Holsinger MD[6], Michael C. Topf MD MSCI[2]

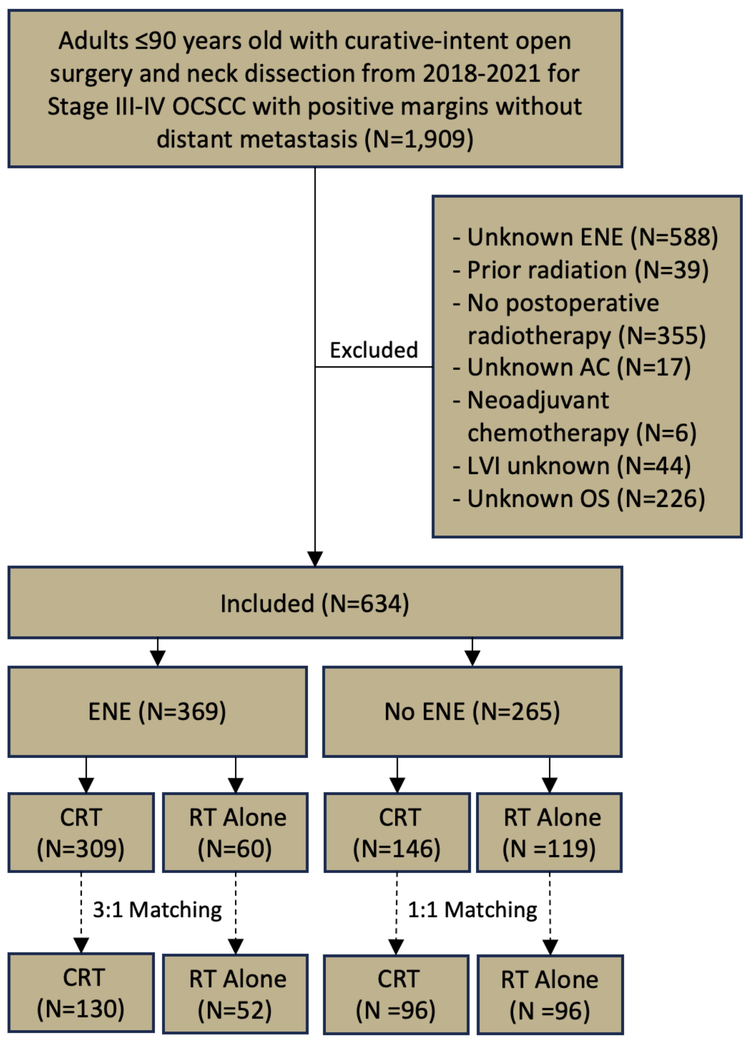
[1] Vanderbilt University School of Medicine, [2] Vanderbilt University Medical Center, [3] University of Missouri Health Care, [4] University of Chicago Medicine, [5] Michigan Medicine, [6] Stanford Medicine

Introduction

- National Comprehensive Cancer Network Guidelines recommend adjuvant chemoradiotherapy (CRT) for oral cavity squamous cell carcinoma (OCSCC) patients with positive margins and/or extranodal extension (ENE) based on two landmark clinical trials: EORTC 229311[1] and RTOG 95-01[2].
- However, both trials included only a small minority of patients with positive margins and no ENE.
- **Objective**: Determine if postoperative CRT is associated with an overall survival (OS) difference compared to radiotherapy (RT) alone in patients with stage III-IV OCSCC with positive margins, with and without ENE.

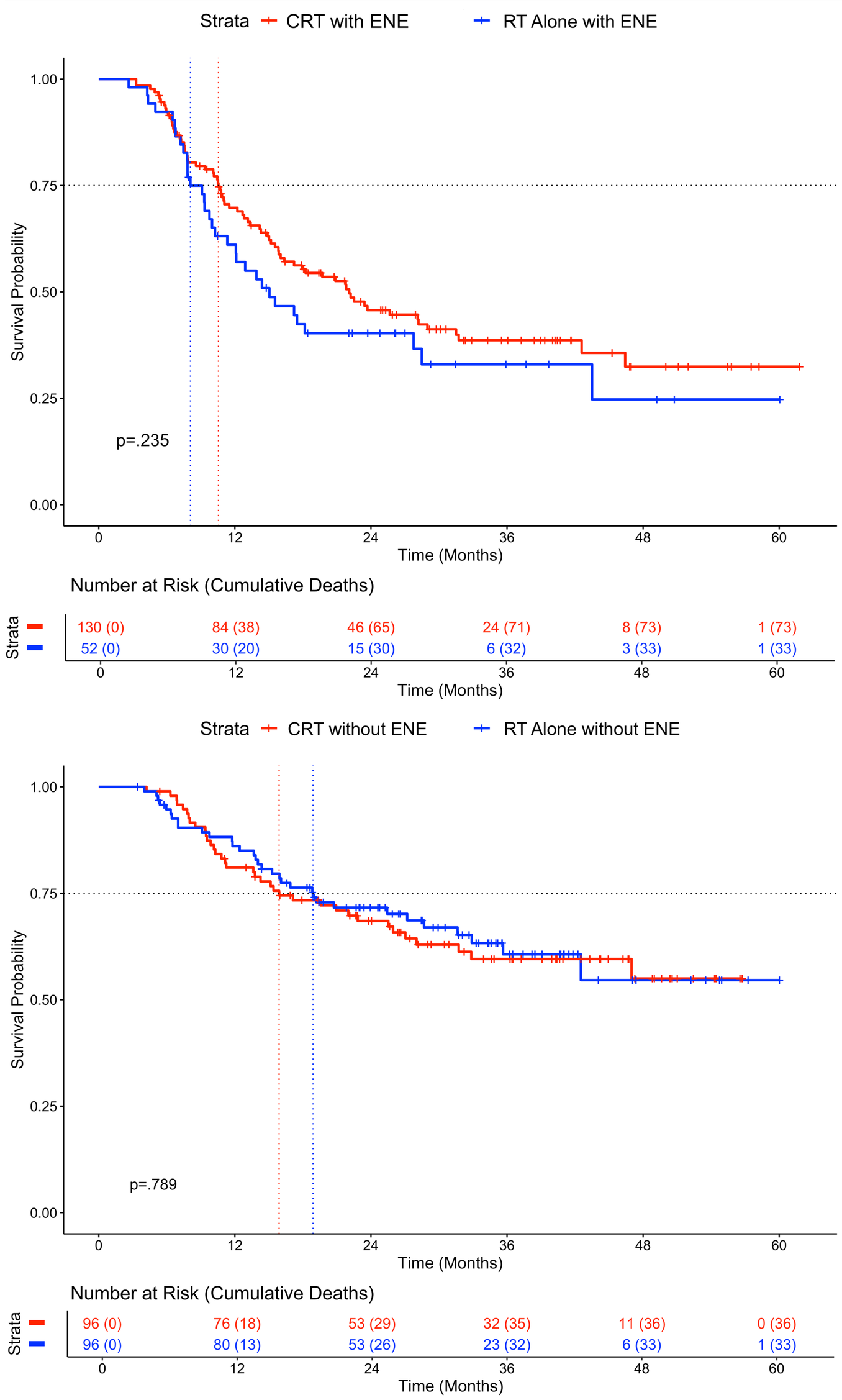
Methods

- **Population:** National Cancer Database (NCDB) OCSCC surgery patients
- **Statistical Analysis**:
  - 3:1 and 1:1 propensity matching of patients by CRT with and without ENE, respectively
  - Kaplan-Meier survival analyses
  - Cox proportional-hazards analyses
- **Covariates**:
  - Age
  - Charlson-Deyo Comorbidity Index
  - Pathologic T/N stage
  - Lymphovascular invasion (LVI)
- **Primary Outcome**: OS



Results

Figure 1. Kaplan-Meier Survival Analysis by Postoperative Therapy with and without Extranodal Extension



For OCSCC with ENE, CRT exhibited a non-significant trend toward improved OS on Kaplan-Meier analysis.

For OCSCC without ENE, CRT was not associated with improved OS on Kaplan-Meier analysis.

Table 2. Multivariable Cox Proportional-Hazards Analysis Results with and without Extranodal Extension

OCSCC with ENE	HR	95% CI	P Value
Age	1.02	1.00-1.04	.079
Any Comorbidity	0.99	0.65-1.51	.955
pT3-pT4 (vs pT1-pT2)	1.52	0.85-2.74	.160
pN3 (vs pN1-pN2)	**2.13**	**1.19-3.81**	**.011**
LVI	1.28	0.85-1.94	.234
CRT (vs RT Alone)	0.79	0.52-1.21	.280

OCSCC without ENE	HR	95% CI	P Value
Age	1.01	0.99-1.03	.339
Any Comorbidity	1.18	0.72-1.94	.500
pT3-pT4 (vs pT1-pT2)	1.60	0.83-3.06	.159
pN3 (vs pN0-pN2)	2.98	0.90-9.83	.073
LVI	**1.76**	**1.09-2.84**	**.022**
CRT (vs RT Alone)	1.03	0.64-1.66	.903

CRT was not independently associated with improved OS after controlling for matching variables.

Discussion / Conclusion

- **Limitations**: Missing NCDB pathologic data and small sample with ENE treated with RT alone
- Postoperative CRT (vs RT alone) for positive margin OCSCC without ENE exhibited no OS difference.
- For OCSCC patients without ENE, potential benefits of CRT may not outweigh increased toxicity.

References

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2. Cooper JS, Pajak TF, Forastiere AA, et al. Postoperative concurrent radiotherapy and chemotherapy for high-risk squamous-cell carcinoma of the head and neck. *N Engl J Med.* 2004;350(19):1937-1944.

Daniel Roy Sadek Habib
Website: danielrshabib.github.io
✉ Daniel.r.habib@Vanderbilt.edu
𝕏 @danielrshabib

VANDERBILT UNIVERSITY MEDICAL CENTER

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