

# The Role of Margin Status After Transoral Robotic Surgery for HPV-positive Oropharyngeal Squamous Cell Carcinoma

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## Introduction

- Transoral Robotic Surgery (TORS) for OPSCC resection is often followed by adjuvant radiation therapy (RT) or chemoradiation (CRT) with significant toxicities.
- TORS provides histopathology information, including margin status, that can guide de-escalation of adjuvant treatment.
- Current NCCN guidelines recommend adjuvant CRT for positive margins, but this recommendation is based on trials performed prior to the advent of widespread HPV testing.<sup>1</sup>
- The primary objective of this study was to evaluate margin status after TORS as a prognosticator in HPV+ OPSCC.
- The secondary objective was to evaluate margin status as a decision point for adjuvant therapy.

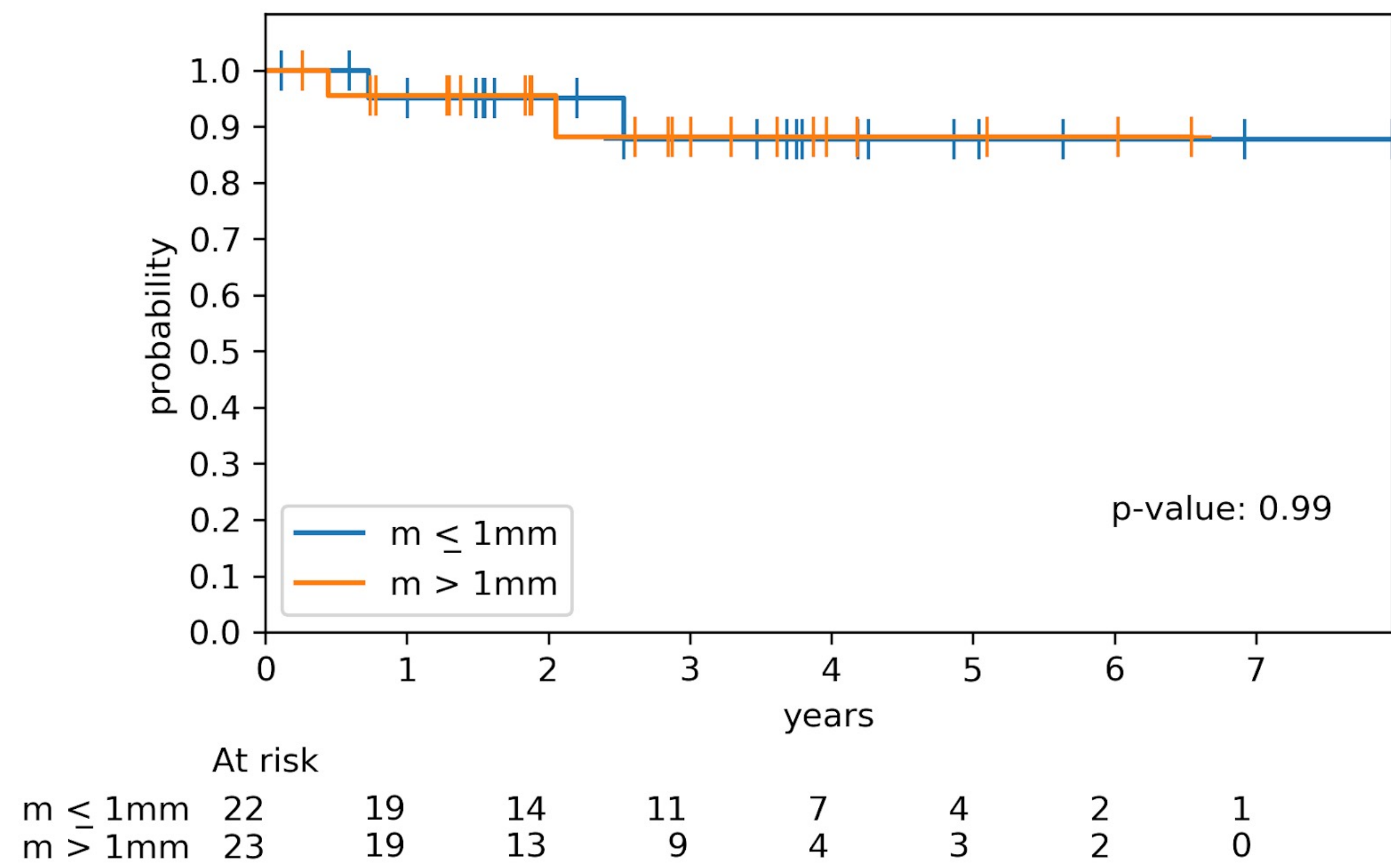
## Methods

- Retrospective cohort study of all patients who underwent TORS for HPV+ OPSCC at a single institution from 2010 - 2019.
- HPV+ determined by p16 immunohistochemical staining.
- Patients excluded if they had distant metastases or recurrent disease at time of surgery.
- All patients re-staged according to the AJCC 8th edition.
- Patients were stratified as having a “close” margin if there was  $\leq 1\text{mm}$  of tissue between the tumor and resection edge. They were deemed to have a “clear” margin otherwise ( $>1\text{mm}$ ).
- Disease free survival (DFS) assessed using Kaplan-Meier method.

## Results: Margin Status

- 45 patients
  - 87% male
  - Average age:  $60.6 \pm 8.6$  years
  - Tumor sites: 78% palatine tonsil, 18% base of tongue, 4% pharyngeal wall
  - 51.1% with clear margin, 48.9% with close margin
- Margin status was not a statistically significant factor in 5-year DFS

Figure 1: 5 year DFS in patients with clear vs close margins

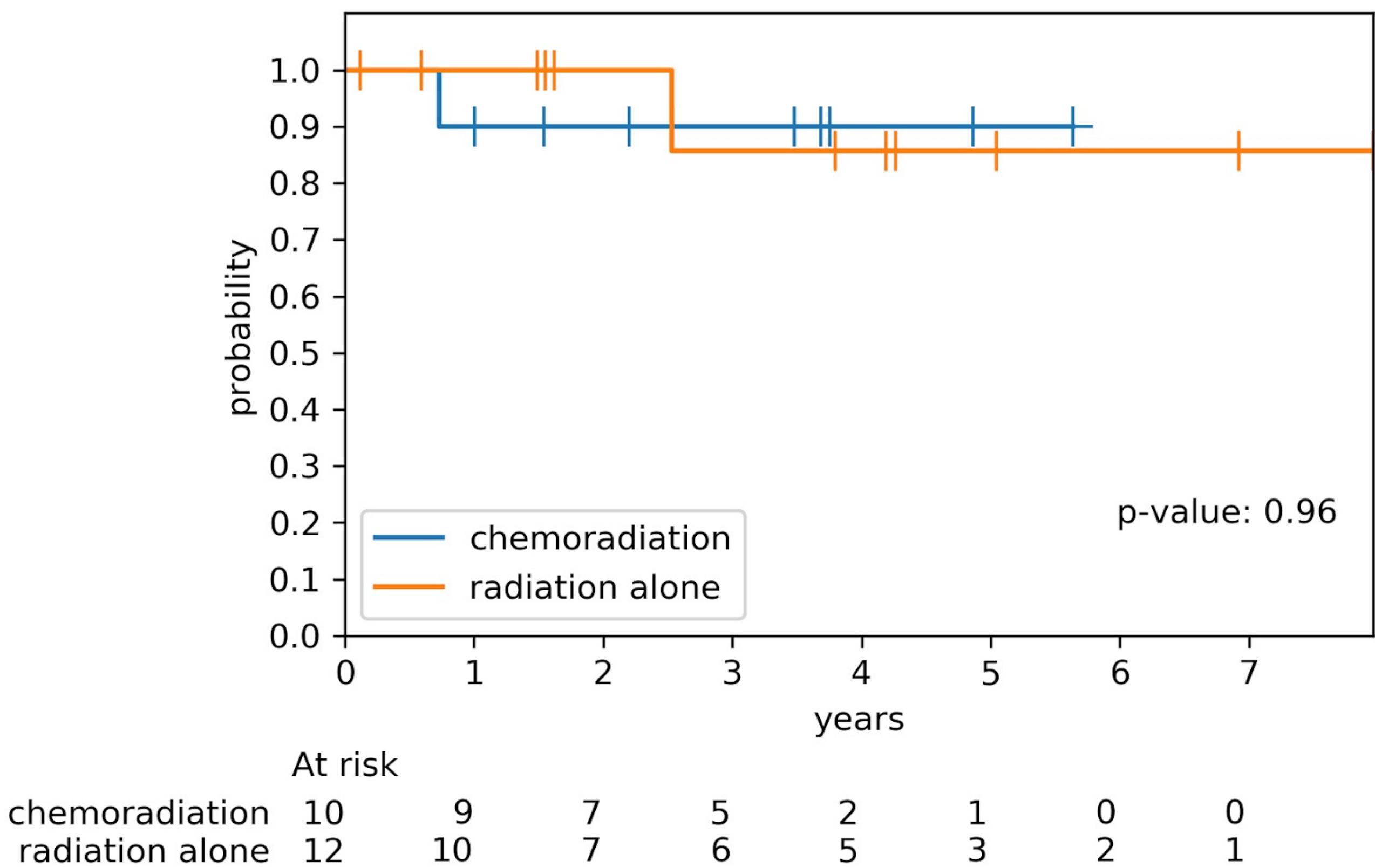


- Lymphovascular invasion (LVI) was statistically significant (relative risk 11 compared to LVI negative, 95% CI 1.3-93.6)
- Extranodal extension (ENE) was statistically significant (relative risk 11 compared to ENE neg, 95% CI 1.2-102.7)

## Results: Adjuvant Therapy

- All 22 patients with close margins received adjuvant therapy.
- 10 received CRT, 12 received RT only.
- Choice of adjuvant therapy was not a statistically significant factor in 5-year DFS
- However, extranodal extension (ENE) was present in 50% of patients who received CRT and 0% of patients who received RT.

Figure 2: 5 year DFS in patients who received adjuvant chemoradiation vs radiation alone



## Discussion

- Margin status was not associated with difference in DFS.
- Choice of adjuvant therapy in patients with close margins was not associated with differences in DFS.
- ENE status was associated with difference in DFS.
- These results suggest that margin status may not be a pathologic factor that warrants addition of chemotherapy to radiation for adjuvant therapy.
- These results are consistent with a prior study that showed no association with difference in outcomes for patients stratified by 2mm margin cutoff.<sup>2</sup>
- PATHOS and ECOG 3311 trials will evaluate the selection of adjuvant therapy in randomized trials.<sup>3,4</sup>

## Conclusions

- In this study, margin status was not a prognostic factor after TORS for HPV(+) OPSCC.
- Close margins may not warrant CRT over RT alone for adjuvant therapy.
- More data is needed to further evaluate margin status as a decision branch point for adjuvant therapy selection.

## References

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