

INTRODUCTION

Oropharyngeal squamous cell carcinoma (OPSCC) has two presentations – classically, older males with longstanding tobacco use and, more recently, younger males with human papillomavirus (HPV) infection. HPV+ OPSCC is rising and associated with improved prognosis and treatment response.

Despite overall higher survival, there remains a subset of patients with HPV+ disease with poor outcomes. This is thought to be due to distant metastasis. Several studies have introduced the concept that HPV+ disease metastasizes to atypical subsites with more frequency. Furthermore, studies suggest they recur in a disseminating phenotype, i.e. >2 organ systems.

However, while there is limited evidence, all previous reports were in small sample sizes. Furthermore, no studies examined whether these subtypes affect survival.

METHODS

A single institution retrospective study was performed.

We included patients from 2009 to 2019 diagnosed with OPSCC that underwent curative treatment with complete response (CR). Treatment failure patterns were assessed.

p16 was used as a surrogate for HPV+ status.

Kaplan-Meier curves, and multivariate analysis were used to evaluate failure patterns, AJCC 8th edition overall stage, and p16 status on 5-year overall survival (OS).

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RESULTS

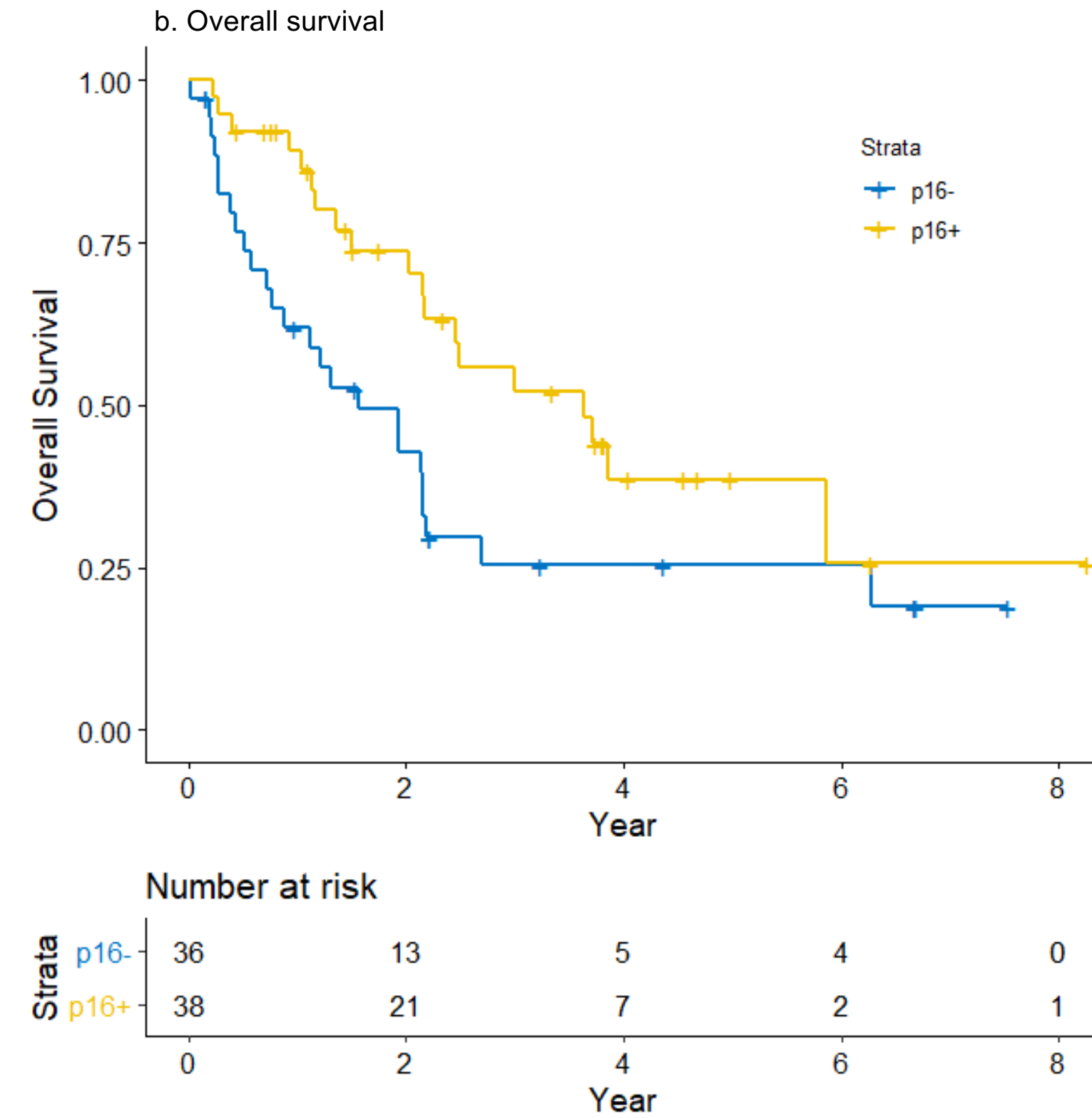
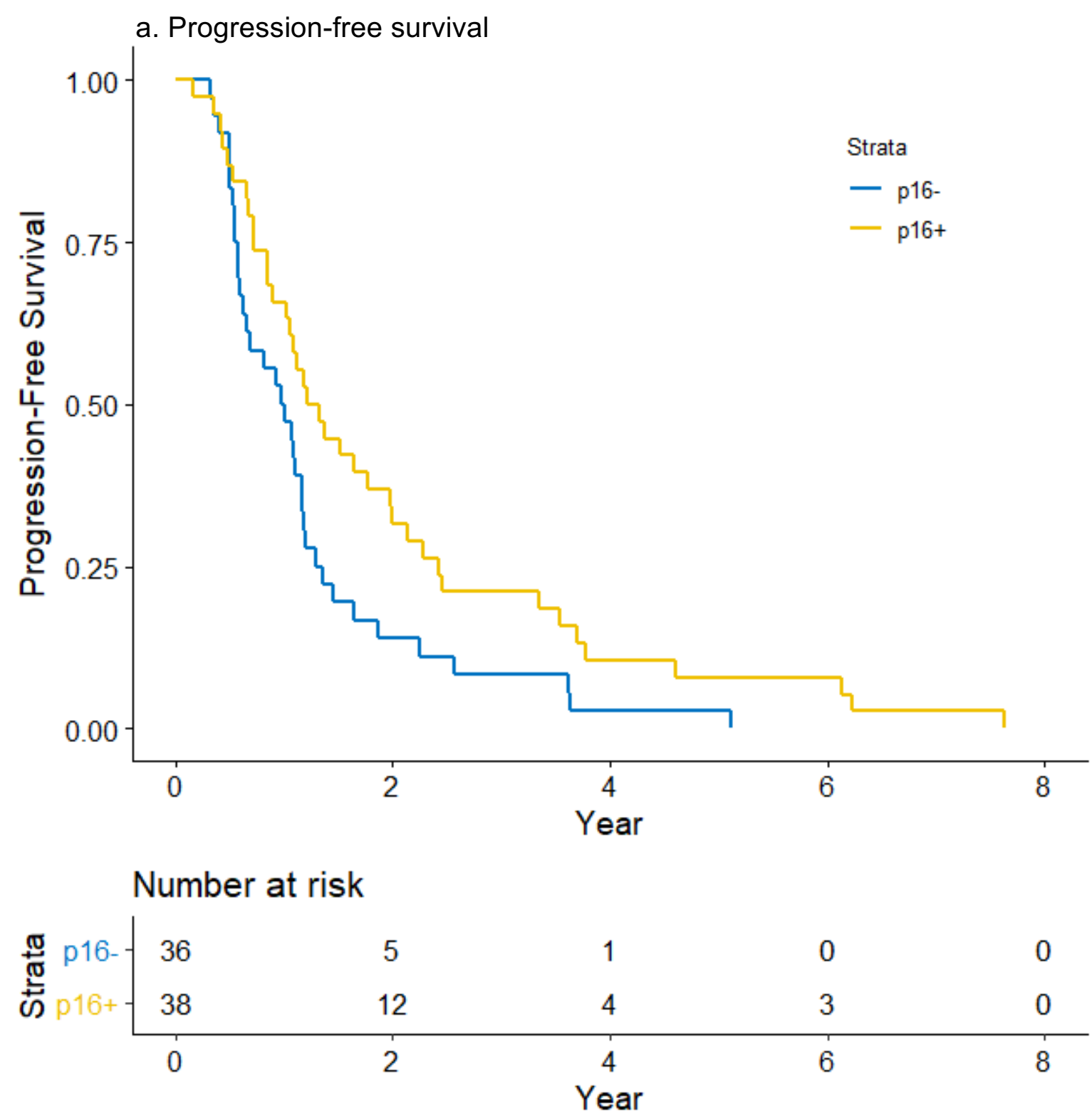


Figure 1. **p16 status is a prognostic biomarker in treatment failure OPSCC patients.** (a) Kaplan-Meier plot for progression-free survival in p16+ and p16- treatment failure OPSCC patients. $P=0.025$, log-rank. (b) Kaplan-Meier plot for overall survival in p16+ and p16- treatment failure OPSCC patients. $P=0.029$, log-rank.

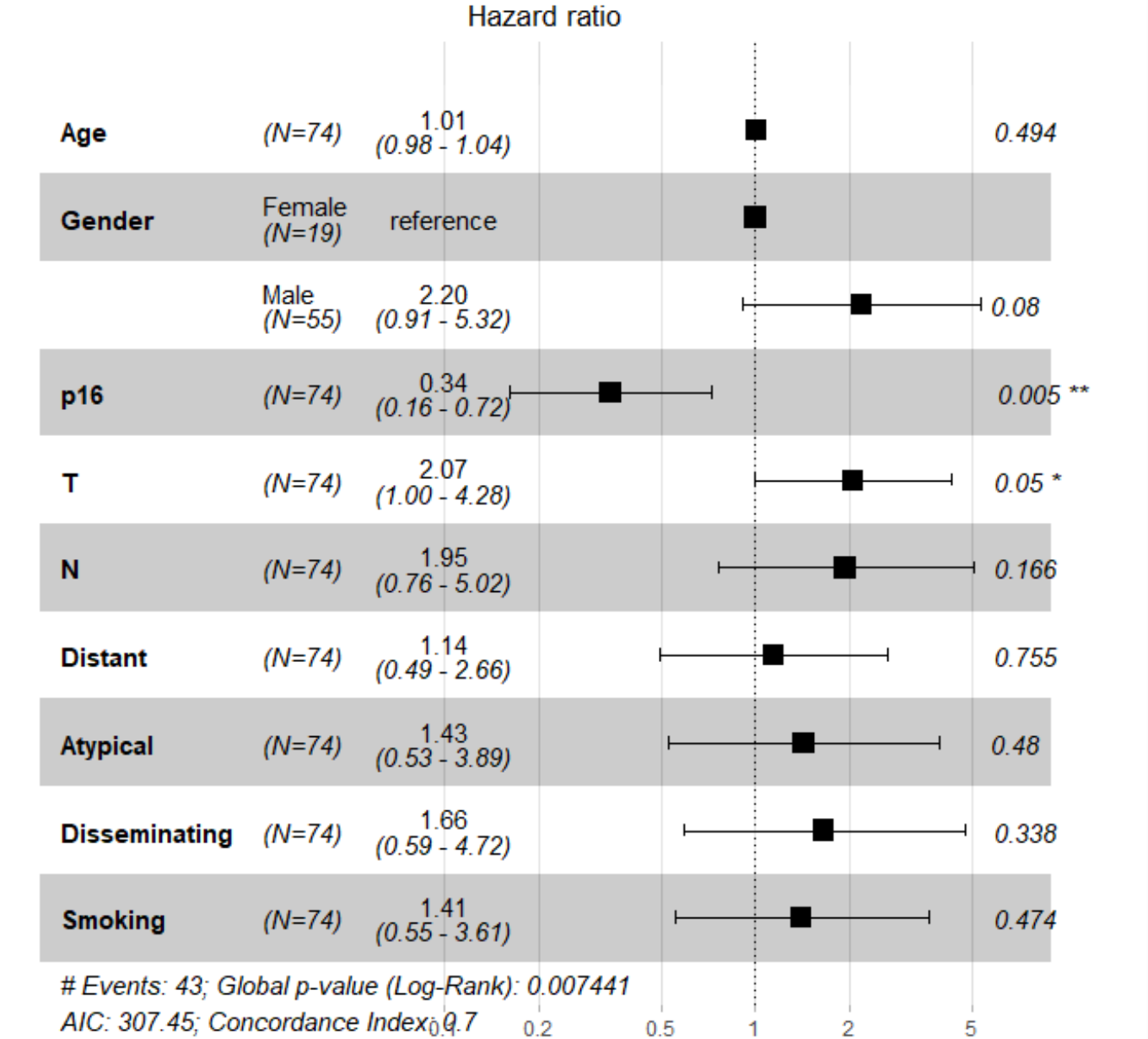


Figure 3. **p16 status is an independent prognostic biomarker in treatment failure OPSCC patients.** Multivariate regression model presented as a forest plot. T (clinical Tstage; T1/2 vs. T3/4). N (nodal status; N- vs. N+). Distant (locoregional vs. distant metastasis). Atypical (typical vs. atypical failure pattern). Disseminating (non-disseminating vs. disseminating failure pattern). Smoking (yes or no).

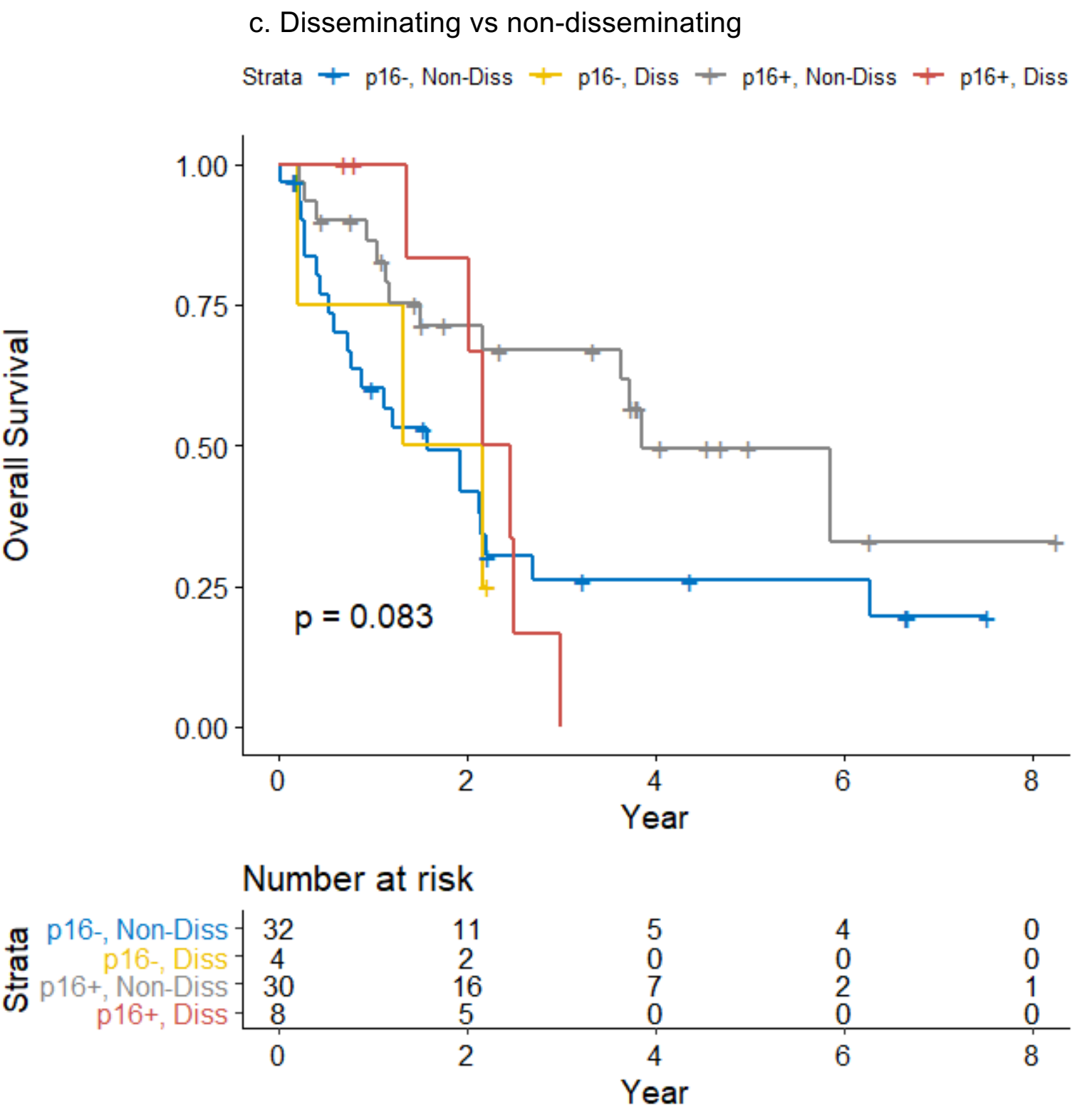
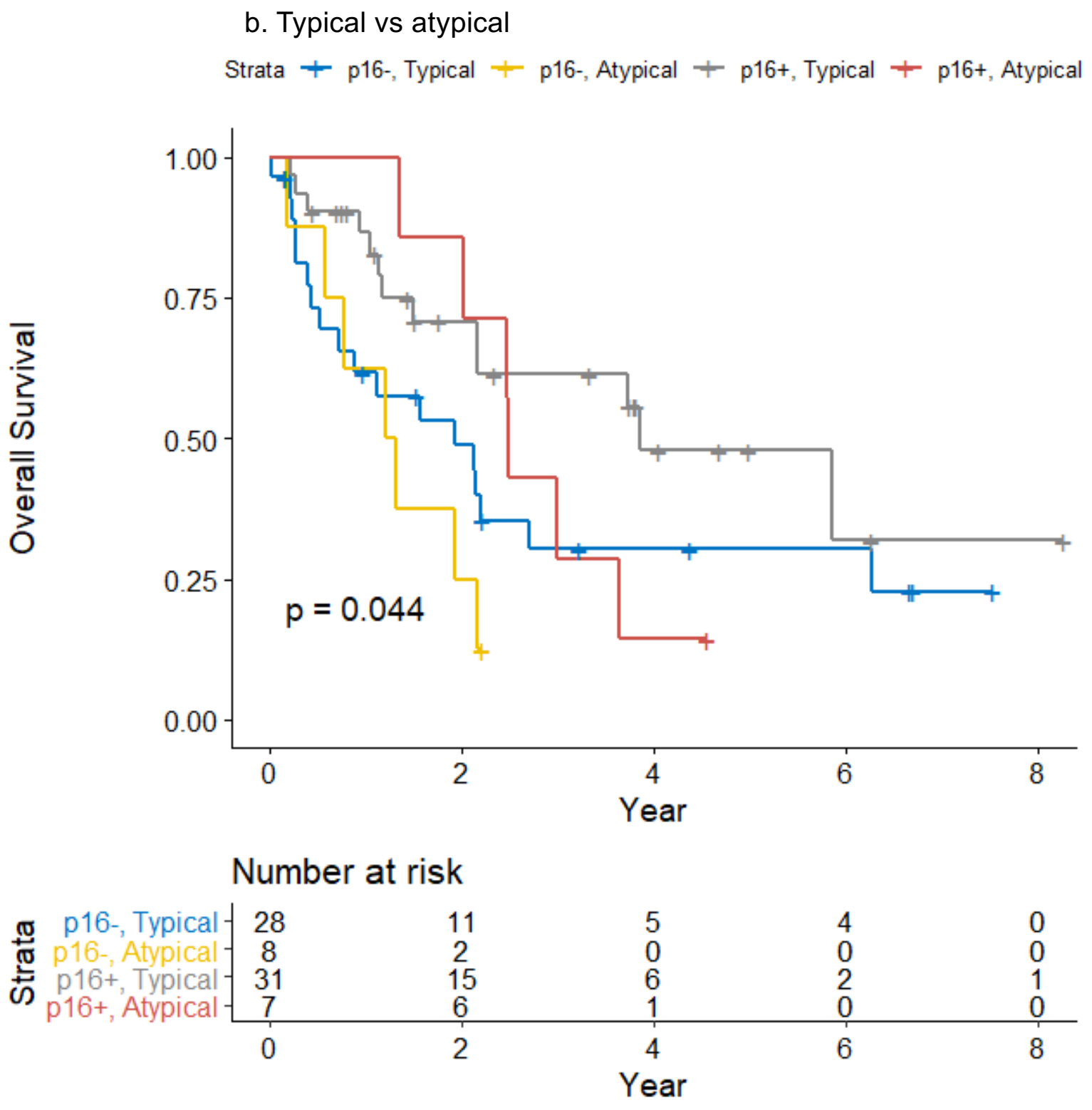
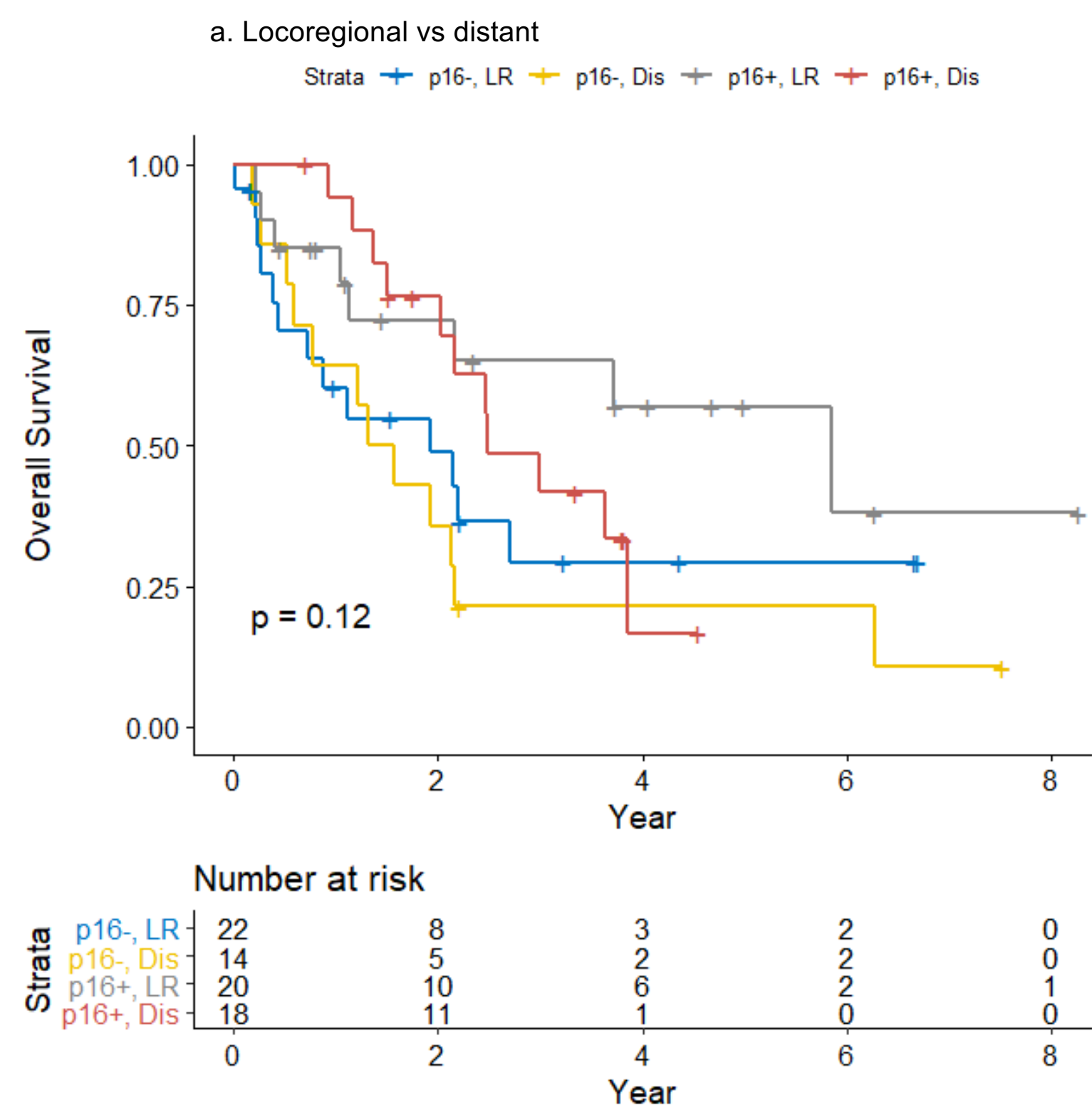


Figure 2. **Treatment failure patterns and overall survival in p16+ and p16- OPSCC.** (a) KM plots for p16+ and p16- R/M OPSCC patients who presented with locoregional and distant failures. $P=0.12$, log-rank. (b) KM plots for p16+ and p16- R/M OPSCC patients who presented with atypical and typical failures. $P=0.044$, log-rank. (c) KM plots for p16+ and p16- R/M OPSCC patients who presented with disseminating and non-disseminating failures. $P=0.083$, log-rank.

CONCLUSIONS

- Patients with p16+ disease have significantly longer survival
- P16+ patients with non-disseminating disease is associated with better outcomes
- In OPSCC cohort without previous malignancy, treatment failure patterns between p16+ and p16- disease are similar.
- Prospective trial and other considerations, including disease free survival and functional outcomes, must be investigated.

REFERENCES

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