

# COMPARATIVE OUTCOMES OF INDUCTION CHEMOTHERAPY VERSUS UPFRONT SURGERY IN LOCALLY ADVANCED TONGUE CANCER: A SINGLE-CENTER EXPERIENCE

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## Introduction

Locally advanced tongue cancer imposes a substantial global burden, particularly in Asia where betel quid chewing and tobacco use drive high incidence rates. According to GLOBOCAN 2022, South and South-East Asia accounted for 177,258 new cases and 98,735 deaths from oral cancer, with India at the top, followed by Sri Lanka, 13.61 in Bangladesh, and Pakistan. In Pakistan specifically, lip and oral cavity cancers ranked third among all new cases, with 15,915 incidents (8.6% of total cancers) and an ASR of 12.07 per 100,000 in males, underscoring its status as the most common malignancy in men. This study seeks to contribute to the growing body of evidence by comparing these two approaches in a single-center cohort, providing valuable insights into their comparative efficacy and clinical outcomes.

## Objectives

- The primary endpoint was overall survival (OS)
- Secondary endpoints included progression-free survival (PFS), loco-regional control (LRC).

## Methods

We retrospectively reviewed 199 patients with stage III–IV squamous cell carcinoma of the tongue treated from 2019 to 2024. Patients were categorized into two groups: IC followed by definitive local therapy (n = 105) and upfront surgery with post-operative RT (n = 94).

## Results

There were a total of 199 patients, with 121(61%) male, 78 (39%) females, with median age of 52. Median follow-up period was 18 months. The 3-year overall survival (OS) rates were 65% in the IC group compared to 59% in the surgery + RT group, while 5-year OS was 44% for IC + surgery + RT versus 59% for surgery + RT. Additionally, the 3-year PFS rates were comparable (61% vs 59%), and the 5-year PFS was slightly higher in the surgery + RT group (50% vs 40%). Statistical analysis using the Chi-Square test revealed significant differences in the distribution of relapse patterns between treatment groups ( $p = 0.011$ ), but no significant differences in OS ( $p = 0.917$ ) or PFS ( $p = 0.927$ ). These findings suggest that, while treatment sequences may influence locoregional control and relapse patterns, they do not significantly affect long-term survival outcomes in this cohort.

### Response Post IC

	N	Percent
Response	74	37.2
Stable	57	28.6
Progression	59	29.6

### Relapse Rate Comparison Between Treatment Groups

Treatment Group	Not Relapsed	Locoregional	Nodal	Distant
IC + Surgery + RT*	73 (69.5%)	21 (20.0%)	3 (2.9%)	8 (7.6%)
Surgery + RT	59 (69.4%)	9 (10.6%)	5 (5.9%)	12 (14.1%)

\*Patients who had IC and didn't get surgery and went for RT were excluded

\*\*Chi-Square Test returned a p-value of 0.011

## CONCLUSION

This study found no significant difference in overall survival or progression-free survival between both treatment groups. While relapse patterns varied, long-term survival outcomes were similar for both treatments. Limitations include the retrospective design, single-center data, and short follow-up. Future Directions should focus on larger, multicenter studies with longer follow-up and molecular profiling, to refine treatment strategies.

