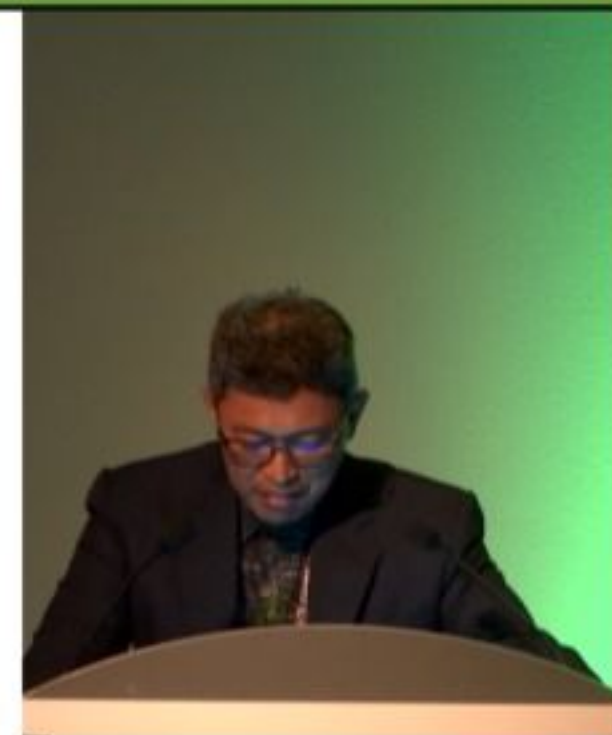


## Note

Please feel free to photograph and share these slides on social media.



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# Comparing Swallowing Function in OTSCC after HDRIBT followed by IMRT (HyBIRT) with Surgery.



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Definitive upfront high dose rate interstitial brachytherapy (HDRIBT) followed by adoptive IMRT + chemotherapy (HyBIRT) technique

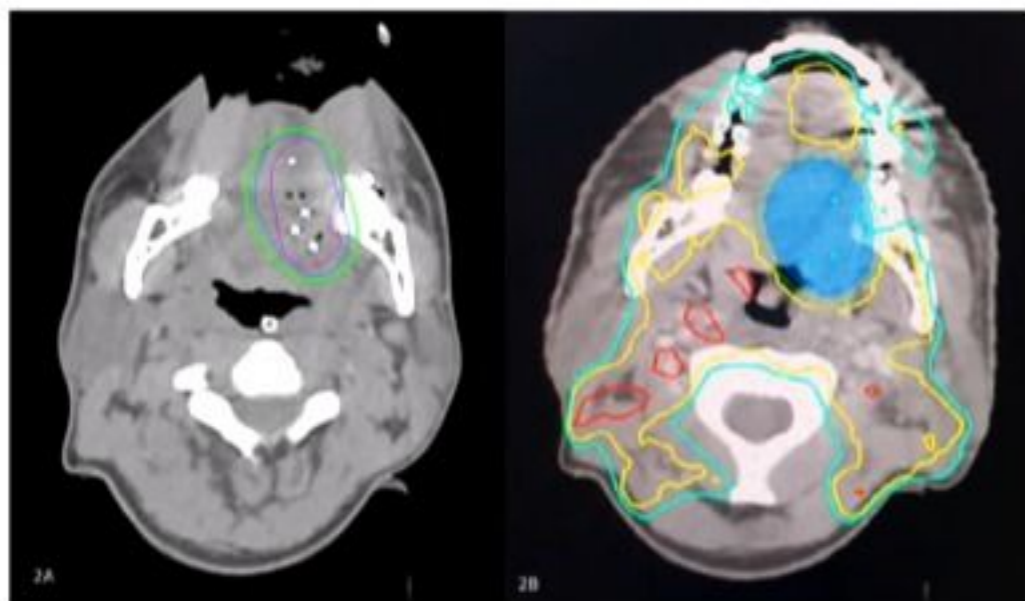


Figure 2A: HDR Brachytherapy plan showing the 20Gy isodose line (green), 25Gy isodose line (blue) and gross tumor volume; GTV (purple). Figure 2B: IMRT image set showing 25Gy isodose line (shaded blue), 20Gy isodose line (green) from brachytherapy plan that is co-registered with IMRT plan, 59.4 Gy isodose (blue), 61.71 Gy isodose line (yellow) and 69.96Gy isodose line (red)

### Treatment regimen:

- **HDRIBT** 20Gy in 5F to GTV-P, ensuring 90% of GTV-P receive 25Gy in 5F
- **IMRT** (33 fractions) within 10 days with weekly Cisplatin 40mg/m<sup>2</sup> x 6 cycles
  - Dose:
    - 69.96-72.6Gy (gross disease/node),
    - 61.71Gy high risk region,
    - 56.1y to low risk volume and
    - 59.4Gy to the pre-treated HDRIBT field
- EqD2 GTV-P (tongue) >85Gy
- Hard constraint 63Gy to 25Gy HDRIBT volume/isodose line.



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This study received institutional human ethics approval to be conducted at Advanced Medical & Dental Institute, Universiti Sains Malaysia (JEPeM Code : USM/JEPeM/21080564)

## Introduction

HyBIRT technique for definitive treatment of oral tongue SCC (OTSCC) in patients who are ineligible for surgery has shown a promising result which are at least equivalent to surgical series (1).

	1-year (95% CI)	3-year (95% CI)
OS	79% (63%,100%)	61% (40%,94%)
DFS	94% (84%,100%)	73% (50%,100%)
PFS	78% (61%,100%)	68% (48%,98%)
LC (tongue)	94% (84%,100%)	94% (84%,100%)
LRPFS (nodal)	88% (73%,100%)	88% (73%,100%)

How about the functional outcome of HyBIRT ?



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### References:

1.Appalanaido G, Musa M, Chng E, Shukor SA, Chong S, Noor SM, et al. OC-0631 Upfront HDRIBT followed by IMRT for the Definitive Treatment of Tongue SCC. Radiotherapy and Oncology. 2023;182:5520-51.

## Objective

To compare the swallowing outcome in OTSCC patient undergoing **HyBIRT technique OR surgery** as the primary modality treatment.



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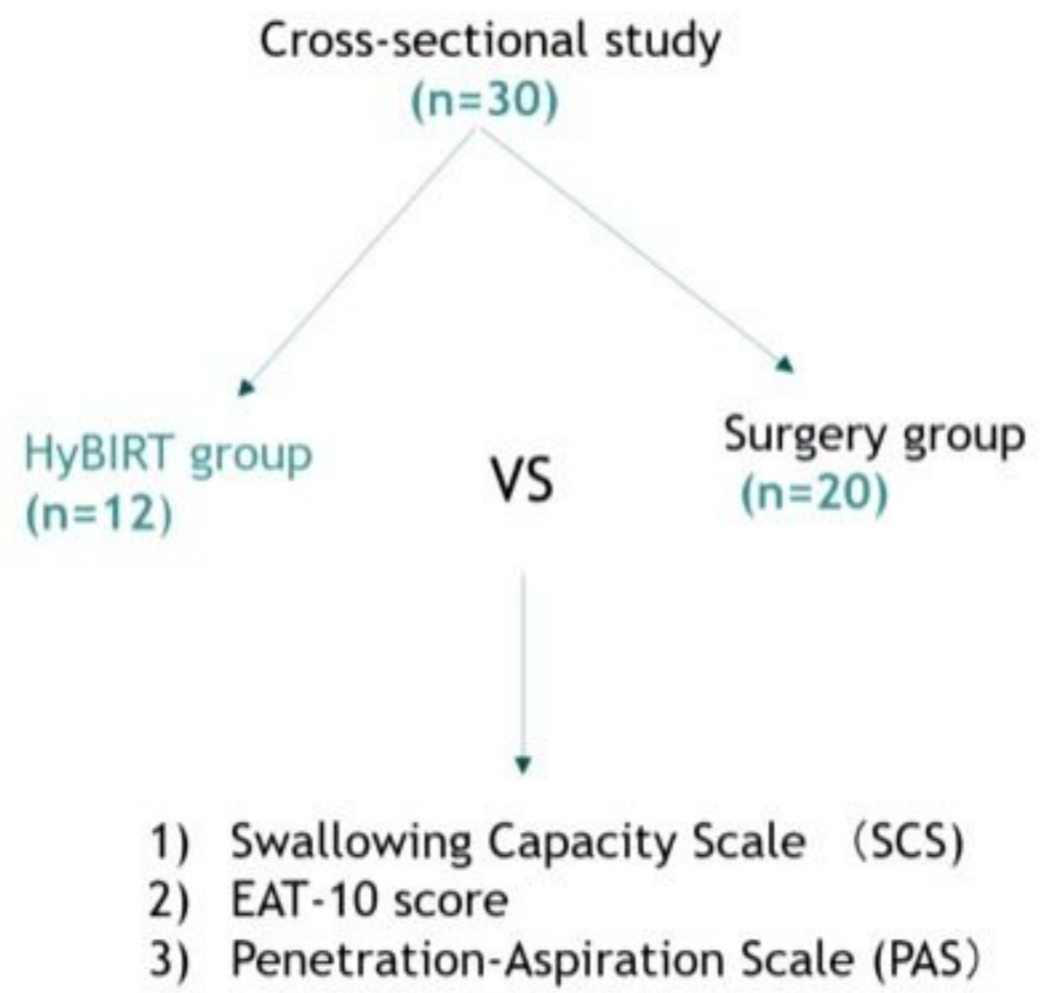
# Methods

## Inclusion Criteria

- 1) Histopathological confirmed OTSCC patients with age 18 and above
- 2) Imaging confirmed radiological complete response
- 3) Disease-free for at least 6 months after treatment

## Exclusion Criteria

- 1) Metastatic disease
- 2) Neurological disorders that might impair swallowing



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## Flexible Endoscopic Evaluation of Swallowing (FEES)

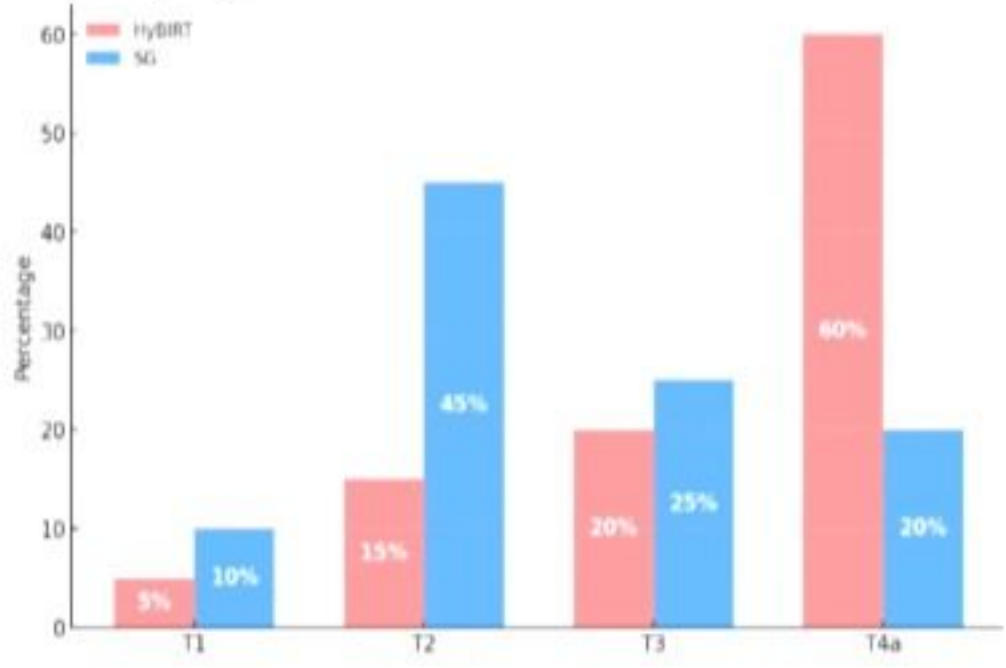
- Real time nasopharyngolaryngoscopy while participant swallowing blue-coloured materials
- 3 type of consistency - fluid, semi-solid and solid (biscuits)
- Penetration- Aspiration Scale(PAS) (Rosenberg et.al) score from observation of the materials the in pharynx / larynx
  1. Depth of airway invasion
  2. Remains of material
  3. Patient response to the materials.
- Scores from 1- 8
  1. Score 1: no airway entry
  2. Score 8: full aspiration



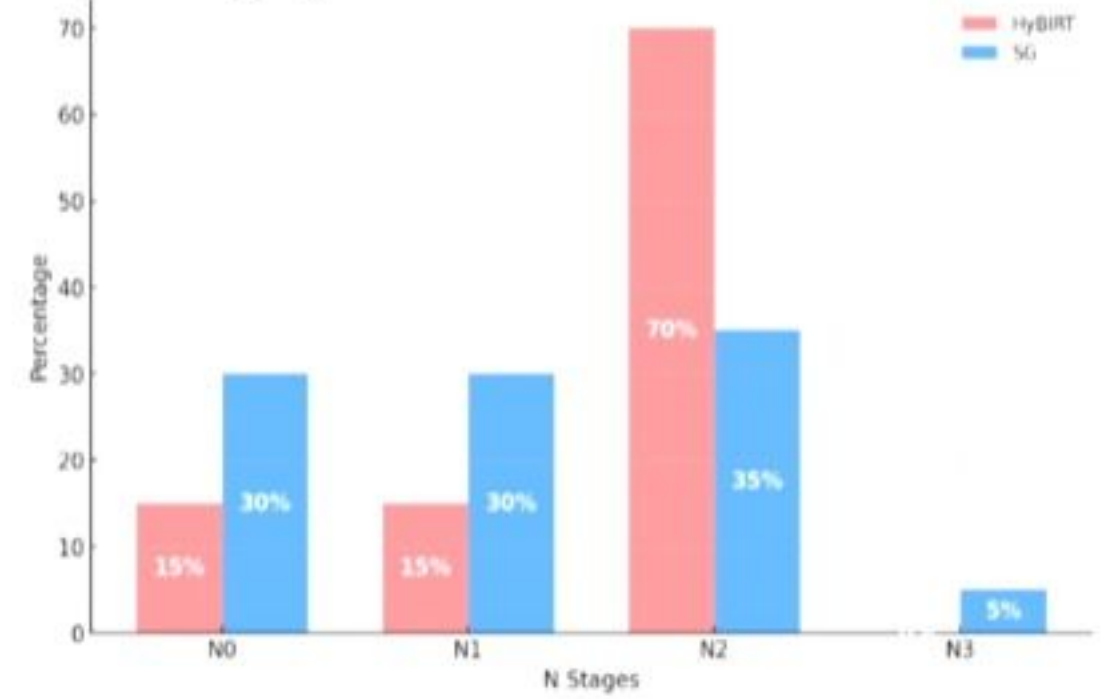
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# Demographic Details

### T Staging Distribution



### N Staging Distribution



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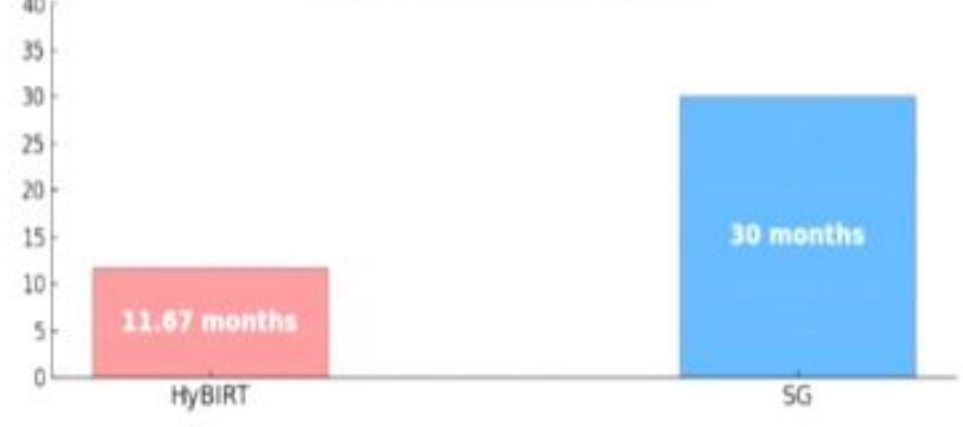


# Demographic Details

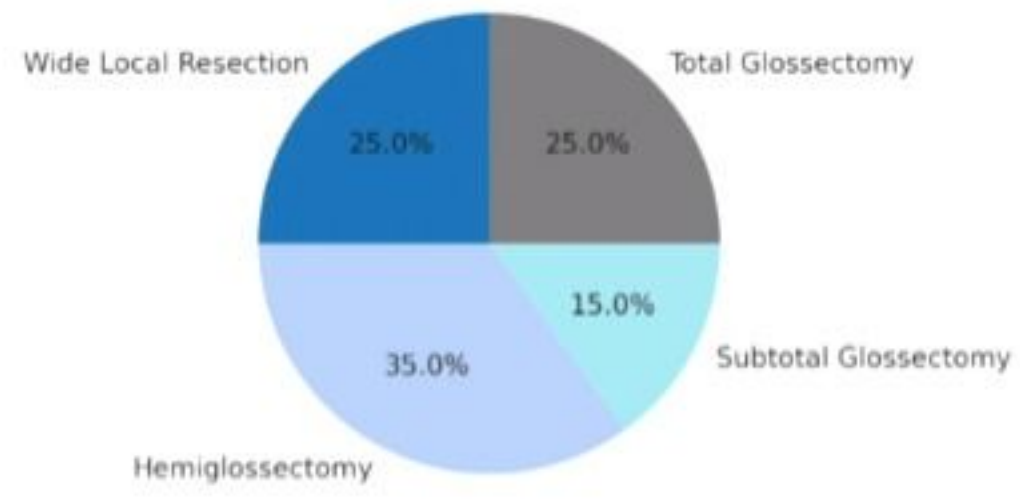
Median Age Comparison



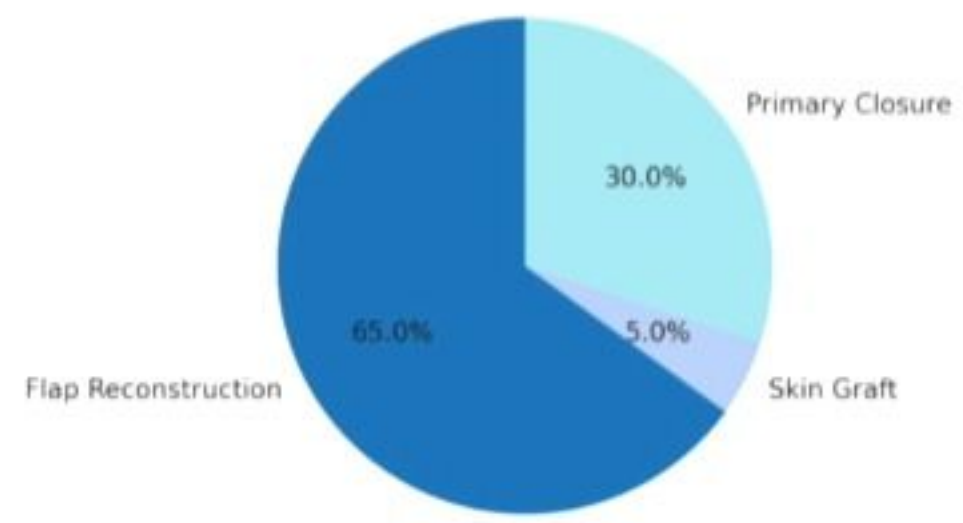
Median Follow-up Comparison



Types of Surgery in SG



Type of Reconstruction in SG



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## Results

Assessment Tool	HyBIRT	SG	Statistical Significance (P-Value)
Swallowing Capacity Scale	Median:7	Median:4.5	$p < 0.01$
EAT-10 score	Median:7	Median:19.5	$p < 0.035$
PAS-Liquid	Median:1	Median:2	$p = 0.022$
PAS-Semi Solid	Median:1	Median: 2	$p = 0.022$
PAS-Solid	Median:1	Median: 1	$p = 0.264$

	HyBIRT	SG	Statistical Significance (P-Value)
Arrested at oral phase ( Solid Bolus)	0	25%	$p = 0.14$
Nasogastric Tube Feeding	0	n=2	$p = 0.54$

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## Conclusion

Current study showed a superior outcome in terms of swallowing function which is the major factor that contributes to poor QOL in OTSCC patients after cancer treatment.

The shorter follow-up, smaller sample size in the HyBIRT group and non-stratified enrolment are the limitations of this study.

A larger multicenter prospective trial with longer follow-up of this hybrid method of upfront HDRIBT followed by IMRT (HyBIRT) with concurrent chemotherapy is needed to confirm the superior clinical outcomes in terms of local disease control, OS and importantly quality of life.



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## Acknowledgement

### Grant Provider

College of Otorhinolaryngologist-Head and Neck Surgeons of the Medicine of Malaysia (CORLAMM)



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# Thank You