

The logo for AOS 2025 is a blue shield-shaped emblem. At the top, it features the text 'AOS 2025' in white. Below this, the tagline 'Connect and Collaborate to Conquer Cancer' is written in a smaller white font. At the bottom of the shield is a white decorative knot symbol. The background of the slide features a colorful geometric pattern at the top and a repeating light-colored pattern below.

AOS 2025

Connect and Collaborate to
Conquer Cancer

5th International Congress of Asian Oncology Society & 51st Annual Meeting of Korean Cancer Association

JULY 3 Thu - **4** Fri, 2025 | COEX, Seoul, Korea

**PET-confirmed complete response (CR) after hybrid
brachytherapy followed by IMRT (HyBIRT) in 23 oral
tongue squamous cell carcinoma (OTSCC) patients**

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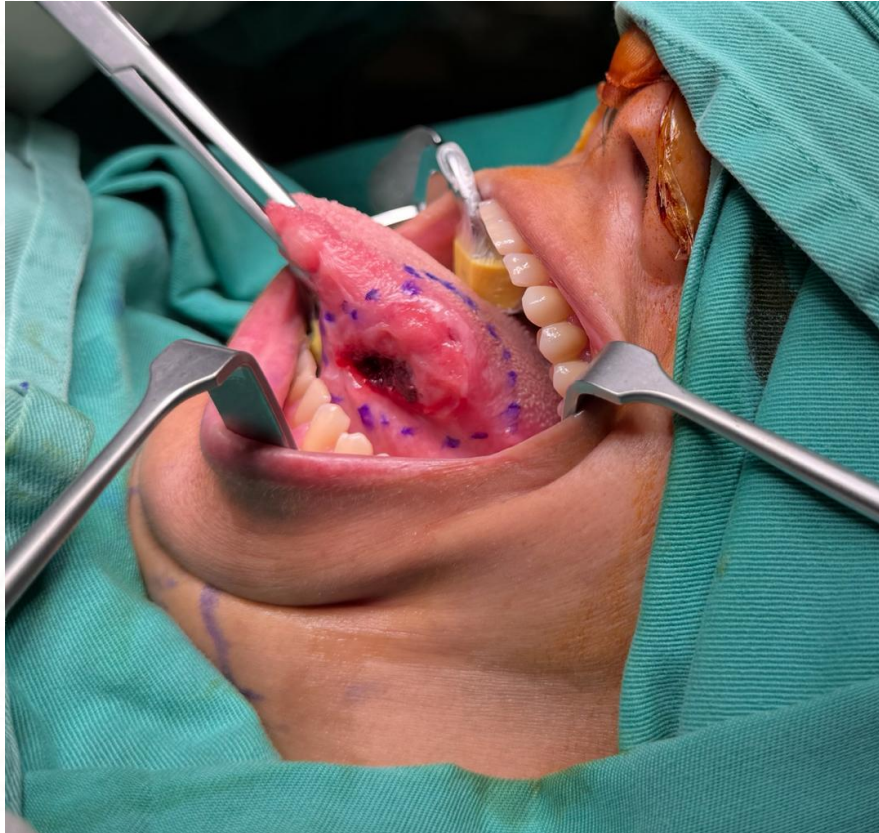
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COI Disclosure Information

I have financial relationships to disclose.

Travel grant from ABEX Medical Ptd Ltd

Background/Purpose:



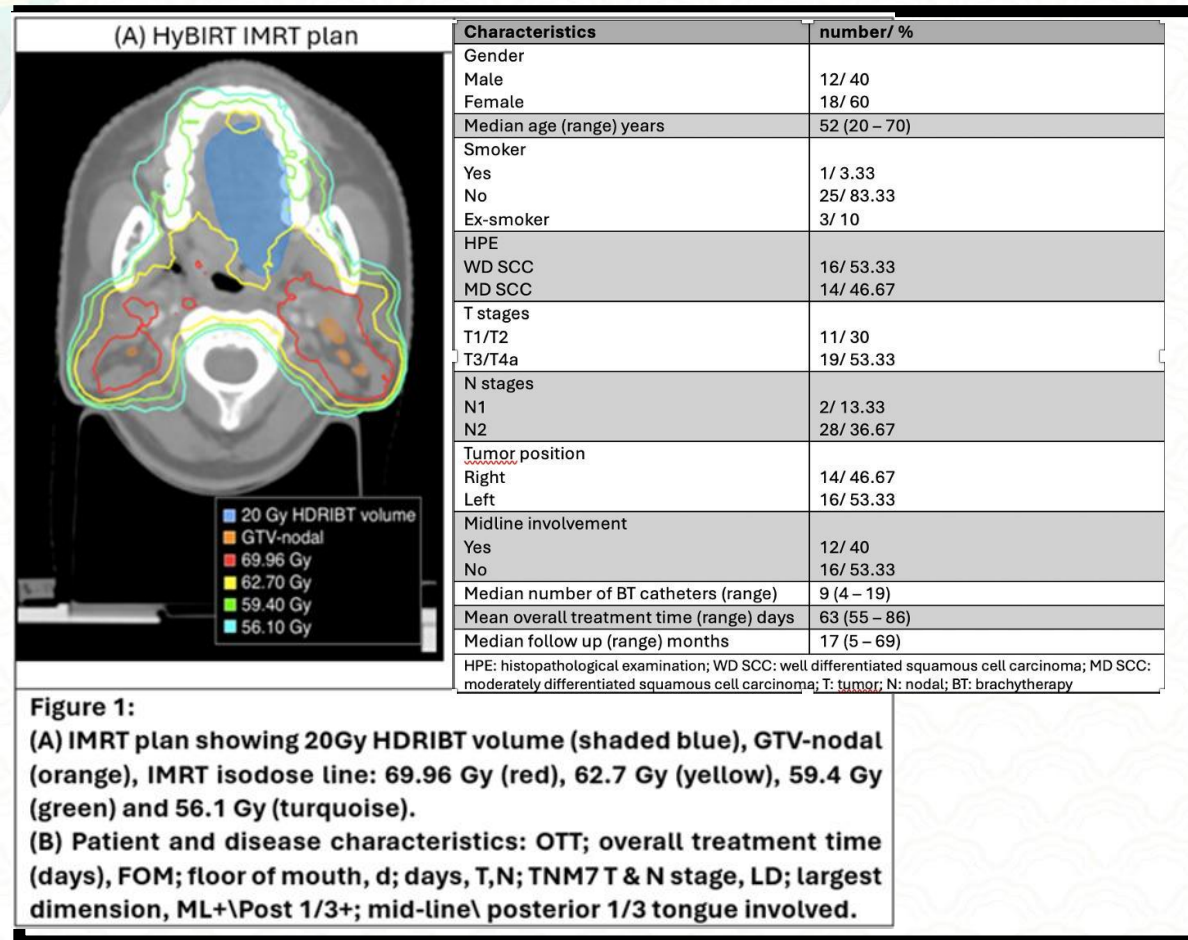
Surgery followed by radiotherapy(RT) remains the standard of care for OTSCC.

Definitive chemoradiotherapy (dCCRT) for those who are not fit or refuse gives poorer outcome.

HyBIRT is a minimally invasive approach which combine High Dose Rate (HDR) interstitial brachytherapy (IBT) with IMRT to treat OTSCC.

We report the utilisation of PET imaging to evaluate treatment response in 30 patients treated with HyBIRT in USM.

Treatment Algorithm and Patient characteristic



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/m² 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.

This study received institutional human ethics approval
(JEPeM Code : USM/JEPeM/21080564)

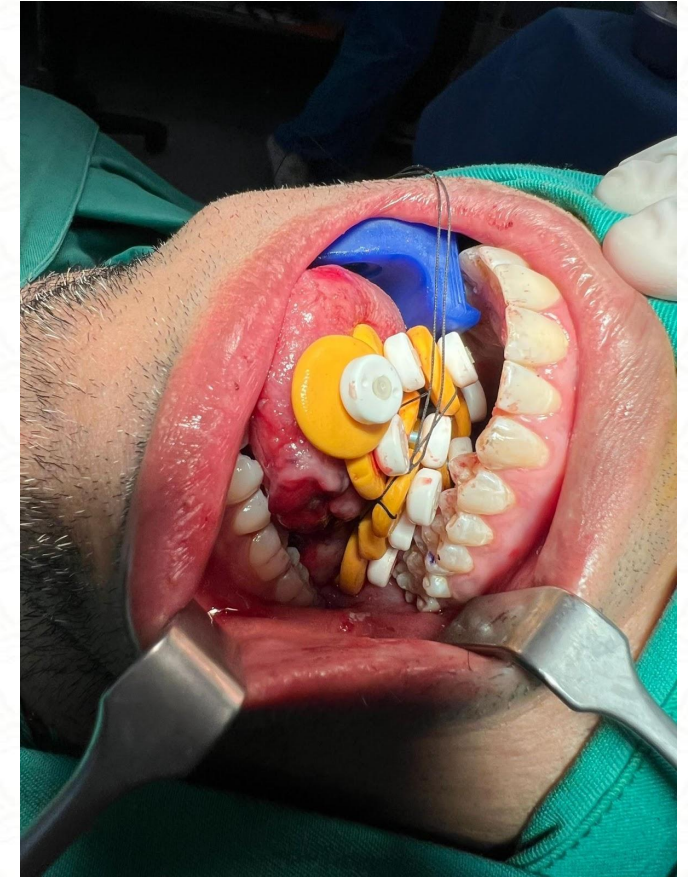
Study protocol

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> -Tumor with epicentre at anterior 2/3 tongue. -Unable to undergo surgery for various reason -ECOG PS 0-2. -Histologically confirmed SCC. 	<ul style="list-style-type: none"> - Tumor with cortical bone involvement. - Technically not possible to approach the posterior tongue for applicator insertion. - Radiologically confirmed metastatic disease (M1) - Contraindication for nasal intubation.

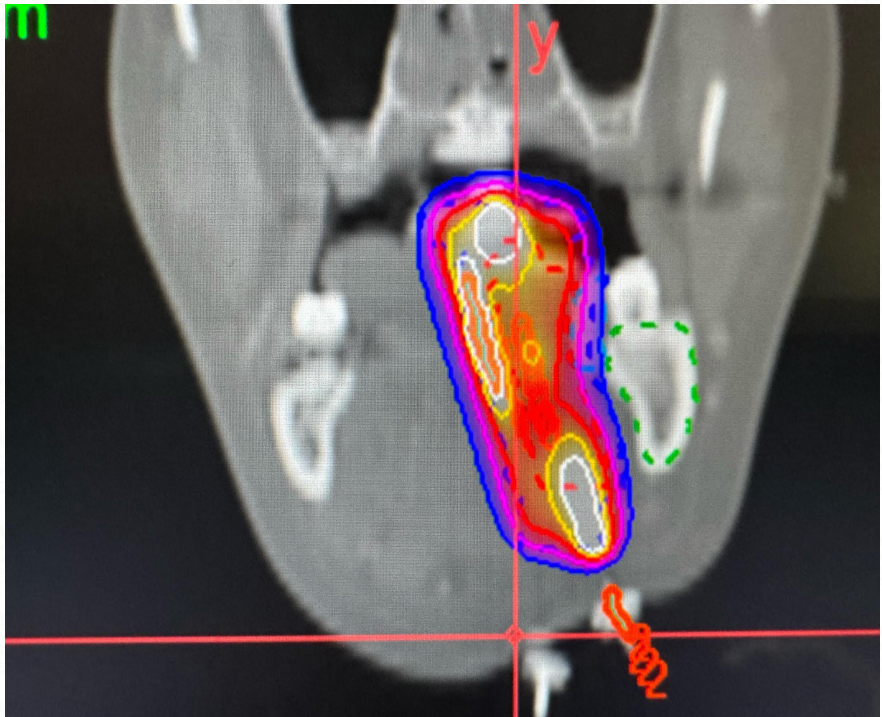
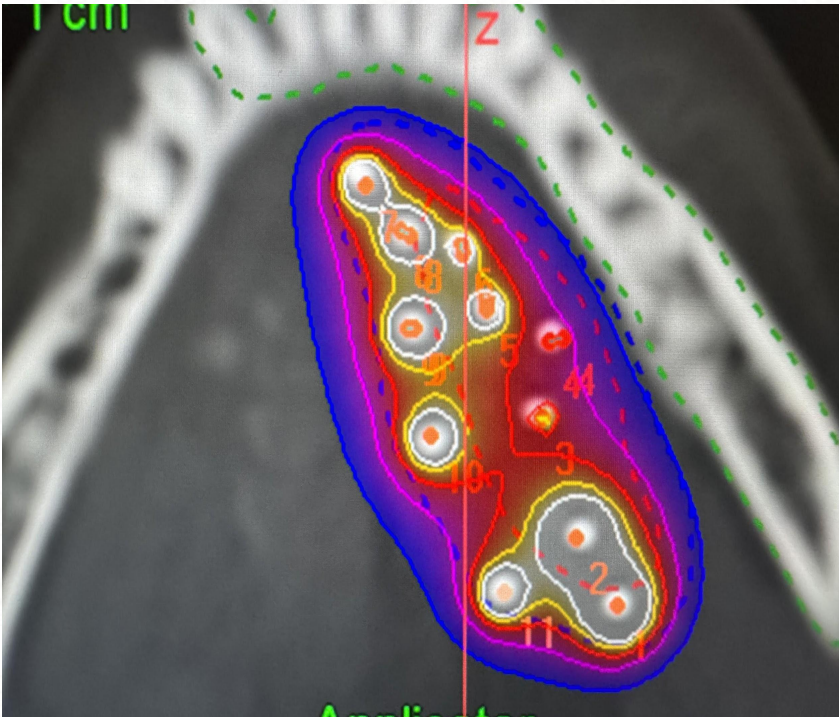
Follow-up schedule

	Weeks(w), months(m) after IMRT
Clinical assessment Local control Neck control Toxicity scoring	<ul style="list-style-type: none"> - 0 w, 2w, 6w, 3m, 4m, 5m, then 2 monthly
Imaging:	<ul style="list-style-type: none"> - PET-CT Scan at 3m, repeat at 6m if not CR. - MRI head&neck if clinically indicated thereafter

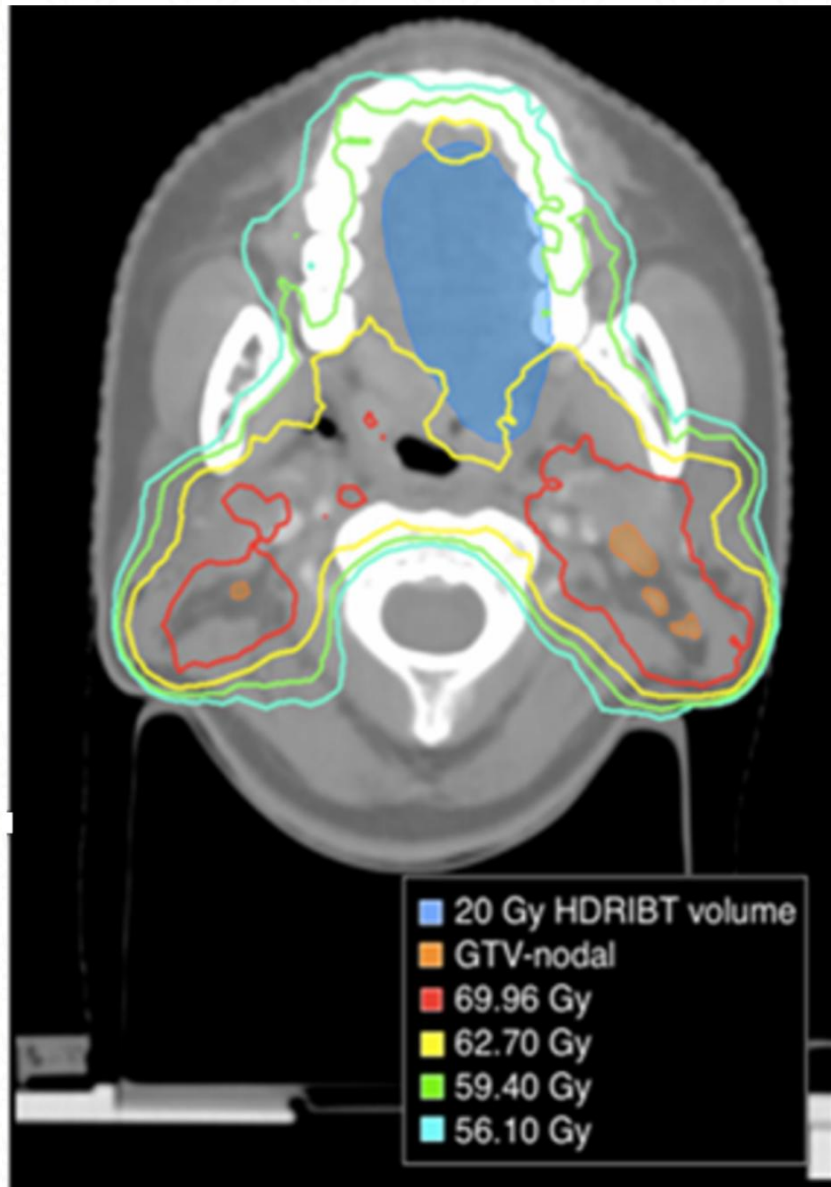
Interstitial brachytherapy applicator insertion



HDRIBT Planning



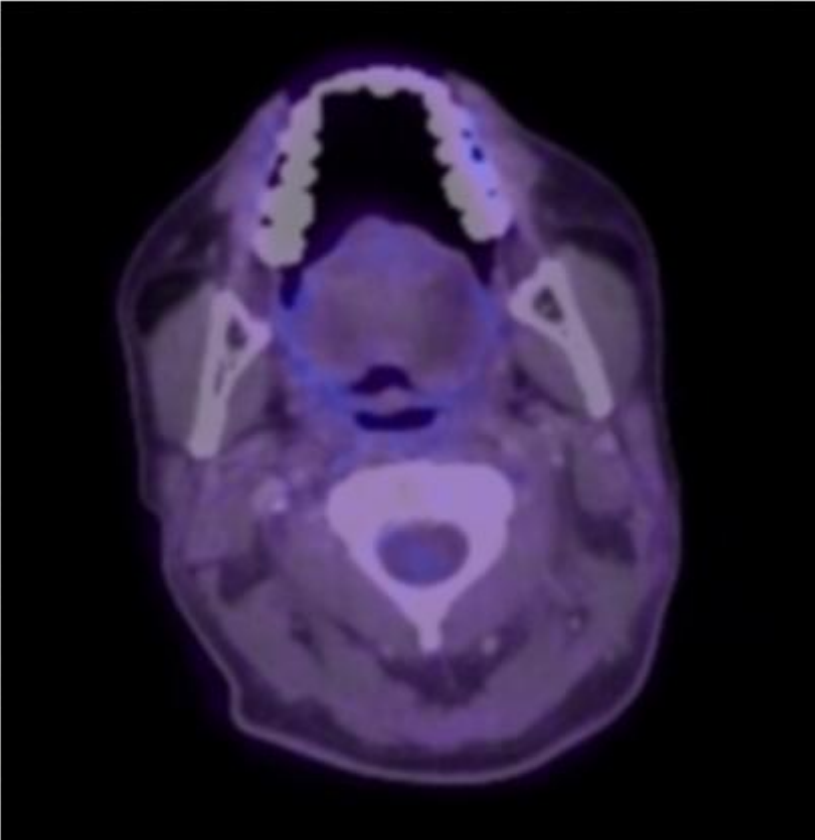
IMRT planning



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/m² 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.

Pre and Post HyBIRT PET Scan



Result

Thirty patients with confirmed OTSCC, median age 52 (60% female), underwent HyBIRT followed by PET scan at 3rd and repeated at 6th month(for partial responders)

Median follow-up was 17 months.

All achieved metabolic complete response (mCR) at primary site, with 70% within 6 months and 30% later due to financial constraints.

3/30 (10%) patients had uptake at the regional node, 4/30 (13.3 %) had distant uptake

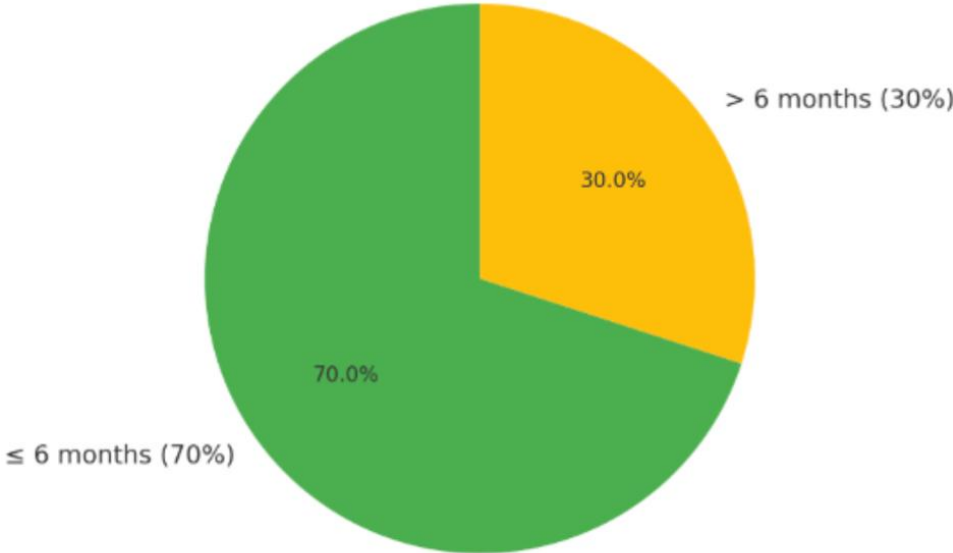
Grade 3 toxicity occurred in 2 patients (6.7%) dysphagia and osteoradionecrosis, while the rest had Grade 1–2 toxicity.

At reporting, 23 patients (76.7%) were alive, and 4 (13.3%) had died from OTSCC.

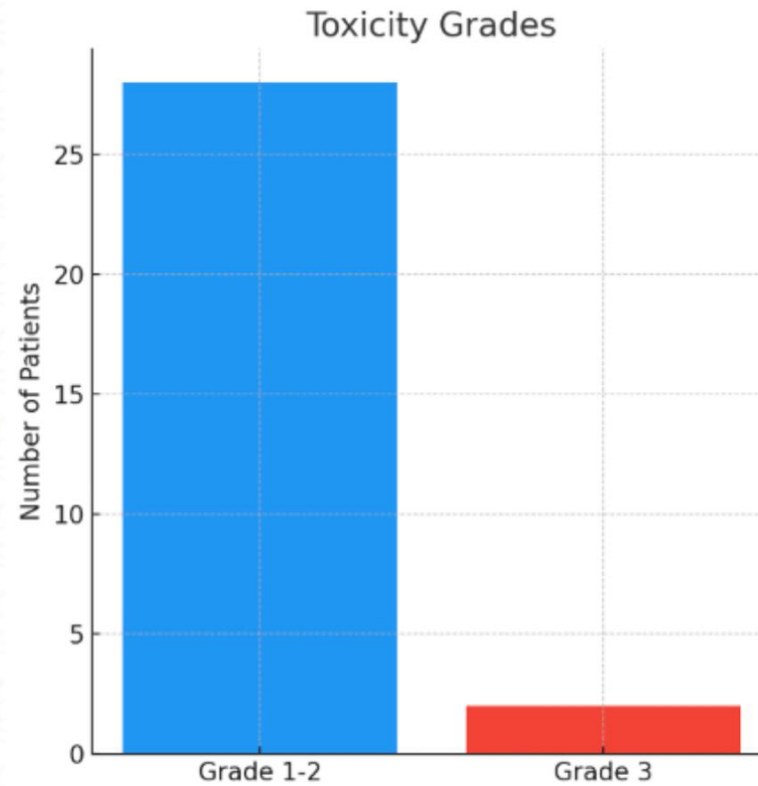
Characteristics	number/ %
Gender	
Male	12/ 40
Female	18/ 60
Median age (range) years	52 (20 – 70)
Smoker	
Yes	1/ 3.33
No	25/ 83.33
Ex-smoker	3/ 10
HPE	
WD SCC	16/ 53.33
MD SCC	14/ 46.67
T stages	
T1/T2	11/ 30
T3/T4a	19/ 53.33
N stages	
N1	2/ 13.33
N2	28/ 36.67
Tumor position	
Right	14/ 46.67
Left	16/ 53.33
Midline involvement	
Yes	12/ 40
No	16/ 53.33
Median number of BT catheters (range)	9 (4 – 19)
Mean overall treatment time (range) days	63 (55 – 86)
Median follow up (range) months	17 (5 – 69)
HPE: histopathological examination; WD SCC: well differentiated squamous cell carcinoma; MD SCC: moderately differentiated squamous cell carcinoma; T: tumor; N: nodal; BT: brachytherapy	

Result : mCR

Time to Achieve mCR

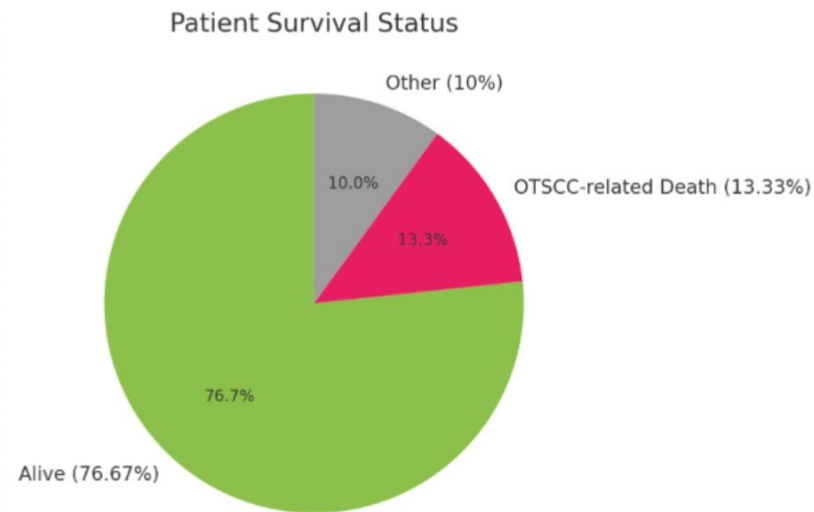


Result : Toxicity



Toxicity data has been presented in ESTRO Meets ASIA 2024 , ESTRO Glasgow 2024

Result : Survival status



Survival data for HyBIRT prospective study has been presented in ESTRO 2023 , 2025

Conclusion ;

1: HyBIRT has potential not only preserving both organ and function, but also good loco-regional control with favourable toxicity profiles. However , a larger and longer prospective study is needed to prove this finding.

2: PET scan is a reliable tool to evaluate post HyBIRT response

Thank you for your kind attention
Q&A

