Post ESTRO 2025 AFRIQUE DU NORD

Société Marocaine de Cancérologie
الجمعية المغربية لداء السرطان

STOR

BY SMC/STOR

LE 28 MAI 2025 À 18H00 (GMT+1)

Radiothérapie des cancers ORL : Avancées et perspectives – ESTRO 2025

Congrès ESTRO 2025, Vienne, Autriche 2 au 6 mai 2025

Sabrine TBESSI, Asma FALFOUL

Sousse/Monastir, TUNISIA

Introduction

- Les cancers ORL représentent un défi majeur en oncologie radiothérapie.

- Présenter les dernières avancées discutées lors de l'ESTRO 2025.

Etudes cliniques Phase III:

- ***CompARE trial:*** impact de l'introduction de '5+5' lors du contourage en terme d'efficacité et en terme de toxicité

- ***OPEN trial:*** l'optimisation de l'expérience des patients lors de l'irradiation des tumeurs ORL

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CompARE trial

Impact of introduction of '5+5' contouring on efficacy and swallowing outcomes in the phase III randomised CompARE trial

Charles Fong
On behalf of the CompARE trial group

Hisham Mehanna, Andrew Hartley, Charles Fong, Piers Gaunt, Paul Sanghera, Martin Forster, Anthony Kong, Mehmet Sen, Dinos Geropantas, Rafael Moleron, Staya Garikipati, Joanna Mackenzie, Georgina Casswell, Eleanor Aynsley, Amy Ward, Fitsum Ghebretinsea, Isla Humphreys, Claire Gaunt, Elizabeth Miles, Zohal Nabi

CompARE Trial

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CompARE Trial

CompARE: Phase III open label randomised control trial using adaptive multi-arm, multistage (MAMS) design

Oropharynx SqCC

Intermediate and High risk groups

Cisplatin + RT (70Gy in 35#) = SOC

+/- interventions

29 centres across UK & ROI

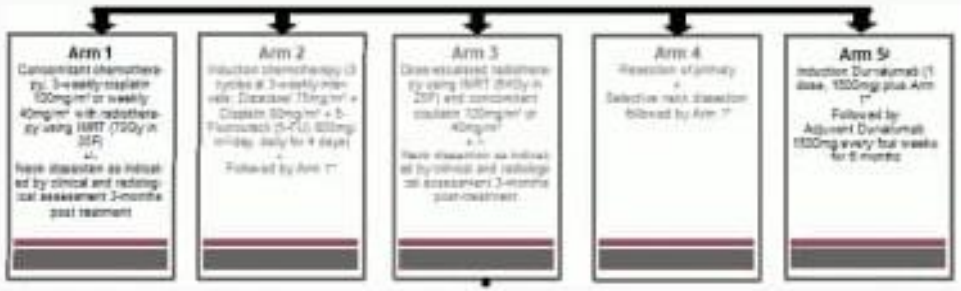
Recruitment = 2015 July to 2024 Jan

SOC (n=397) and SOC+Durvalumab (n=282)

Closed early: arm 2 (n=10), arm 4 (n=2), arm 3 (n=85) [recruitment; futility]

Patients with intermediate and high-risk OPC randomised between trial arms

(age 18-70, ECOG PS 0-1, Fit for CRT)



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CompARE Trial : Population

Baseline Characteristics

Baseline Characteristic		Standard (403) N (%)	5+5 (276) N (%)	Overall (679) N (%)
Treatment Arm				
	Standard of Care	261 (65)	136 (49)	397 (58)
	Standard of Care + Durvalumab	142 (35)	140 (51)	282 (42)
Primary Sub-site				
	Base of Tongue	143 (35)	98 (36)	241 (35)
	Tonsil	185 (46)	128 (46)	313 (46)
	Palate	7 (2)	5 (2)	12 (2)
	Combination (base of tongue & tonsil)	30 (7)	24 (9)	54 (8)
	Combination (other)	38 (10)	21 (8)	59 (9)
Feeding tube at baseline				
	No	333 (83)	261 (95)	594 (87)
	Yes	70 (17)	15 (5)	85 (13)
OPC Risk Strata				
	Intermediate	338 (84)	235 (85)	573 (84)
	High	65 (16)	41 (15)	106 (16)
P-16 status				
	Positive	338 (84)	233 (84)	571 (84)
	Negative	65 (16)	43 (16)	108 (16)
Sex				
	Male	330 (82)	231 (84)	561 (83)
	Female	73 (18)	45 (16)	118 (17)

Baseline Characteristic		Standard (403) N (%)	5+5 (276) N (%)	Overall (679) N (%)
T-stage (TNM v7)				
	T1	40 (10)	16 (6)	56 (8)
	T2	92 (23)	63 (23)	155 (23)
	T3	59 (13)	25 (9)	84 (12)
	T4a	202 (50)	150 (54)	352 (52)
	T4b	10 (2)	22 (8)	32 (5)
N-stage				
	N0	23 (6)	19 (7)	42 (6)
	N1	44 (11)	25 (9)	69 (10)
	N2a	12 (3)	8 (3)	20 (3)
	N2b	201 (50)	135 (49)	336 (49)
	N2c	111 (28)	69 (25)	180 (27)
	N3	12 (3)	20 (7)	32 (5)
Smoking Status				
	Never	80 (20)	51 (18)	131 (19)
	Ex	205 (51)	164 (59)	369 (54)
	Current	118 (29)	61 (22)	179 (26)
ECOG Status				
	0	308 (76)	225 (82)	533 (78)
	1	95 (24)	51 (18)	146 (22)
Age				
	Median (IQR)	59 (53, 64)	58 (54, 63)	58 (54, 63)

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CompARE Trial : Protocole de la RT

Radiotherapy Completion Rate

Radiotherapy (70Gy in 35#) completion rate balanced across the 'standard 10+0' contouring and '5+5' contouring cohorts

Radiotherapy Parameter		Standard (403) N (%)	5+5 (276) N (%)	Overall (679) N (%)
Treatment Volume				
	Unilateral	54 (13)	30 (11)	84 (12)
	Bilateral	349 (87)	246 (89)	595 (88)
Delivered Total Dose (Gy)				
	70	399 (99)	271 (98)	670 (99)
	Other	4 (1)	5 (2)	9 (1)
Delivered Total Fractions (N)				
	35	398 (99)	271 (98)	669 (99)
	Other	5 (1)	5 (2)	10 (1)
Neck Dissection at 3 months				
	No	380 (94)	265 (96)	645 (95)
	Yes	23 (6)	11 (4)	34 (5)

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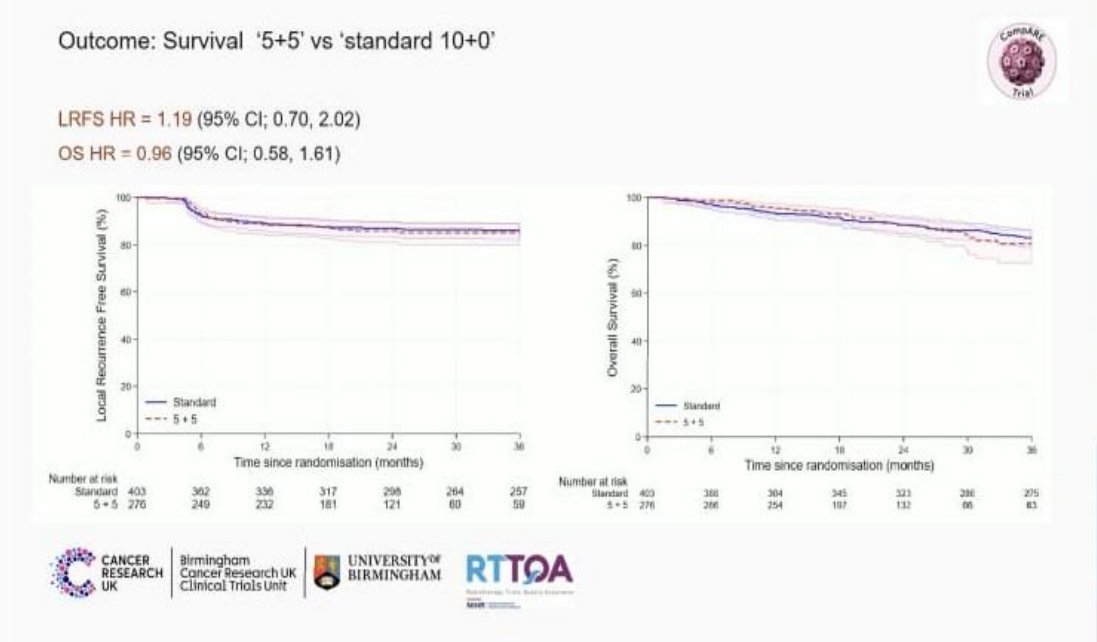
CompARE Trial : Résultats

- **La survie sans récidive locale à 36 mois :**
  - Bras Standard 85%: (IC 95%: 81-88%)
  - Bras (5+5) 87% : (IC95%: 82-91%)

Pas de différence en survie sans progression locale

HR=0,98 (IC: 95%; 0,57; 1,69)

- **SG à 36 mois:**
  - Bras Standard 82%:(IC 95%: 79-86%
  - Bras (5+5) 80% : (IC 95%: 70-87%)



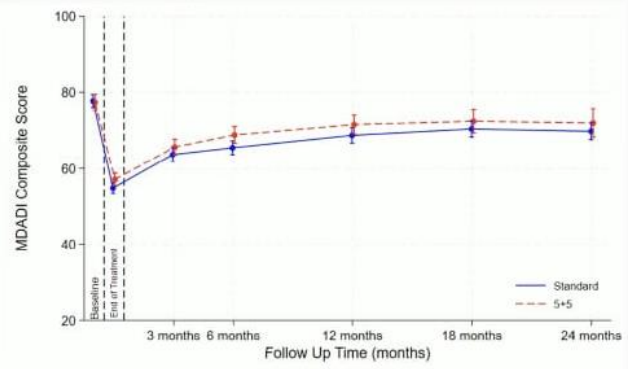
CompARE Trial: Toxicités

Outcome – gastrostomy and feeding tube utilisation rate

At baseline inserted: 'Standard 10+0' = 70/403 (18%) vs '5+5' = 15/276 (5%)

Timepoint	Standard N (%)	5+5 N (%)	Overall N (%)
Week 1	231/361 (64)	131/220 (60)	362/581 (62)
Week 7	334/385 (87)	199/260 (77)	533/645 (83)
Month 1	342/415 (82)	206/296 (70)	548/711 (77)
Month 6	112/381 (29)	64/261 (25)	176/642 (27)
Month 12	45/336 (13)	25/229 (11)	70/565 (12)
Month 24	13/299 (4)	3/115 (3)	16/414 (4)

Outcome – MDADI swallow



statistically significant 2 points improvement

Bénéfice non significatif « cliniquement » en terme de dysphagie

CompARE Trial: Toxicités

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Outcome – other toxicity measures – no signal for significant difference

Acute toxicities (week 1 to 3 months post-RT)

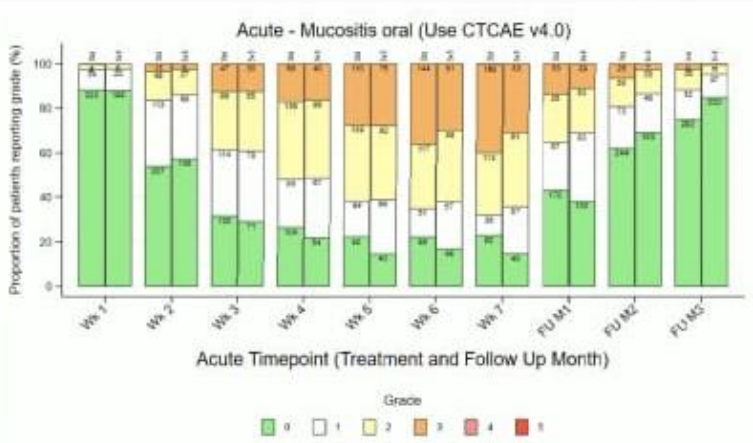
mucositis (CTCAE v3 and v4)

radiation dermatitis

dysphagia

RTOG Late

Salivary, Skin, Subcutaneous tissue, mucous membrane, oesophagus



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Pas de Bénéfice significatif en terme de:

-Toxicités aigues

-Toxicités tardives

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Discussion

Discussion

Recruitment period encompassed paradigm shift in delineation technique – examine effect of technique change

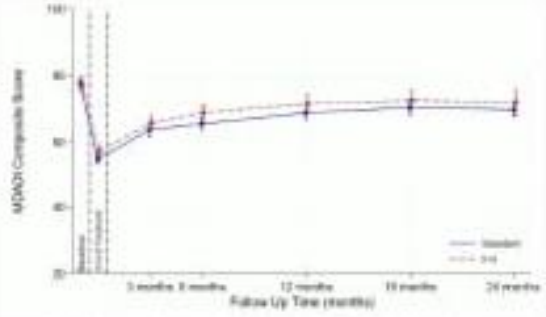
- n ~ 400 + 280 (relatively balanced characteristics)
- robust prospective RTQA and outcomes follow-up

Oropharynx intermediate and high-risk cohort

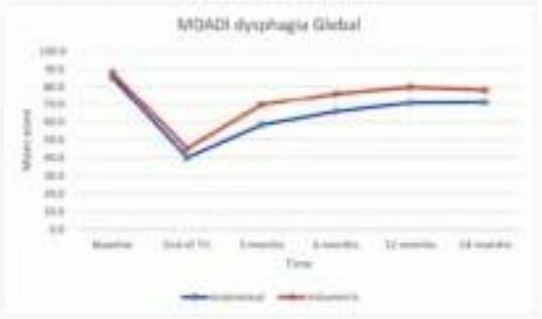
- Disease control / survival – safety signal
  - Comparison of 3-year local control using DAHANCA radiotherapy guidelines before and after implementation of 5mm geometrical GTV to high-dose CTV margin Zukauskaite et al, Radiother Oncol 2024
- Toxicity / QoL
  - ?marginal benefit from 10+0 to 5+5 (vs anatomical to 10+0)

Other factors

- Dose for intermediate CTV
- Clinician confidence / Delineation bias of GTV?
- Disease volume (low-risk vs intermediate/high-risk)
- Durvalumab effect with RT



CompARE trial (intermediate/high-risk OPC cohort)
'standard 10+0' vs '5+5' outlining
Fong et al, ESTRO 2025



De-Escalate trial (low-risk OPC cohort)
anatomical-based outlining vs volumetric outlining
Vreugdenhil et al, Clin Onc 2021 https://doi.org/10.1016/j.clon.2021.07.009

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Conclusion

Introduction of '5+5' (n=276) vs standard '10+0' (n=403) contouring technique

(high dose 70Gy; intermediate dose 63Gy)

intermediate and high risk OPSCC within the CompARE trial

No apparent detriment in efficacy and survival outcome

Small improvement in swallowing statistically (MDADI 2 points), not considered clinically significant

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Saint Luke's
Radiation Oncology
Network

OPEN Trial

Optimising Patient Experience in head and Neck radiotherapy

Phase 3 RCT comparing Closed versus Open face masks

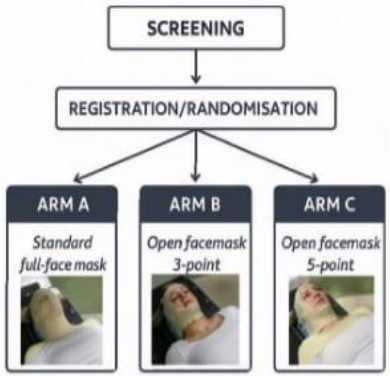
Prof Sinead Brennan
Director of Research
St Luke's Radiation Oncology Network, Dublin



OPEN Trial: Randomisation et méthodologie

OPEN TRIAL: Methods

- Largest randomised trial of Open faced masks: N= 201
- Included radical RT for head and neck cancer pts
- **Excluded pts with known claustrophobia**
- Randomised 1:1:1
- Combination of frequentist & Bayesian statistics
- Automated data parsing pipelines & analysis scripts using Python



ClinicalTrials.gov: NCT06327139
Protocol Accepted for Publication: HRB Open Access Journal

Intrafraction motion: A synergistic approach

- Pre-planned interim safety analysis
- First 56 patients
- Intrafraction motion assessed using both weekly pre + post CBCT, and daily SGRT synergistically
- CBCT - deviations in translational + rotational dimensions based on bony alignment
- SGRT - continuous monitoring of surface motion
- Bayesian analysis to determine the equivalence across mask types and measurement techniques

ESTRO digital poster: E25-444 - Open Trial Intrafraction motion analysis

OPEN Trial: Objectifs

OPEN Trial Endpoints:

Primary Objectives:

1. Compare the setup accuracy of three different types of masks

Secondary Objectives:

1. Compare patients' distress levels at beginning and end of RT using the psychological measure General Health Questionnaire-12 (GHQ-12) & additional questions on comfort, tolerability & overall experience
2. Evaluate potential advantages of Surface Guided Radiotherapy (SGRT) as a tool for intra-fraction motion monitoring compared to CBCT imaging
3. Assess impact on treatment set up time and use of resources on the treatment unit

OPEN : résultats démographiques

Results Demographics

- Trial accrual: 201: Jan 2024 - April 2025
- TC/RTT led consent process
- Complete data: N = 148
- Broad inclusion criteria
- H+N Radical RT 30-35#

Demographic Data		
Number of patients		148
Type of mask	Arm A - Standard	55 (37.2%)
	Arm B - 3 point open	48 (32.4%)
	Arm C - 5 point open	45 (30.4%)
Sex	Male:	110 (74%)
	Female:	38 (26%)
Height		163.8 cm ± 40.0 cm
Weight		73.6 kg ± 14.5 kg
Age		61.8 yrs. ± 10.4 yrs.
Site	Oropharynx:	68 (46%)
	Oral Cavity:	23 (16%)
	Other:	24 (16%)
	Larynx:	12 (8%)
	Hypopharynx:	11 (8%)
	Unknown Primary:	7 (5%)
	Nasopharynx:	3 (2%)
T - stage	T0:	3 (2%)
	T1:	19 (13%)
	T2:	38 (26%)
	T3:	43 (29%)
	T4a:	31 (21%)
	T4b:	5 (3%)
	TX:	39 (6%)
N - Stage	N0:	38 (26%)
	N1:	36 (24%)
	N2:	44 (30%)
	N3:	30 (20%)
M - Stage	M0:	147 (99%)
	M1:	1 (1%)
Treatment Purpose	Definitive Radical:	99 (67%)
	Adjuvant:	49 (33%)
Chemotherapy	Yes:	95 (64%)
	No:	53 (36%)

Population :

- 74% masculin
- 46% oropharynx
- Stades : Majoritairement localement avancé

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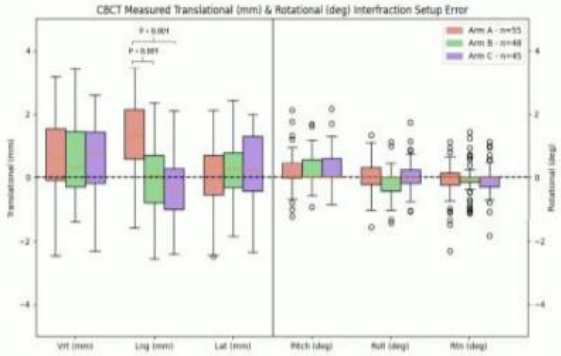
OPEN trial: objectif primaire

Primary Endpoint: Interfraction Motion



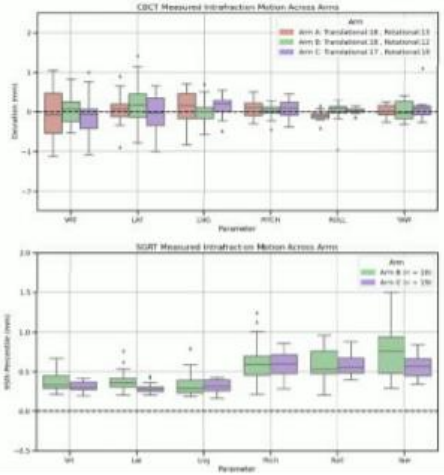
No statistically significant differences across Vert, Lat and Rotational dimensions among the three arms

Except in the long dimension, Arm-A closed mask was significantly larger than either open-face group. (p <0.001)

Difference did not translate into differing PTV margins between arms in the long dimension.

Intrafraction Motion

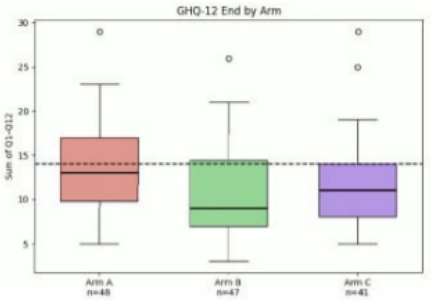
- Open-face masks show intrafractional stability comparable to closed masks.
- Mean CBCT deviations < 0.4 mm; 0.2 deg
  SGRT 95th percentile deviations: 0.4 mm; 0.8 deg
- Bayesian analysis: no clinically significant differences
- CBCT intrafraction margins: 1.8, 1.7 and 1.3 (mm)
  Margins consistent across masks, validated by SGRT data
- SGRT revealed transient deviations missed by CBCT



OPEN trial: objectifs secondaires

Patient Experience: GHQ 12

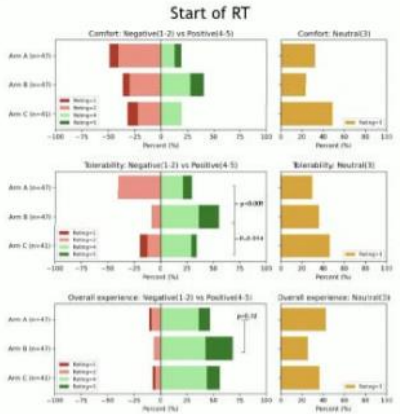
- **Threshold of GHQ-12 distress: 14***
- 92% questionnaire completion rate
- **GHQ 12 Distress levels: Start of RT**
  - 3 point open mask had lowest levels of distress
- **GHQ 12 Distress levels: End of RT**
  - Median distress scores significantly lower for Arm B 3 point open mask (p=0.012)
- Patients Distress > threshold (14) @ End of RT:
  - Arm A closed: 45% pts
  - **Arm B 3 point Open: 27% pts**
  - Arm C 5 point Open: 32% pts



* GHQ-12 tolerance references:
Scott HR, et al., *The Lancet Psychiatry*. 2023; Lundin A et al., *Public Health*. 2016; Goldberg DP., et al. *Psychol Med*. 1997; Comotti A et al., *BMC Psychol*. 2024

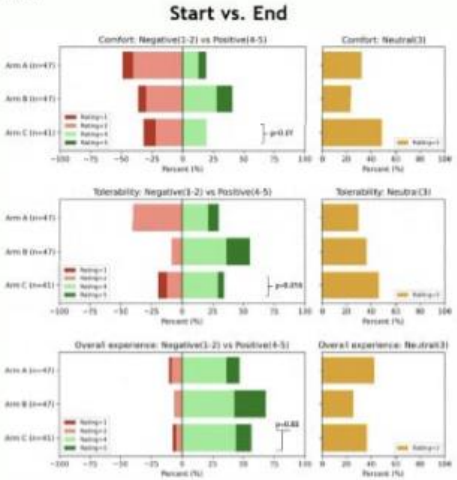
Patient Experience: Questionnaires: Start of RT

- 3 point Open masks rated best (Likert Scale 1-5)
- **Tolerability:**
  - 3-point open mask significantly higher ratings vs closed and 5-point open (mean rating, p<0.05)
- **Overall experience:**
  - 3-point open significantly higher ratings vs closed (mean rating, p<0.05)



Patient Experience: Questions: Start vs End RT

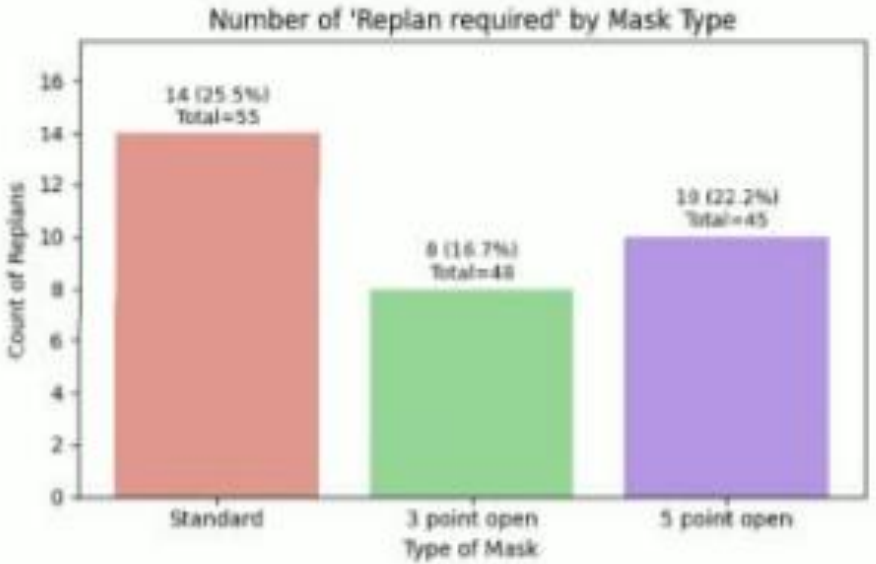
- Did mask tolerance and experience improve during RT?
- All ratings improved during RT
- **Tolerability/comfort/Overall experience:**
  - 5 point open mask (Arm C) improved from start to end RT (p<0.05)
  - No signif improvement in closed mask (arm A) from start to end RT
  - 3 point open (arm B) maintained highest proportion of positive and very positive ratings across all Qs.



OPEN trial: Replanification

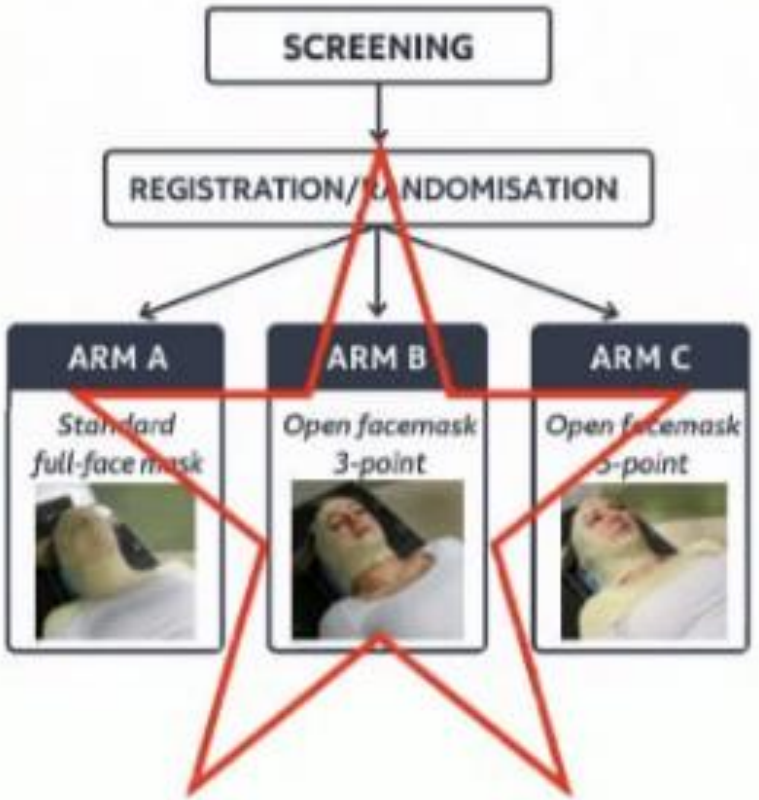
Resource Utilisation: CBCT + Replan Rates

- Average no. of CBCTs per patient per arm:
  1.1 +/-0.1 CBCTs
- No differences demonstrating that re-setup rate due to mask type was comparable
- No. of replans required lowest in 3 point open mask:
  - 16.7% Arm B 3 point open vs 25.5% Arm A closed
- Change in Mask required:
  - 3/92 (3%) open masks changed to closed masks
  - 7/53 (13%) closed masks changed to open masks
- Note this is a non claustrophobic population !



OPEN trial: conclusion

- First reported results of a RCT of fully open 3-point mask
- 3 point OPEN masks superior:
  - Improved patient experience
  - Equivalent setup accuracy
  - Reduced replanning rates
  - No additional set up CBCTs
- Potential benefit paediatric + neuro-oncology patients



Études cliniques marquantes PHASE I/II

- ***HYDRA*** : RT hypofractionnée avec redistribution de dose.

- ***STEREOPOSTOP GORTEC 2017-03*** : SBRT postopératoire pour cancers oropharyngés.

HYDRA : RT hypofractionnée avec redistribution de dose

Erasmus MC Cancer Institute HollandPTC

HYpofractionated Dose-redistributed RAdiotherapy (HYDRA) with protons and photons

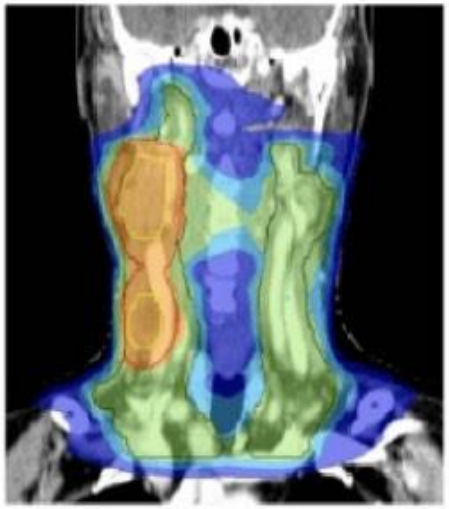
Dosimetric comparison and preliminary results of HYDRA photon cohort

Pascal Gunsch, MD MSc (PhD Candidate)
Jos Elbers, MD PhD (Principal Investigator)
Erasmus MC, HollandPTC (Netherlands)

Pascal Gunsch
Netherlands

HYDRA :

Standard of care
35 fractions



70 Gy

54.25 Gy

with

7 × weekly cisplatin 40mg/m²

7 weeks of treatment
→ large burden!

Radiation-induced lymphopenia
→ associated with worse OS[1]

Can we shorten the treatment and reduce lymphopenia,

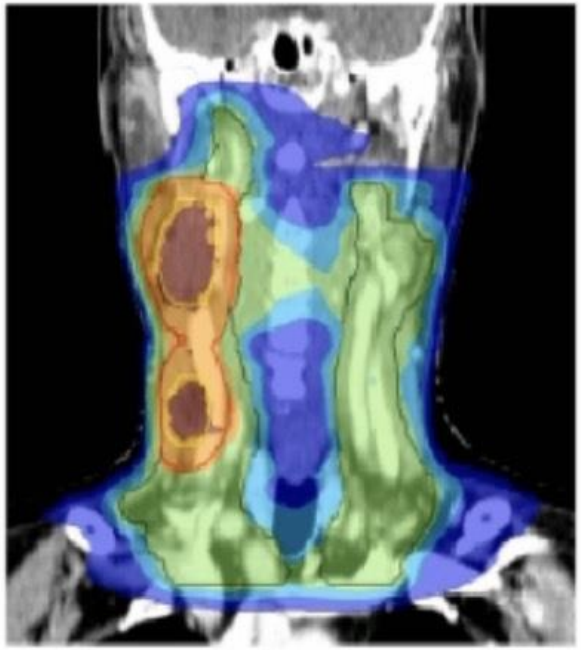
without compromising efficacy?

Pascal Gunsch
Netherlands

1 Damen, Kroese & van Rossum et al, IJROBP 2021

HYDRA :

Standard of care
35 fractions



with

7 × weekly cisplatin 40mg/m²

HYDRA
20 fractions

Elbers, Gunsch et al., BMC Cancer 2023

GTV–3 mm → 59 Gy (Dmean)
Negative PTV margin

Inhomogeneous boost to GTV
Isotoxic?

Late toxicity EQD2: 70 Gy (α/β = 3 Gy)

70 Gy → 55 Gy

Hypofractionation
Equally effective?

Accelerated repopulation modelling: Shuryak, 2018, 2019
HYPNO RCT: Bentzen, presented at ASTRO 2023

54.25 Gy → 40 Gy

Lower elective dose
Equally effective

UPGRADE-RT: vd Bosch & Kaanders, JCO, 2025

with

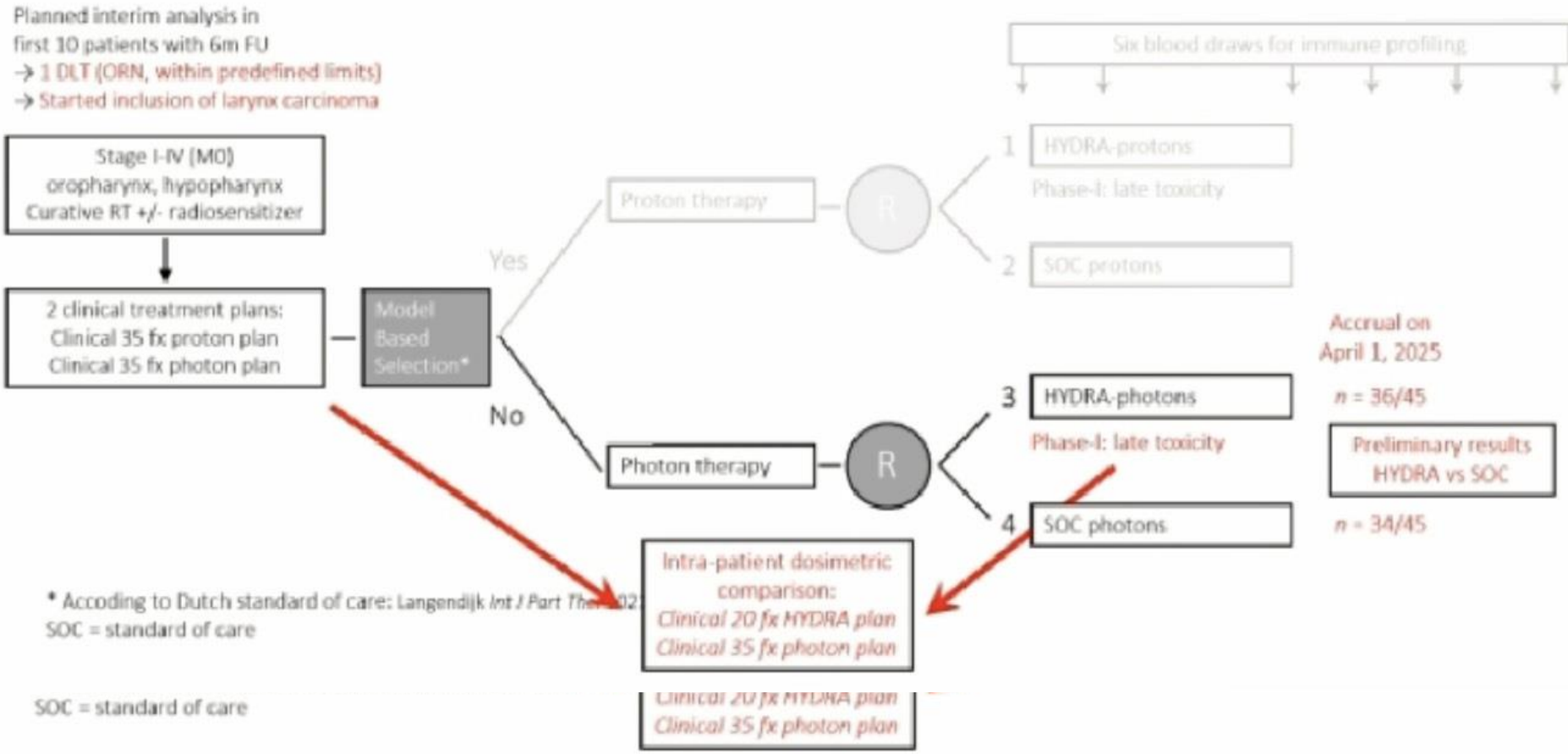
4 × weekly cisplatin 40mg/m²

Cisplatin 40mg/m² weekly works as a radiosensitizer, with no reduction of distant metastases: Petit, Lancet Oncol 2021

HYDRA :

HYDRA study design

Elbers, Gunsch et al., BMC Cancer 2023



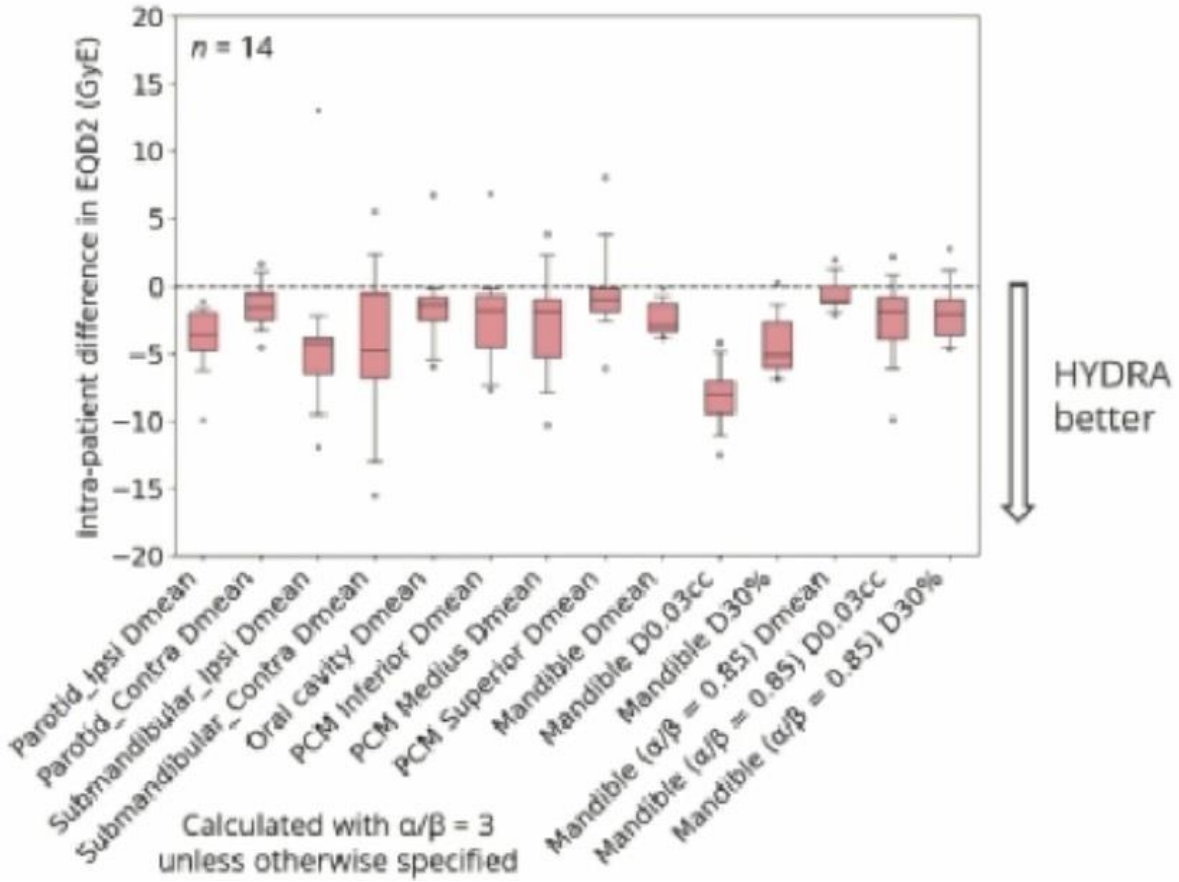
SOC = standard of care

HYDRA :

Erasmus MC Cancer Institute HollandPTC

HYDRA reduces EQD2 dose to organs at risk

Gunsch, Elbers et al., manuscript submitted



HYDRA :

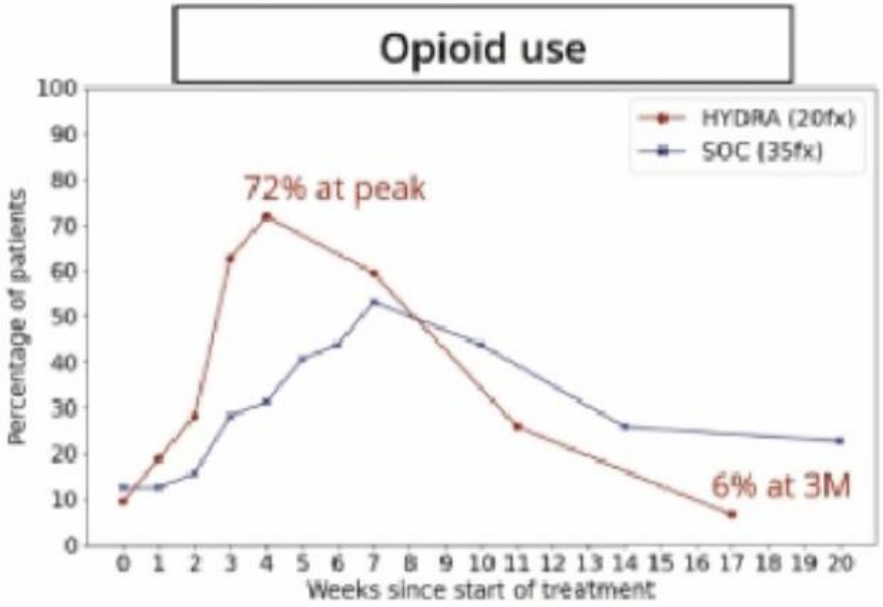
HYDRA photon patient characteristics as of April 1, 2025

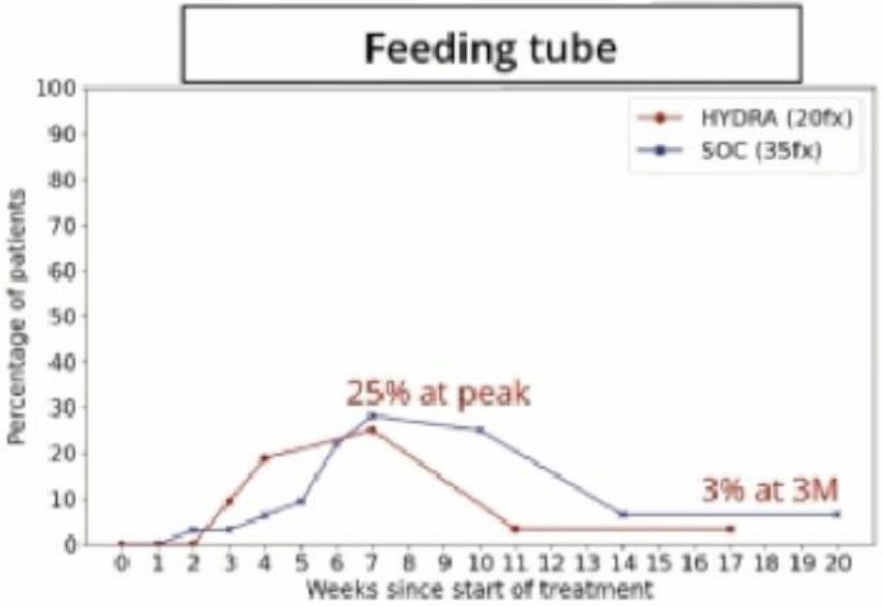
	HYDRA-photons (*n* = 36)	SOC-photons (*n* = 34)
Tumour site		
- Oropharynx	26	28
- Hypopharynx	7	4
- Larynx	3	2
HPV (p16) for oropharynx		
- Positive	15	17
- Negative	8	8
- Unknown	3	3
T stage		
- T1/T2/Tx	26	21
- T3/T4	10	13
N stage		
- N0/N1	26	24
- N2/N3	10	10
Concurrent chemotherapy		
- Cisplatin/Carboplatin	16	16
- Cetuximab	0	2
- None	20	16

HYDRA :

Acute toxicity of HYDRA photons

Acute toxicity is manageable and transient





HYDRA :

Late toxicity of HYDRA photons

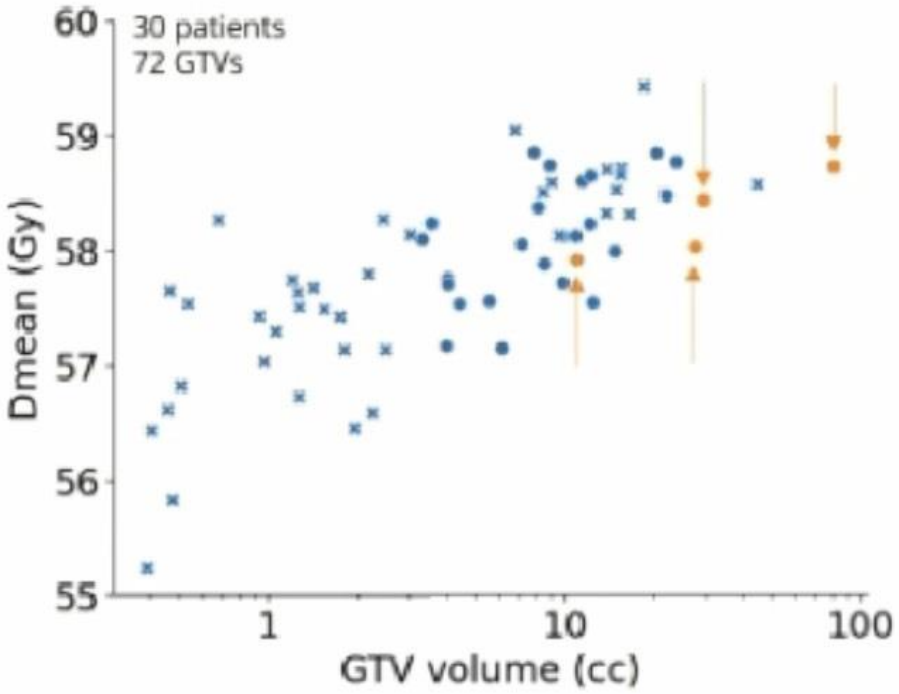
For all patients with ≥3 months follow-up

	HYDRA-photons (*n* = 30)	SOC-photons (*n* = 30)
Median FU (range)	12 months (3.5 – 24.7)	13 months (3.7 – 24.5)
Osteoradionecrosis of jaw (grade ≥2)	1	1
Radiation ulcer (grade ≥2)	2	1
Dysphagia >3 months (grade 3)	0	2
Laryngeal edema (grade 3)	0	1
Possibly related: Carotid stenosis (grade 3)	1	0
Total severe late toxicity events	**4**	**5**

HYDRA :

Single GTV analysis for HYDRA photons

Larger GTVs have a higher mean dose



- Tumour GTV
- Lymph node GTV

In field failure

Complete response

Median FU of 12 months (range 3.5 – 24.7)

HPV+: No failures
HPV–: Failure in 4/17 patients (24%)

ESTRO 2025 2-6 May 2025 Vienna, Austria

HYDRA :

Conclusions

- Two parallel phase I trials for HYDRA-protons and HYDRA-photons
- ✔ Interim analysis HYDRA-photons: only 1 DLT → additional inclusion larynx carcinoma
- ↓ HYDRA has lower EQD2 dose to all OARs
- Treatment in 4 weeks with manageable acute toxicity
- ? Predominantly HPV positive patients, more data needed for HPV negative tumours
- ? Too early for definitive evaluation of late toxicity and efficacy, follows next year

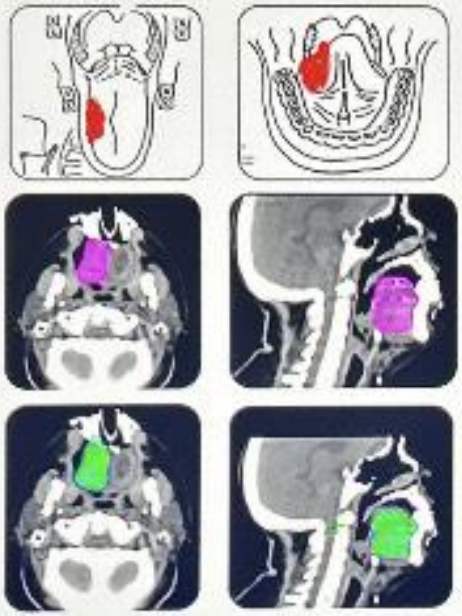
STEREOPOSTOP GORTEC 2017-03 :

ESTRO 2025 2-6 May 2025 Vienna, Austria

ESTRO2025 10:58 Postoperative SBRT for Early-Stage Oropharyngeal and Oral Cavity Cancers wit...

Plenary Hall

SBRT Technique Details



Patient Immobilization

Stereotactic thermoplastic mask with 5-point fixation

Stereotactic Positioning accuracy

Target Definition

CTV = surgical bed + 5 mm margin

PTV = CTV + 2 mm geometric margin

Dose Prescription

36 Gy in 6 fractions (6 Gy per fraction)

Every other day schedule over 2 weeks

Julian Biau
France

Question

#ESTRO25

ESTRO 2025
2-6 May 2025
Vienna, Austria

BILAN INCLUSION

- Cavité buccale ou Oropharynx opéré
- Marge à risque *(< 5mm ou positive R1 ou incertaine)*
- pT1 ou pT2
- N0 après chirurgie ou pN1 sans rupture capsulaire

Inclusion

Fraction F1 F2 F3 F4 F5 F6

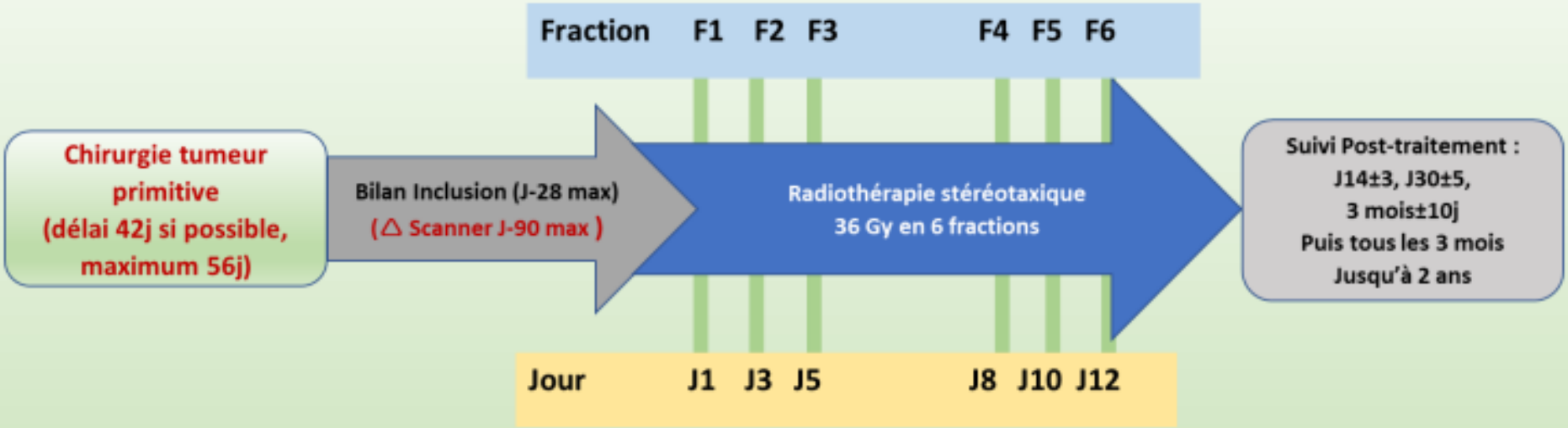
Radiothérapie stéréotaxique
36 Gy en 6 fractions

Jour J1 J3 J5 J8 J10 J12

SUIVI POST TRAITEMENT

- J14±3
- J30±3
- 3MOIS±10jours
- puis tous les 3MOIS JUSQU'A 2 ANS

SCHEMA DE L'ETUDE



ESTRO 2025 11:00 **Postoperative SBRT for Early-Stage Oropharyngeal and Oral Cavity Cancers wit...**

Plenary Hall

Julian Biau
France

Late Toxicity Results

13.6%
Grade ≥3 Toxicity

5%
Soft Tissue Necrosis
Transient in all cases (1 to 4,5 months)

9%
Osteoradionecrosis
Transient in all cases (3 to 9 months)
More frequent with CK (18% vs 4%)

Similar to brachytherapy
Late toxicities (grades 3-4)
Soft tissue necrosis: 10-25%
Ostéoradionecrosis: 5-10%

Similar to IMRT
Late toxicities (grades 3-4)
Ostéoradionecrosis: 10-11%

#ESTRO25

Efficacy Outcomes

Local Control
92% at 2 years

- 8 local recurrences
- Better in pT1 (2.9%) vs pT2 (12.7%)

Locoregional Control
84% at 2 years

- without local relapse

Similar to pT1-T2 pN0 under surveillance – 10%

Disease-Free Survival
73% at 2 years

Overall Survival
89% at 2 years

- 10/90 (11%) had died
- 3/10 due to initially treated cancer

Julian Biau
France

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Plenary H

Key Findings

STEREO POSTOP
GORTEC 2017-03

First Prospective Trial

Pioneering postoperative SBRT for early OCSCC/OPSCC

Toxicity-Efficacy Balance

Acceptable vs historical treatments

Treatment Alternative

Viable option to brachytherapy in expert centers

Extended Monitoring

Longer follow-up needed (beyond 2 years)

Julian Biau
France

Question

#ESTRO2

International Consensus Guidelines on the Delineation of radiationTherapy Target Volumes for Nasopharyngeal Carcinoma After Induction Chemotherapy

E25-4153 - International Consensus Guidelines on the Delineation of Radiotherapy Target Volumes for NPC after Induction Chemotherapy

ESTR 202

Head and neck

International Consensus Guidelines on the Delineation of Radiotherapy Target Volumes for Nasopharyngeal Carcinoma after Induction Chemotherapy Using a Two-Round Modified Delphi Survey

ESTRO 2025

Nejla Fourati[1], Warren Bacorro[2,3], Omar Nouri[1], Rayan Anthony Agas[2], Audrey Larnaudie[4], Lester Bryan Co[2], Hela Hammami[5], Clevelinda Calma[6], Melvin L.K. Chua[7,8], Chong Zhao[9], Jamel Daoud[1], Michael Benedict Mejia[2]

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Background

Induction chemotherapy (ICT) is a standard treatment for locally advanced nasopharyngeal carcinoma (NPC). However, radiotherapy (RT) target volume delineation protocols and dose level prescriptions vary significantly in published studies.

This study aims to develop *a consensus guideline to harmonize practices.*

Methods

The study involved ***multiple phases***:

- **PHASE 1** – Consensus Scope Definition through focus group discussions (FGD)
- **PHASE 2** – Evidence Gap Identification via a scoping review of guidelines and literature
- **PHASE 3** – Evidence Review and Synthesis from systematic reviews of experimental and observational studies
- **PHASE 4** – Drafting Consensus Statements through FGD
- **PHASE 5** – Consensus Voting via a modified Delphi process and RAM

The Task Force included radiation oncologists from ***intermediate- and high-endemicity regions*** with ***expertise in NPC***, ***evidence review***, and ***guideline development***.

The Consensus Panel (CP) was composed of relevant specialists from ***intermediate- and high-endemicity regions*** or with ***recognized expertise in the management of NPC*** in these settings. The CP included **25 experts**: *12 radiation oncologists, 3 clinical oncologists, 1 medical oncologist, 4 radiologists, 1 nuclear medicine specialist, 2 medical physicists, and 2 dosimetrists.*

Using a **modified e-Delphi method**, questions were assessed with responses:

strongly agree (SA) | Agree (A) | Disagree (D) | strongly disagree (SA)

Agree | Disagree

Consensus was reached if **>50% voted:**

agree (SA+A) or ***disagree*** (SD+D).

- Uniform (U) ***100%***
- Strong (S) ***≥85%***
- Moderate (M) ***75-84%***
- Weak (W) ***<75%***

Results

Four clinical situations (CS) after ICT for NPC were addressed and **2 rounds of Delphi** voting were realized:

CS1. Timing of chemoradiation: ***Uniform consensus*** to *start (chemo)RT 3–4 weeks or ≤30 days after ICT.*

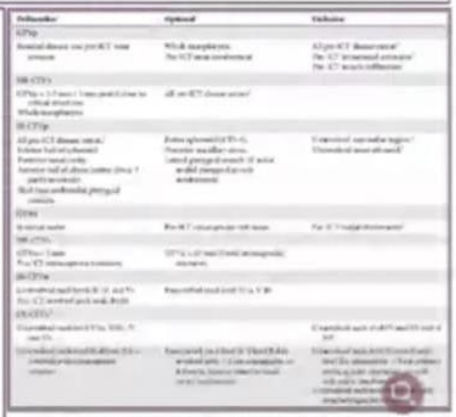
CS2. Imaging modalities: ***Uniform consensus*** *for simulation scans after ICT. Pre-ICT simulation CT* was optional (**weak consensus**). *MRI with contrast and DWI sequences* were the preferred imaging modalities (**strong consensus**).

CS3. Dose and fractionation: **Uniform consensus** for a *33-fraction schedule delivering 59.96 Gy, 60 Gy, and 54 Gy to High-risk, Intermediate-risk, and Low-risk volumes*, respectively. A *35-fraction scheme* was also supported (strong to weak consensus).

CS4. RT target volumes: **Uniform consensus** to delineate *High-risk and Intermediate-risk primary and nodal target volumes*. **Weak consensus** for defining *Low-risk nodal volumes*. **The target volumes should be delineated considering the response to ICT.**

Conclusion

This international consensus guideline provides a standardized framework for treatment timing, imaging modalities, and radiotherapy target volume delineation in nasopharyngeal carcinoma after induction chemotherapy. A key recommendation is to adapt target volumes according to tumor response, supporting a more individualized and response-based approach. Response-adapted delineation strategies may optimize treatment precision while potentially reducing unnecessary radiation exposure and toxicities. These guidelines aim to harmonize clinical practice and facilitate comparability across future studies.



Guideline on target volume delineation after ICT

Using a **modified e-Delphi method**, questions were assessed with responses:

Consensus was reached if **>50% voted:** ***agree*** (SA+A) or ***disagree*** (SD+D).

Methods

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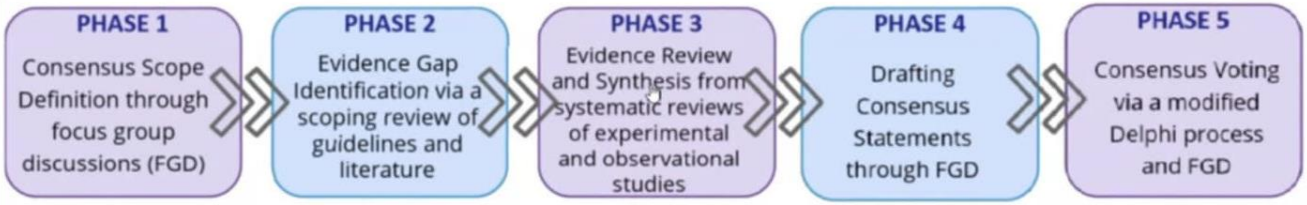

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CS4. RT target volumes: **Uniform consensus** to delineate *High-risk and Intermediate-risk primary and nodal target volumes*. **Weak consensus** for defining *Low-risk nodal volumes*. **The target volumes should be delineated considering the response to ICT.**

Table 4 Guideline recommendations on radiation therapy (RT) target volume delineation after Induction chemotherapy (ICT) for nasopharyngeal carcinoma (NPC)

Delineation*	Optional†	Exclusion‡
GTVp		
Residual disease and pre-ICT bone invasion	Whole nasopharynx Pre-ICT sinus involvement	All pre-ICT disease extent† Pre-ICT intracranial extension† Pre-ICT muscle infiltration†
HR-CTVp		
GTVp + 3-5 mm / 1 mm post if close to critical structures Whole nasopharynx	All pre-ICT disease extent‡	
IR-CTVp		
All pre-ICT disease extent.‡ Inferior half of sphenoid. Posterior nasal cavity. Anterior half of clivus (entire clivus if partly involved). Skull base and medial pterygoid muscles.	Entire sphenoid (if T3-4). Posterior maxillary sinus. Lateral pterygoid muscle (if initial medial pterygoid muscle involvement).	Uninvolved suprasellar region.* Uninvolved lower ethmoid.†
GTVn		
Residual nodes	Pre-ICT extracapsular extension	Pre-ICT nodal involvement†
HR-CTVn		
GTVn + 5 mm Pre-ICT extracapsular extension	GTVn + 10 mm if with extracapsular extension	
IR-CTVn		
Uninvolved neck levels II-III and Va Pre-ICT involved neck node levels	Uninvolved neck level VIIa, VIIb	
LR-CTVn§		
Uninvolved neck level VIIa, VIIb, IV, and Vb.		Uninvolved neck level IV and Vb only if N0†
Uninvolved neck level Ib if level IIA is involved with extracapsular invasion.	Uninvolved neck level Ib if level IIA is involved with > 2 cm adenopathy, or if there is massive anterior nasal cavity involvement.	Uninvolved neck level Ib even if with level IIa adenopathy < 2 cm without extracapsular extension*, or with soft palate involvement* Uninvolved neck level Ib even if with oropharyngeal involvement.†

MERCI DE VOTRE ATTENTION

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