



# Time Required for Prophylactic Oral Care in Head and Neck Cancer Patients Scheduled for Radiotherapy: A Single Center, Prospective Cohort Study

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## INTRODUCTION

- A longer waiting time towards initiating definitive treatment for Head and Neck Cancer (HNC) is a well-known problem and is an established indicator of poor quality of care being provided.<sup>1</sup>
- High oral disease burden and non-standardized dental processes, may increase waiting time to initiate Radiotherapy (RT) and may influence the ultimate prognosis.<sup>2</sup>
- Oral health is integral to the survivorship of HNC patients and may surface as a predominant factor influencing their quality of life after cancer cure.<sup>3</sup>
- Prophylactic oral care (POC) before RT is an adjunct, yet an integral process towards preparing patients for RT.
- **Time to be invested in the POC before RT in HNC patients remains unexplored.**

## AIM

To evaluate oral treatment time (OTT) in patients scheduled for RT following a standardized protocol with definite timelines.

The research plan was approved by the institute ethics committee

## METHODOLOGY

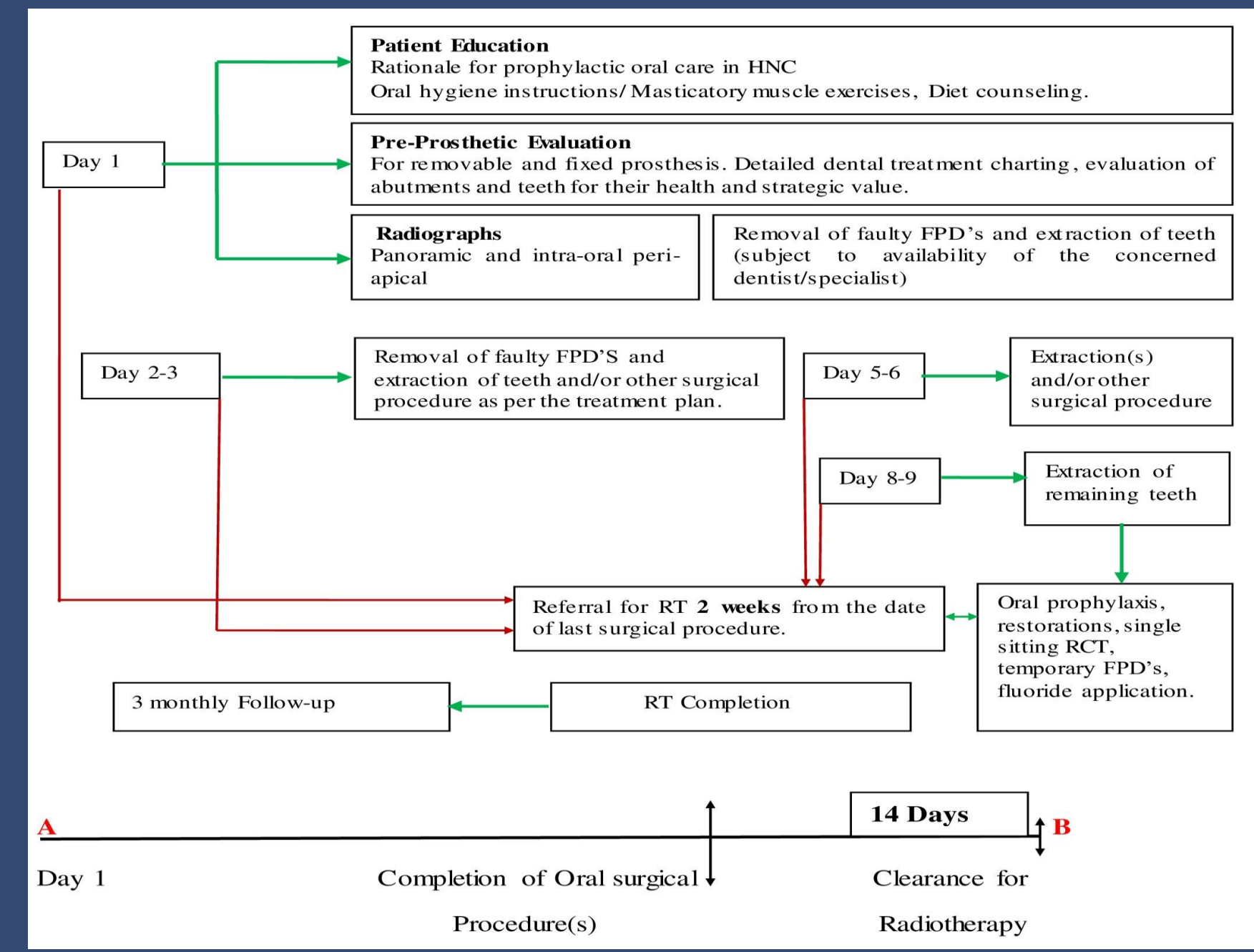
- Inclusion criteria:**
1. Age between 18 and 80 years
  2. Patients scheduled for conventional RT.
- Exclusion criteria:**
1. Patients requiring re-irradiation .
  2. Patients requiring palliative RT.

- The elements of the POC protocol and respective timeline is shown Figure 1.
- **OTT:** First oro-dental consultation to 14 days post oral surgery.
- Referral to the radiation oncologist on the day of the last oral surgical procedure to schedule an appointment for RT after a minimum 2 weeks.
- Need-based oral treatment and Fluoride varnish application in these 2 weeks.
- Date for 3-month follow-up in their dental cards with telephonic reminders.
- OTT and **days to start RT (DRT)** after obtaining dental clearance were noted.
- **Total time to RT (TTRT)** was calculated by adding OTT and DRT.
- Need for extraction(s) and incidence of osteoradionecrosis (ORN) was noticed up to 18 months after the completion of RT. Influence of gender, tumor stage, tumor site, mouth opening, and the number of teeth extracted on OTT were analyzed (Table 1).

## STATISTICAL ANALYSIS

SPSS 21.0 for Windows; IBM Corp., Armonk, NY, USA). Kruskal Wallis test for the level of differences in a group. Bonferroni test for Multiple comparisons. *P*-value ≤0.05 was considered statistically significant.

## ORAL CARE PROTOCOL



## RESULTS

- ❖ 333 patients; 275(82.6%) males, 58 (17.4%) females.
- ❖ Mean Age: 52.4±12.2 (18-79).
- ❖ 7237 teeth analyzed; 2425 (33.5%) extraction;
- ❖ 325 (97.6%) required one or more extraction.
- ❖ Mean OTT 21.0±6.2 days (1-57); Mean DRT 3.3±3.8 days (-2 to 33)
- ❖ Mean TTRT 23.9±7.3 (1-71).
- ❖ A statistically significant association: number of extractions and OTT
- ❖ 14 patients died before first follow-up. ORN: 5/319 patients (1.56%).

## DISCUSSION

- ❖ In 98.5% (328/333) patients, RT started in <42 days as advised by NCCN.
- ❖ Timely definitive treatment was started due to prompt two way referral system between Oral Health Care Center and Radiation Oncology.
- ❖ ORN (2<sup>nd</sup> and 3<sup>rd</sup> third molar region) in all 5 patients was managed conservatively due to early identification and prompt treatment.
- ❖ The **strength:** Conducted in a tertiary care center with complete co-ordination amongst team members.
- ❖ These may be seen as **limitations** in resource-limited healthcare settings.
- ❖ Results are not the outcome of a Randomized Controlled Trial due to the lack of true control.

Table 1. Covariates and Time Consumed for POC

Covariates	Number of patients (%)	Mean time for clearance (Days/S.D)	Mean time to start RT after clearance (Days/SD)	Difference (Days/SD)
<b>Gender</b>				
Males	275 (82.6)	20.98 (6.11)	23.98 (7.38)	3.44 (4.06)
Females	58 (17.4)	21.12 (6.84)	24.15 (7.24)	2.70 (2.70)
<b>Stage of Malignancy</b>				
T1	34 (10.21)	21.97 (8.38)	25.06 (10.51)	3.41 (3.61)
T2	46 (13.81)	20.52 (6.40)	22.65 (6.25)	2.51 (2.37)
T3	79 (23.72)	20.38 (5.39)	23.83 (6.66)	3.80 (4.75)
T4	174 (52.25)	21.23 (6.07)	24.25 (7.14)	3.28 (3.78)
<b>Site of Malignancy</b>				
Oral cavity	62 (18.61)	20.90 (8.31)	25.25 (10.22)	4.57 (5.27)
Oropharynx	152 (45.64)	21.71 (5.71)	24.32 (6.90)	3.14 (3.85)
Hypopharynx	40 (12.01)	19.20 (5.38)	22.63 (5.74)	3.44 (2.32)
Larynx	62 (18.61)	20.38 (5.78)	23.24 (6.60)	2.72 (3.20)
Nasopharynx	17 (5.11)	21.59 (4.68)	22.87 (3.20)	2.12 (1.85)
<b>Mouth Opening</b>				
1-10	5 (1.50)	21.40 (5.72)	25.00 (8.75)	3.50 (4.50)
11-20	25 (7.50)	20.60 (7.03)	23.41 (6.79)	2.63 (3.15)
21-30	49 (14.71)	21.82 (6.13)	26.24 (9.32)	4.97 (7.20)
31-40	153 (45.95)	21.58 (6.37)	24.08 (7.56)	2.98 (2.98)
>40	101 (30.33)	19.83 (5.81)	23.02 (5.88)	3.20 (2.75)
<b>No. of Extractions</b>				
0	8	1 (.00)	8.43 (1.39)	7.43 (1.39)
1-4	95	19.93 (5.13)	22.93 (6.30)	2.91 (3.15)
5-8	142	21.15 (5.03)	24.78 (7.01)	3.48 (4.42)
9-12	53	23.13 (5.98)	26.40 (8.37)	3.04 (3.33)
>12	35	24.71 (5.28)	23.53 (5.16)	3.17 (3.97)

## CONCLUSION

- ❖ The study addressed the gap in knowledge pertaining to the time required for POC before RT.
- ❖ Accomplishing oral health as demonstrated is not an impediment to the timely beginning of RT.
- ❖ Need further research to test the generalizability of the results.

## REFERENCES

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