

Chewable Vitamin C In The Management Of Radiation-Induced Xerostomia: Is It The End Of The Dark Tunnel?

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Introduction:

- Radiation-induced xerostomia:
 - Common side effect in head & neck cancer patient
 - Poor quality of life
- Scarcity pharmacological agents:
 - Effective prevention seldom achieved
 - Chewing gum & Vitamin C – may be effective
 - Chewable Vit. C - sour taste may be additional help

Current study:
Compares
salivary function
in Ca patients on
Head Neck RT

Chewable Vit. C:

- Sour taste
- Antioxidant
- Metabolic enhancer

Vs.

Chewing gums:
Mechanical stimulation

Methods...

- Prospective, randomized, controlled, open label
- After IEC approval at Burdwan Medical College, India
- Written informed consent from all participants
- Started from June, 2019 .. continuing

Inclusion criteria:

- Age: 18 - 70 years
- Both gender
- Biopsy proven head & neck cancer
- Receiving head & neck irradiation
- Literacy: Standard 4 or higher

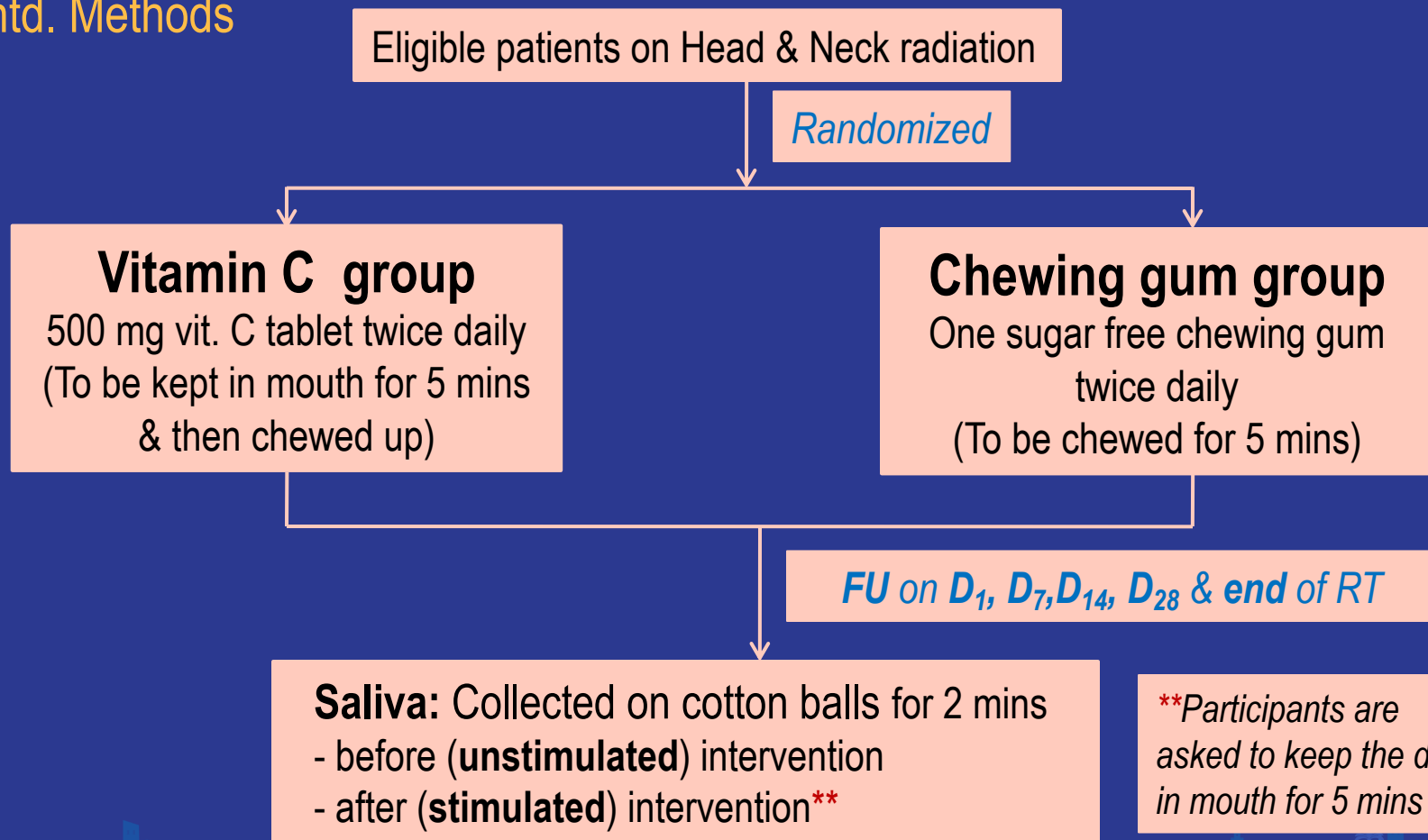
Exclusion criteria:

- Other associated malignancies
- Salivary gland excision during surgery
- Any psychiatric illness
- Patients receiving other drug that can cause xerostomia





...contd. Methods





...contd. Methods

Parameters measured at FU

1. Amount of salivary secretion

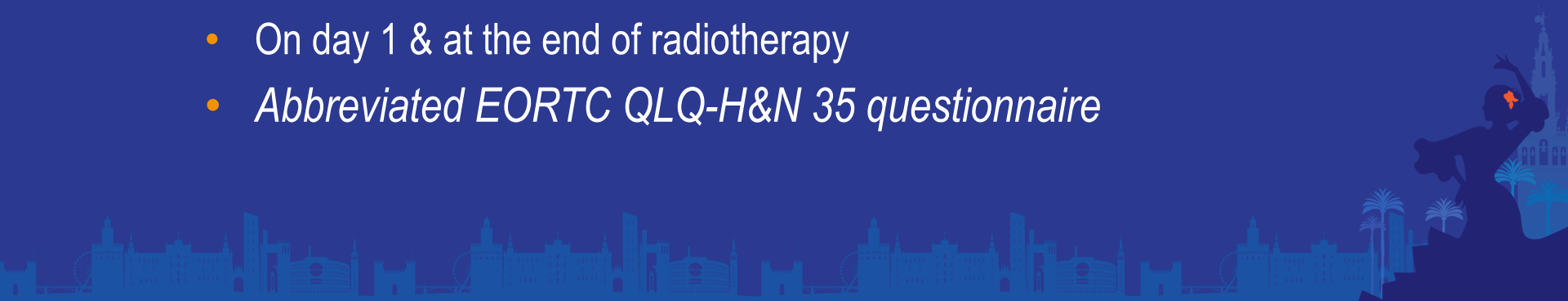
- *In gm/min (2 min collection)*

2. Observer-rated xerostomia score (XS)

- *A 9 point scale to evaluate signs & symptoms of xerostomia*

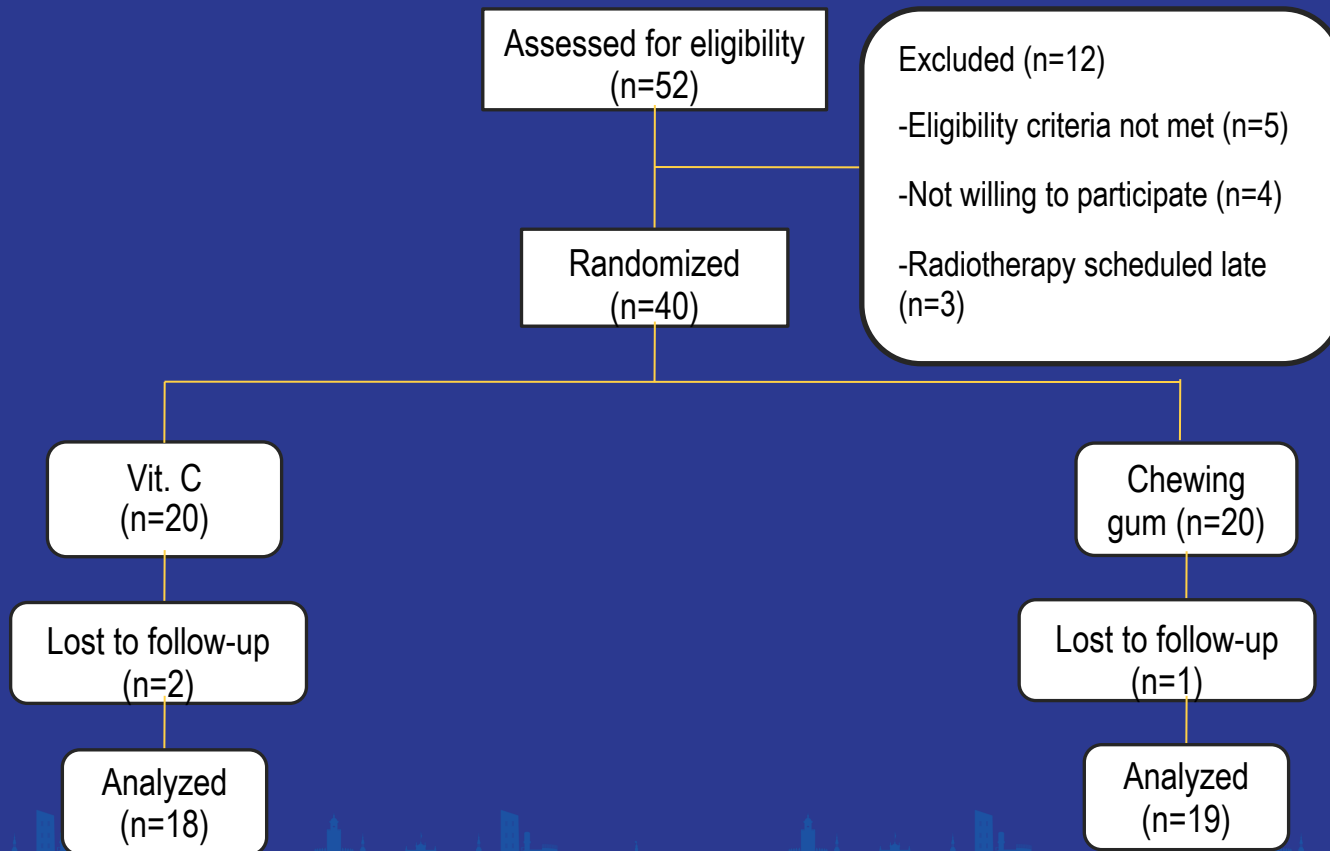
3. Quality of life

- On day 1 & at the end of radiotherapy
- *Abbreviated EORTC QLQ-H&N 35 questionnaire*





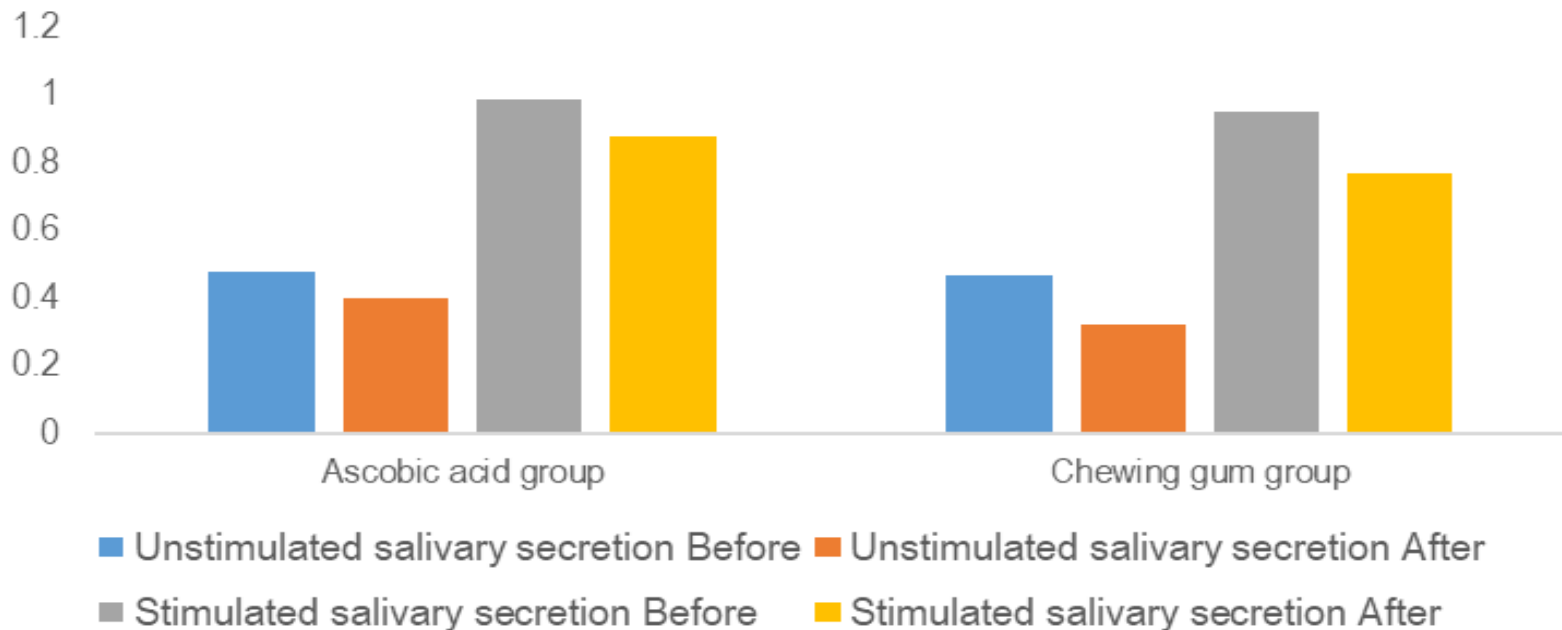
Results



...contd. Results

■ Assessment of salivary secretion:

Comparison of salivary secretion





...contd. Results

- Assessment of salivary secretion:
 - ❖ Salivary amount was similar at baseline ($p=0.59$)
 - ❖ Hyposalivation was prevented in **all patients (n,18)** in the **vitamin c group** & in **84% (n,16)** of those who received **chewing gum**, i.e. unstimulated salivary secretion at the end of RT: 0.3 gm/min or more
 - ❖ Percent reduction of flow over the baseline was less with vit. C (**16.67%** vs. **31.91%**)



...contd. Results

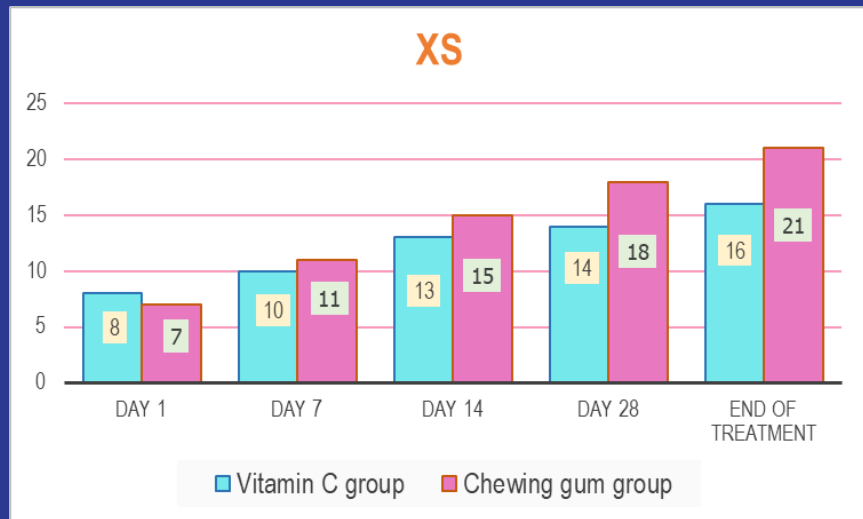


Fig: Severity of xerostomia
* Xerostomia score

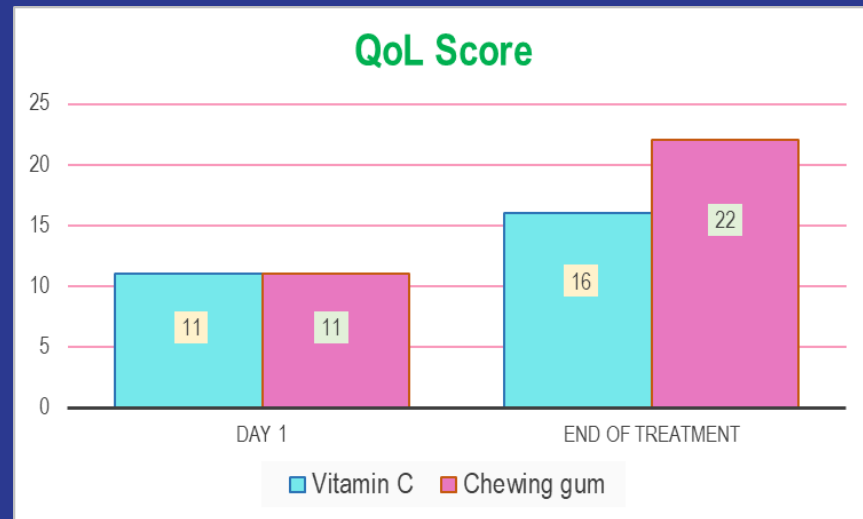


Fig: Quality of life
* EORTC QLQ HN35

Discussions:

- Results favouring more towards chewable Vitamin C
- Pharmacological effect – may be due to physical action (sour taste) + other actions
- Strength of the study:
 - Randomized
 - Head to head comparison, objective measurement of saliva
- Limitations of the study:
 - Sample size
 - No blinding

**Study is still on progress





Conclusions:

- Both Chewable vitamin C and chewing gum can prevent radiation-induced hyposalivation
- Chewable ascorbic acid –
 - more effective than chewing gum
 - less severe signs & symptoms of xerostomia
 - better quality of life
- Further studies are recommended to validate these findings

