Treatment algorithm for Oral Cancer

Lip cancer
- Staging evaluation
  - CT scan for T3/T4 to assess nodal spread/bone invasion

T1: Early lesions (<2.0 cm)
- Commissure Involvement
- Poorly differentiated
- Upper lip
  - yes
    - RT: ISBT/Intra Oral Cone/Ext RT
  - no
    - Surgery: If Cosmetic & functional outcome is favourable
      - +ve margin
      - Perineural infiltration
      - RT: ISBT/Intra Oral Cone/Ext RT

T2: Moderately advanced lesions (2-4 cm)
- RT
- Surgery: If Cosmetic & functional outcome is favourable

T3 Locally advanced lesions (>4 cm)
- RT
- Surgery: If Cosmetic & functional outcome is favourable
- †treat neck if lesion is...

T4a
- RT – Salvage surgery
- Surgery: If Cosmetic & functional outcome is favourable > PORT.

T4b
- Palliative RT
- Clinical Trial
Floor of mouth cancer

Staging evaluation
- CT scan for all T3/T4 to assess nodal spread/bone invasion

T1: Early lesions (<2.0 cm)
(T1 and superficial T2)
- Surgery*
- +ve margin
- Perineural infiltration
- RT: ISBT/Intra Oral Cone/Ext RT

T2: Moderately advanced Lesions
(large T2 and endophytic T3)
- Surgery*
- Post Operative Radiotherapy +/- Concomitant Chemotherapy

T3 Locally advanced lesions (>4 cm)
- Operable
- Surgery*
- Post Operative Radiotherapy +/- Concomitant Chemotherapy
- Pre OP RT +/- concomitant CT
- Complete Response
- Partial response
- No response/Inflammatory Ca/Progressive disease
- Radiotherapy +/- Concomitant Chemotherapy
- Surgery*

T4a
- Operable
- Surgery*
- Post Operative Radiotherapy +/- Concomitant Chemotherapy
- Pre OP RT +/- concomitant CT
- Complete Response
- Partial response
- No response/Inflammatory Ca/Progressive disease
- Radiotherapy +/- Concomitant Chemotherapy
- Surgery*

T4b
- Inoperable
- Palliative RT Clinical Trial
- Radiotherapy +/- Concomitant Chemotherapy or Palliative RT
- Complete Response
- Partial response
- No response/Inflammatory Ca/Progressive disease
- Palliative Symptomatic & supportive Treatment. Clinical Trial
Oral tongue cancer

Staging evaluation
• CT scan
• MRI

T1: Early lesions (<2.0 cm)
(T1 and superficial T2)

- Superficial
- Exophytic lesion

Surgery

Close involved margins
multiple positive neck nodes
vascular space invasion
extracapsular extension/perineural

PO RT:
ISBT/Intra Oral Cone/Ext RT +/- concomitant CT

Surgery*: > 1 cms margin preferable.

Operable

Post Operative Radiotherapy
+/- Concomitant Chemotherapy

Pre OP RT +/- concomitant CT

Complete Response

Radiotherapy
+/- Concomitant Chemotherapy

Partial response

Surgery*

No response/Inflammatory Ca/Progressive disease

Radiotherapy
+/- Concomitant Chemotherapy

Or Palliative RT

Complete response

Palliative Symptomatic & supportive Treatment.

Clinical Trial

T2: Moderately advanced Lesions

RT

T3: Locally advanced lesions (>4 cm)

T4a

T4b

Inoperable

Operable

Surgery*

Post Operative Radiotherapy
+/- Concomitant Chemotherapy

Palliative RT

Clinical Trial

Surgery*

Radiotherapy
+/- Concomitant Chemotherapy

Surgery*

Post Operative Radiotherapy
+/- Concomitant Chemotherapy

Radiotherapy
+/- Concomitant Chemotherapy

Surgery*

Surgery*

Post Operative Radiotherapy
+/- Concomitant Chemotherapy

Palliative RT

Clinical Trial
Buccal Mucosa cancer  
(Includes Lip Mucosa)  
Staging evaluation  
- CT scan  
- X ray mandible  

**T1 : Early lesions (<2.0 cm)**  
(T1 and superficial T2)  

**T2: Moderately advanced Lesions**  

**T3 Locally advanced lesions (>4 cm)**  

**T4a**  

**T4b**  

**Surgery**: > 1cms margin preferable.  
- **?? ??????? ?? ?????**  
- **??????????????????????????????**  
- **???? ??????? ?? ???????????**  
- **?? ????????? ???????????**  
- **?? ????????? ???????????**  

**RT**: ISBT, Ext+Brachy, Ext RT  

**PO RT**: ISBT/Intra Oral Cone/Ext RT +/- concomitant CT  

**Commisure Free. lesions : Ulcerative, Infiltrative**  

**Comissure involved : Superficial -Exophytic lesion**  

**Close involved margins**  
- **multiple positive neck nodes**  
- **vascular space invasion**  
- **extracapsular extension/perineural**  

**Operable**  

**Post Operative Radiotherapy +/- Concomitant Chemotherapy**  

**No response/Inflammatory Ca/Progressive disease**  

**Factors**  
- **Comissure involved**  
- **Superficial -Exophytic lesion**  

**Inoperable**  

**Post Operative Radiotherapy +/- Concomitant Chemotherapy**  

**Radiotherapy +/- Concomitant Chemotherapy**  

**Surgery**  

**Palliative Symptomatic & supportive Treatment**  

**Clinical Trial**  

**Operable**  

**Post Operative Radiotherapy +/- Concomitant Chemotherapy**  

**Pre OP RT +/- concomitant CT**  

**Partial response**  

**Complete Response**  

**No response**  

**Radiotherapy +/- Concomitant Chemotherapy**  

**Surgery**  

**Palliative Symptomatic & supportive Treatment. Clinical Trial**
# GINGIVA cancer

## Staging evaluation
- CT scan
- X ray mandible
- MRI

### Upper Gingiva

<table>
<thead>
<tr>
<th>T1</th>
<th>Early lesions (&lt;2.0 cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T2</td>
<td>Moderately advanced Lesions</td>
</tr>
<tr>
<td>T3</td>
<td>Locally advanced lesions (&gt;4 cm)</td>
</tr>
</tbody>
</table>

### Lower Gingiva

- CT scan
- X ray mandible
- MRI

### Surgery
- Include periostium or Bone

### Close involved margins
- Multiple positive neck nodes
- Vascular space invasion
- Extracapsular extension

### RT
- Ext+iOCone RT, Ext RT

### Post Operative Radiotherapy
- +/- Concomitant Chemotherapy

### Operable

#### Radiation +/ Concomitant Chemotherapy

### Inoperable

#### Palliative RT

### Clinical Trial

#### Radiation +/- Concomitant Chemotherapy or Palliative RT

### Palliation
- Symptomatic & Supportive Treatment
- Clinical Trial

### Complete Response

- Radiation +/- Concomitant Chemotherapy

### Partial response

- Surgery

### No response

- Radiation +/- Concomitant Chemotherapy

### Symptomatic & Supportive Treatment

### Clinical Trial

* PO RT: ISBT/Intra Oral Cone/Ext RT +/- concomitant CT

* RT*: Ext+iOCone RT, Ext RT

* Surgery*: > 1cms margin preferable. Include periostium or Bone. Upper Alveolus: Partial / Total maxillectomy

- Lower Alveolus: rim resection/ intro oral excision

- Operable

- Inoperable

- Radiation +/ Concomitant Chemotherapy

- Post Operative Radiotherapy

- +/- Concomitant Chemotherapy
Retromolar trigone cancer

Staging evaluation
- CT scan
- MRI

T1: Early lesions (<2.0 cm)
(T1 and superficial T2)

T2: Moderately advanced Lesions

T3: Locally advanced lesions (>4 cm)

T4a

T4b

Surgery*: Include periostium or Bone, +ve margin, Perineural invasion

PO RT: Intra Oral Cone/Ext RT

Superficial Exophytic lesion, Involvement of the tonsillar pillar, soft palate, or buccal mucosa

RT*: Ext+IOCone RT, Ext RT


Post Operative Radiotherapy +/- Concomitant Chemotherapy

Operable

Post Operative Radiotherapy +/- Concomitant Chemotherapy

Inoperable

Pre OP RT +/- concomitant CT

Radiotherapy +/- Concomitant Chemotherapy or Palliative RT

Complete Response

Partial response

No response/ Inflammatory Ca/Progressive disease

Radiotherapy +/- Concomitant Chemotherapy

Surgery*

Symptomatic & supportive Treatment, Clinical Trial

Surgery*

Clinical Trial

Operable

Inoperable
**Hard Palate cancer**

**Staging evaluation**
- CT scan
- MRI

**T1**: Early lesions (<2.0 cm)
(T1 and superficial T2)

- Surgery*: Include periostium or Bone, +ve margin, Perineural invasion
- PO RT: Intra Oral Cone/Ext RT

**T2**: Moderately advanced Lesions

- Superficial Exophytic lesion, Involvement of the tonsillar pillar, soft palate
- RT*: Ext+IOCone RT, Ext RT
- Post Operative Radiotherapy +/- Concomitant Chemotherapy

**T3 Locally advanced lesions (>4 cm)**

- Surgery*: Include periostium or Bone.

**T4a**

- Operable
- Post Operative Radiotherapy +/- Concomitant Chemotherapy
- Pre OP RT +/- concomitant CT
- Complete Response
- Partial response
- Radiotherapy +/- Concomitant Chemotherapy

**T4b**

- Inoperable
- Surgery*
- Radiotherapy +/- Concomitant Chemotherapy or Palliative RT
- Pre OP RT +/- concomitant CT
- Complete Response
- Partial response
- Radiotherapy +/- Concomitant Chemotherapy
- Surgery*
- Symptomatic & supportive Treatment. Clinical Trial

**Palliative RT**
**Clinical Trial**
## Oral cancer: General Treatment principles

<table>
<thead>
<tr>
<th>Preferred Primary Treatment Modality</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>T1 &amp; T2 N0</strong></td>
<td>Surgery or RT</td>
</tr>
<tr>
<td><strong>T3 &amp; T4 A Any N</strong></td>
<td>Surgery + PORT</td>
</tr>
<tr>
<td><strong>T4b</strong></td>
<td>Palliative RT/CT/Clinical Trial</td>
</tr>
</tbody>
</table>

**Primary RT is preferred in**

- Cosmesis
- Function
- Patients’ Profession
- Patient preference
- Angle of the mouth involvement
- Exophytic lesions
- Poorly differentiated lesions
- Local facility
- Local skill
- Co-morbid conditions

**Post Operative radiotherapy is indicated in:**

- Positive surgical margin
- Frozen section positivity
- Perineural invasion
- Node positivity
- Lymphovascular invasion
- Peri nodal spread
- Bone infiltration
- Multiple nodes

<table>
<thead>
<tr>
<th>Body Region</th>
<th>N0 Clinically - N+ pathologically</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor Mouth</td>
<td>21 - 50%</td>
</tr>
<tr>
<td>Gingiva</td>
<td>12 - 19%</td>
</tr>
<tr>
<td>Hard palate</td>
<td></td>
</tr>
<tr>
<td>Buccal Mucosa</td>
<td>0 - 10%</td>
</tr>
<tr>
<td>Oral Tongue</td>
<td>25 - 54%</td>
</tr>
<tr>
<td>Retro Molar Trigone</td>
<td>35%</td>
</tr>
<tr>
<td>Lip</td>
<td>5 - 10%</td>
</tr>
</tbody>
</table>