Principles of Management of Head & Neck Cancer

Jinka Sathya
Associate professor of Oncology
Major sites of Mucosal H&N Cancers

- Oral cavity
- Oro-pharynx
- Larynx
- Hypopharynx
- Nasopharynx
Head & Neck Cancer

**Oral Cavity:**

1) Oral Tongue
2) Floor of Mouth
3) Buccal Mucosa
4) Upper and lower Gingiva
5) Hard Palate
6) Retro-Molar trigone
Head & Neck Cancer-Oral Cavity

- T2-Cancer of Oral Tongue
Head & Neck Cancer - Oral Cavity

- T4 floor of mouth
Head & Neck Cancer - Oral Cavity

- T 2-Floor of Mouth
Head & Neck Cancer-Oral Cavity

- T2 Buccal Mucosa
Head & Neck Cancer-Oral Cavity

- Leukoplakia
Management of Oral Cavity Cancers

Surgery is the preferred modality

- Free flaps and micro vascular surgery have revolutionized the surgical outcomes
- Eating, Swallowing and speech are still a problem
- High doses of radiation poorly tolerated
- Mandibular necrosis is dose limiting
- Medium doses of Post-Op radiation - well tolerated
Head & Neck Cancer

- Oro-Pharynx:
  - Base of Tongue
  - Tonsil including Tonsillar pillars
  - Soft Palate
  - Uvula
Head & Neck Cancer-Oro-pharynx

- T3 cancer of Right Tonsil
Head & Neck Cancer-Oro-pharynx

- Cancer of Tonsil-right T3, Hypertrophy-left
Head & Neck Cancer-Oro-pharynx

- Base of Tongue-T2
Head & Neck Cancer - Tonsil

- Bulky tonsil cancer
Management of Oro-Pharyngeal Cancers

- Radiation with or without Chemotherapy is the preferred modality
- Significant proportion are HPV related and respond very well
- Surgery associated with significant swallowing dysfunction
Major sites of Mucosal H&N Cancers
Head & Neck Cancer

Larynx and Hypopharynx:

- Supra-Glottic Larynx
- Glottic Larynx
- Sub-Glottic Larynx
- Pyriform Sinus
- Lateral Pharyngeal wall
- Post-Cricoid region
Head & Neck Cancer - Larynx

- T1B Vocal cord
Head & Neck Cancer-Larynx

- Bulky T2 with Sub-glottic extension
Head & Neck Cancer-Larynx

- T2 or T4 Cancer of Vocal Cord
Head & Neck Cancer

Principles of management of Cancer of Larynx and Hypopharynx:

- Organ preservation is the goal of therapy

- Goal is to maintain speech and lack of tracheostomy

- Laser surgery (organ preserved) or Radiation for early stage

- Radiation±chemotherapy for advanced disease( Stage 3)

- Very advanced disease( T4) -Surgery followed by RT±Chemotherapy is the treatment of choice
Head & Neck Cancer-Larynx

Post-Laryngectomy
Radiation Side Effects

- **Acute:**
  - Radiation Dermatitis (Skin Reaction)
  - Mucositis
  - Xerostomia - Acute
    - Sub-Acute

- **Chronic:**
  - Chronic Dermatitis with Telangetectasia
  - Mucosal Atrophy
  - Xerostomia & Consequences
  - Hearing Loss
  - T-M joint dysfunction
  - Hair loss.
Management of Acute Side Effects

Skin Reaction:

- Less of an issue with more skin sparing technique

- we are seeing more of this with Cetuximab.

- Glaxal base cream

- Aloe base cream

- Polysporin

- Flamazine
Management of Acute Reaction

Mucositis:

Phase 1: Vascular/Inflammatory Phase
- Release of free Radicals, cytokines, TNF

Treatment:
- Oral Hygiene
- Dental Care including dental amalgam during RT
- Mouth Washes:
  - Sodium bicarbonate mouthwash
  - Chlorhexidine mouthwash
  - Mixed medication mouthwash
  - Calcium phosphate mouthwash
- Pain Control
Management of Acute Reaction

Mucositis:

Phase 2: Epithelial Phase
- Retardation of cell division
- Reduction in epithelial turnover
- Erythema with difficulty in swallowing, speech, mastication

Management:
- Continued oral care
- Nutritional support
- Anti-Fungal therapy
- Pain Control
Management of Acute Reaction

Mucositis:

Phase 3:
- Ulcerative Phase
- Microbial colonization of the mucosal surface occurs.

Management:
- Continue Phase 2 management
- May need systemic anti-fungal medication
- May need antibiotics
- May need aggressive nutritional support

Phase 4: Healing Phase
Mucositis affecting the buccal tissues and tongue
Acute Radiation Toxicity

Mucositis:

After radiation treatment fungal infections such as candida are common, but easily resolved.
Table 1
Effect of Oral Mucositis on Quality of Life

Oral mucositis may have a significant impact on quality of life due to:

- Pain, often requiring opioid analgesics, with systemic side effects of opioids
- Difficulty with speech, denture function, dysgeusia, bad breath, and dysphagia
- Inability to take nutrition or hydration by mouth, requiring tube feeding or parenteral nutrition
- Inability to take medication by mouth
- Provision of a portal for systemic infection (primarily neutropenic patients) by oropharyngeal flora, including streptococci and Candida species, with potential mortality
- Requirement or extension of hospitalization
- Increased cost of care
Management of Xerostomia

Xerostomia:

- Thick Saliva
- Nausea & Vomitting
- Altered taste
- Difficulty in swallowing solids

Management:

- Adequate Hydration
- Frequent mouth washes
- Sips of clear fluids
- Semi-solid foods
Xerostomia

How can we reduce?

- Pilocarpine
- Amifostine
- Morning vs. Afternoon radiation
- Radiation technique- IMRT
IMRT to reduce Xerostomia
IMRT to reduce Xerostomia
IMRT to reduce Xerostomia
Figure 1: Linear curve estimation for grading ≥ II xerostomia related to the mean dose of parotid gland (ρ = 0.5013, P < 0.001). The analysis was performed from 20 published trials with relevant available data.
Toxicity with Cetuximab and RT
Toxicity with Cetuximab and RT

Figure 1: papulopustular eruption on the face
Toxicity with Cetuximab and RT
Smoking- H&N Cancers

Learning Objectives:

- Does smoking cause H&N cancers?
- Does smoking increase incidence of 2\textsuperscript{nd} cancers?
- Do smokers present with advanced disease?
- Does smoking compromise surgical outcome?
- Does smoking increase radiation side-effects?
- Does smoking influence efficacy of radiation therapy?
- Does smoking affect cancer specific and overall survival?
Smoking-Therapeutic implications in H&N Cancers:

Browman et al: NEJM 1993;328:159-63

Figure 1. Survival among Patients with Head and Neck Cancer, According to Whether They Continued to Smoke or Abstained from Smoking during Radiation Therapy. The numbers beneath the graph are the numbers of patients in each group who were at risk at each time point.
Smoking-Therapeutic implications in H&N Cancers:

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Figure 2. Survival among Patients with Head and Neck Cancer, According to Whether They Continued to Smoke during Radiation Therapy, Had Quit Smoking Less Than 12 Weeks before Diagnosis, or Had Not Smoked for at Least 1 Year before Diagnosis. The numbers beneath the graph are the numbers of patients in each group who were at risk at each time point.
Questions?