## Esophageal Cancer

**Disclaimer:** This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular to MD Anderson's specific patient population, services and structure, and clinical information. This is not intended to replace the independent medical or professional judgment of physicians or other health care providers in the context of individual clinical circumstances to determine a patient's care. This algorithm should not be used to treat pregnant women.

**Note:** Consider Clinical Trials as treatment options for eligible patients. Consider referral to a Comprehensive Cancer Center.

### WORK UP
- History and Physical
- Barium Swallow (optional)
- Esophagogastroduodenoscopy (EGD) to visualize entire upper Gastrointestinal (GI) tract
- Biopsy confirmation and histologic subtyping\(^1\)
- CBC and chemistry profile
- CT of chest and abdominal with contrast
- Bronchoscopy, if tumor is at or above the carina with no evidence of M1 disease
- Endoscopic ultrasound, if no evidence of M1 disease and tumor is at Gastroesophageal (GE) junction
- Biopsy confirmation of suspected metastatic disease
- PET/CT in absence of M1 disease
- HER2-neu evaluation by Immunohistochemistry (IHC)\(^2\) in patients with advanced, metastatic cancer (not localized cancer)
- Additional biomarkers as clinically indicated\(^3\)
- Lifestyle risk assessment\(^3\)

### ADDITIONAL EVALUATION
- Multidisciplinary evaluation is required for all localized cases (not for metastatic patients)
- Nutritional assessment [for preoperative nutritional support, consider nasogastric or jejunostomy tube (J-tube); PEG is not recommended]
- Barium enema or colonoscopy if colon interposition or bypass planned
- Consider arteriogram (optional) if performing colon interposition

### PRIMARY TREATMENT

<table>
<thead>
<tr>
<th>Stage IV Metastatic cancer</th>
<th>cTis to less than or equal to cT1b(^1)</th>
<th>cT1b(^1), Any N</th>
<th>cT2, N0(^4)</th>
<th>cT1b-T2, N+(^3) cT3-T4, N0-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medically operable?</td>
<td>Yes</td>
<td>No</td>
<td>Not medically operable or patient declining surgery</td>
<td>Medically operable</td>
</tr>
<tr>
<td>Definitive chemoradiation</td>
<td>Follow-up, See Page 3</td>
<td></td>
<td>Definitive chemoradiation</td>
<td>Salvage surgery(^7)</td>
</tr>
<tr>
<td>Surgery or combined modality therapy</td>
<td></td>
<td></td>
<td>Preoperative chemoradiation</td>
<td>Surgery(^7)</td>
</tr>
<tr>
<td>--------------------------</td>
<td>------------------------------------------</td>
<td>----------------</td>
<td>-----------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Endoscopic mucosal resection (EMR) and/or ablation or esophagectomy</td>
<td></td>
<td></td>
<td></td>
<td>Palliative treatment as clinically indicated</td>
</tr>
</tbody>
</table>

\(^1\) Confirmation should be completed on outside MD Anderson specimen and inside MD Anderson specimen

\(^2\) Consider HER2-neu evaluation initially by IHC and if IHC score 2+, follow-up with FISH test

\(^3\) See MDA Approved Biomarkers for additional information – click here

\(^4\) See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice

\(^5\) Consider diagnostic EMR for all cT1b patients and T2N0 patients who have tumors less than 2 cm in size with low standardized uptake values (SUV) (less than or equal to 3)

\(^6\) Whenever possible, N+ status in patients with limited depth of invasion should be confirmed histologically

\(^7\) Preferred for non-cervical cT1b disease

\(^8\) Patients who receive preoperative chemoradiation should be followed after surgery

---

Copyright 2018 The University of Texas MD Anderson Cancer Center
SURGICAL OUTCOMES AFTER ESOPHAGECTOMY

CLINICAL PATHOLOGIC FINDINGS

Surgery as primary therapy

Node negative?

Yes

No

Adenocarcinoma

Tis, T1, N0

Observe as clinically indicated

T2, N0

• Observe or chemoradiation (fluoropyrimidine-based) for selected patients

• Adjuvant chemotherapy if patient received chemotherapy preoperatively

T3, N0

• Chemoradiation (fluoropyrimidine-based)

• Adjuvant chemotherapy if patient received chemotherapy preoperatively

Squamous

Observe as clinically indicated

Proximal or mid esophagus

Observe or chemoradiation (fluoropyrimidine-based) for selected patients

Distal esophagus, GE junction

• Chemoradiation (fluoropyrimidine-based)

• Adjuvant chemotherapy if patient received chemotherapy preoperatively

Observe as clinically indicated

Macroscopic residual cancer

Chemoradiation (fluoropyrimidine-based) or palliative therapy

¹Consider diagnostic EMR for all cT1b patients and T2N0 patients who have tumors less than 2 cm in size with low standardized uptake values (SUV) (less than or equal to 3)
FOLLOW - UP

- If asymptomatic:
  - History and Physical every 4 months for 1 year, then every 6 months for 2 years, then annually
  - Chemistry profile and CBC, as clinically indicated
  - CT chest and abdomen with oral and IV contrast as clinically indicated
  - Upper GI as clinically indicated
  - Dilatation for anastomotic stenosis
  - Nutritional counseling
  - Vitamin D level check

RECURRENT

Local/regional only recurrence: prior surgery, no prior chemoradiation

PARLIAITIVE THERAPY

- Concurrent chemoradiation (fluoropyrimidine-based) (preferred)
- Surgery
- Chemotherapy and/or
- Best supportive care

Metastatic cancer

Local/regional recurrence: (prior chemoradiation, no prior surgery)

Resectable and medically operable

Yes

Salvage surgery

No

Palliative therapy

1Patient with Tis or T1a who undergo EMR should have endoscopic surveillance every 3 months for one year, then annually.

Disclaimer: This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular to MD Anderson's specific patient population, services and structure, and clinical information. This is not intended to replace the independent medical or professional judgment of physicians or other health care providers in the context of individual clinical circumstances to determine a patient's care. This algorithm should not be used to treat pregnant women.

Note: Consider Clinical Trials as treatment options for eligible patients. Consider referral to a Comprehensive Cancer Center.
SUGGESTED READINGS

PRINCIPLES OF MULTIDISCIPLINARY TEAM APPROACH FOR GASTROESOPHAGEAL CANCERS


PRINCIPLES OF SURGERY


Continued on next page
SUGGESTED READINGS - continued

PRINCIPLES OF SYSTEMIC THERAPY FOR ESOPHAGEAL OR GASTROESOPHAGEAL JUNCTION CANCER


OTHER SUPPORTIVE READINGS


DEVELOPMENT CREDITS

This practice algorithm is based on majority expert opinion of the Gastrointestinal Center Faculty at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

Jaffer Ajani, MD (GI Medical Oncology)
Tharakeswara Bathala, MD (Diagnostic Radiology – Body Imaging)
Manoop Bhutani, MBBS (Gastroenterology Hepatology & Nutrition)
Prajnan Das, MD, MPH (Radiation Oncology)
Keith Fournier, MD (Surgical Oncology)
Wayne Hofstetter, MD (Thoracic & Cardiovascular Surgery)
Linus Ho, MD (GI Medical Oncology)
Jeffrey H. Lee, MD (Gastroenterology Hepatology & Nutrition)
Pauline Koinis, BSMT (Clinical Effectiveness)
Steven Lin, MD, PHD (Radiation Oncology)

Paul Mansfield, MD (Acute Care Services)
Dipen Maru, MD (Pathology, Anatomical)
William A. Ross, MD (Gastroenterology Hepatology & Nutrition)
Tara Sagebiel, MD (Diagnostic Radiology – Body Imaging)
Heath Skinner, MD, PHD (Radiation Oncology)
Stephen Swisher, MD, BS (Surgery)
Dongfeng Tan, MD (Pathology, Anatomical)
James Welsh, MD (Radiation Oncology)
Anita Williams, BS (Clinical Effectiveness)

† Core Development Team Lead
* Clinical Effectiveness Development Team