Intended for use by Clinicians and Health Care Providers involved in the Management or Referral of adult patients with Esophageal Cancer including GE (gastroesophageal) junction cancers

Section	Activity	Activity Description	Details	Reference(s)
AA	Cancer Centre Referrals		• All patients who are not candidates for definitive Endoscopic Mucosal Resection (EMR) for early stage disease	
A	Diagnosis		• Localized disease – endoscopic biopsy or EMR • Metastatic disease – endoscopic biopsy or biopsy of metastatic tumor focus if accessible	
B	History and Physical exam		• Routine (including examination of neck and supraclavicular nodes)	
C	Investigations		Laboratory: • CBC, creatinine, liver enzymes and function including albumin • Staging Imaging: o CT chest/abdomen/pelvis, neck (if clinically indicated) o PET (for patients who are candidates for curative therapy) o Other imaging as clinically indicated (bronchoscopy, mediastinoscopy, laparoscopy, endoscopic ultrasound) For patients who are planned for trimodality therapy, repeat endoscopy 5-6 weeks post concurrent chemoradiation AND CT chest/abdomen/pelvis or PET scan Additional investigations: • Pulmonary Function Test (PFT)	

Section	Activity	Activity Description	Details	Reference(s)
D	Pathology of diagnostic specimen	Pathology guidelines (includes synoptic report)	KGH pathology review of cases with outside pathology as requested Biopsy specimen: • Surgical report to include: o Tumor type (histology), grade, presence of invasion o HER2 testing initiated by pathologist for primary GE junction adenocarcinoma Resection specimen: • Synoptic report includes: o Location primary tumor, tumor type (histology), grade, depth of invasion, presence of lymphovascular invasion and/or perineural invasion, lymph node involvement, assessment of resection margins, assessment of treatment effect (for patients undergoing preoperative chemoradiation)	
E	Post-Investigation Management	Curative Intent	For patients with localized disease and good performance status who are surgical candidates : • Trimodality therapy (concurrent chemoradiation followed by surgical resection)	Cancer Care Ontario Adjuvant/ Curative/ Neo-Adjuvant Intent Systemic Therapy (1)

Section	Activity	Activity Description	Details	Reference(s)
			For patients with localized disease and good performance status who are not surgical candidates: (eg. Comorbidities, elderly, proximal location of primary): • Concurrent chemoradiation Occasional patients with early stage disease with possibility of cure will require individual single modality treatment plans which are not the standard of care. Description of therapies: Surgery to consist of: thoracoabdominal esophagogastrectomy with lymphadenectomy or non-thoracotomy esophagogastrectomy with lymphadenectomy Concurrent chemoradiation to consist of: Carboplatin/taxol (CRBPPACL(RT)) Radiation with curative intent: Please refer to the Radiation Therapy details in Appendix I For patients undergoing primary surgical resection with high risk features (T stage greater than T2), consideration of postoperative concurrent adjuvant chemoradiation or adjuvant chemotherapy	

Section	Activity	Activity Description	Details	Reference(s)
F	Post-Investigation Management	Advanced disease	Options for palliating symptomatic dysphagia 1. Palliative radiation (EBRT and/or HDR brachytherapy) 2. Esophageal stenting/dilatation 3. Best supportive care Options for palliative and symptomatic management of systemic disease: • Chemotherapy for patients with good performance status ((CISPFU), carboplatin/taxol (CRBPPACL)) • Radiation as clinically indicated for local symptoms • Consideration of second line chemotherapy for patients with good performance status • Best supportive care	Cancer Care Ontario Palliative Intent Systemic Therapy (2)
G	Post-Investigation Management	Locally recurrent disease	Dependent on initial management. For localized disease, consideration of surgical resection, external beam radiation (+/- concurrent chemotherapy), brachytherapy	
H	Follow up with no evidence of disease		Clinic visit for Hx/PE q3-6 months for 3 years, then q6 months until 5 years Endoscopy annually (until 5 years) and as clinically indicated CT and/or other investigations as clinically indicated	
I	Controversies		• Diagnosis of distal esophageal adenocarcinoma versus	

Section	Activity	Activity Description	Details	Reference(s)
			proximal gastric cancer • Optimal management of GE junction cancers and those extending to involve proximal stomach • Role of EUS in staging • Role of additional postoperative therapy in candidates with minimal treatment effect post trimodality therapy • Role of additional chemotherapy after definitive chemoradiation • Management of patients with positive resection margins post neo-adjuvant chemoradiation • Radiation dose escalation in patients who are not candidates for surgery	
J	Clinical Trials		Active Clinical Trials: • See Link	[3] CCSEO Clinical Trials

References

1. **Cancer Care Ontario (CCO) Systemic Treatment Program.** Adjuvant/ Curative/ Neo-Adjuvant Gastroesophageal Cancer Regimens. [Online] February 2015. https://www.cancercare.on.ca/common/pages/UserFile.aspx?fileId=300128.

2. **Cancer Care Ontario (CCO) Systemic Treatment Program (STP).** Palliative Gastroesophageal Cancer Regimens. *Systemic Treatment Funding Model.* [Online] February 2015. https://www.cancercare.on.ca/common/pages/UserFile.aspx?fileId=300130

3. **Cancer Centre of Southeastern Ontario.** Oncology Clinical Trials. *Cancer Centre of Southeastern Ontario at the Kingston General Hospital.* [Online] Oncology Clinical Trials at Regional Cancer Centre of Southeastern Ontario

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Revisions

- 2015/05/19: Draft created
- 2015/06/14: Edits to radiation therapy section content and addition of Appendix I
- 2015/06/15: Discussion at Gastrointestinal Disease Site Group meeting

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Appendix I: Radiation Therapy Management Details

Indications:
- Neo-Adjuvant: Stage I - III in patients who are medically fit and deemed to be resectable
- Adjuvant: For completely resected node positive, for selected cases, recommend MCC
- Definitive; Neo-Adjuvant; Adjuvant: where patient declines or is not fit for other treatments

Required Pre-planning
- Positron emission tomography with FDG

Imaging/Diagnostic tests:
- CT chest/abdomen with contrast
- Upper endoscopy + biopsy
- Possibly barium swallow
- Pulmonary function tests
- Bronchoscopy for selected cases

Patient set-up:
- Supine, arms above head, double MBS board or CIVCO, POSIREST2 Lung board

Immobilization:
- Low or high knee fix
- Oral contrast 30g Esopho-Cat, prior to positioning
- Centre as indicated on planning requisition
- 2.5 mm thickness, 2.5 mm spacing
- Scan limits:
  - Upper and mid esophagus - thyroid prominence to T11-12 interspace
  - Lower esophagus - thyroid prominence to bottom of L5

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Treatment Technique

- 3-field; 4-field;
- Consider IMRT for cervical esophagus tumors

Contouring

- GTV: primary lesion + enlarged lymph nodes: per CT sim, diagnostic CT, PET fusion, endoscopy, barium swallow
- CTV: 3-4 cm superiorly and inferiorly and 8-10 mm radially (if lower esophagus, usually 2cm margin inferiorly)
- Do NOT use auto-expansion from GTV; should contour esophagus and expand from this
- Regional nodes are included whether or not they are clinically positive
- For cervical primary, supraclavicular nodes are included
- For mid-esophageal primary, para-esophageal nodes are included
- For lower esophageal primary, celiac nodes are included
- PTV: 1cm superiorly and inferiorly; 8-10mm radially
- OARs: lungs, heart, spinal canal, liver, kidneys

Dose Prescription

- 50Gy in 25 fractions, given as 2Gy fractions, daily Mon-Fri prescribed to the 100% isodose line
- Minimum dose to PTV is 90%; Hot spots to be kept <105%

Dose constraints

- Lung: <30% should receive 20Gy
- Heart: < 50% should receive 40Gy
- Liver: < 50% should receive 25Gy
- Spinal Cord: < 40Gy to any point
- Kidney: < 50% should receive 20Gy

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Dose homogeneity
- GTV/CTV: 100% volume receives ≥ 95% of the prescribed dose
- PTV: 100% volume receives ≥ 90% of the prescribed dose
- Hot spots < 105%
- Dose Homogeneity in Eclipse turned on

Treatment verification
- kV-kV imaging daily (OBI units)
- Portal image on all treatment fields on Day One
- Portal Image on Day 2 and 3 to verify isocenter location in non OBI patients

Other Therapy
- Chemotherapy – concurrent
- Options: Cisplatin/5-FU First four days of weeks 1 and 5 OR Carboplatin/ Taxol – weekly

Special Orders
- CBC weeks 1 and 5(requested by medical oncology); other labs as needed

Follow-up
- Joint follow-up with Medical Oncology
- Definitive: 6 weeks after completion of treatment
- Neo-Adjuvant: 6 weeks after surgery

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