Abstract

Outcomes for patients with esophageal cancer have improved over the last decade with the implementation of multimodality therapy. There are currently no comprehensive guidelines addressing multidisciplinary management of esophageal cancer that have incorporated the input of surgeons, radiation oncologists, and medical oncologists. To address the need for multidisciplinary input in the management of esophageal cancer and to meet current best practices for clinical practice guidelines, the current guidelines were created as a collaboration between The Society of Thoracic Surgeons (STS), American Society for Radiation Oncology (ASTRO), and the American Society of Clinical Oncology (ASCO). Physician representatives chose 8 key clinical questions pertinent to the care of patients with locally advanced, resectable thoracic esophageal cancer (excluding cervical location). A comprehensive literature review was performed identifying 227 articles that met the inclusion criteria covering the use of induction chemotherapy, chemotherapy vs chemoradiotherapy before surgery, optimal radiation dose, the value of esophagectomy, timing of esophagectomy, the approach and extent of lymphadenectomy, the use of minimally invasive esophagectomy, and the value of adjuvant therapy after resection. The relevant data were reviewed and voted on by the panel with 80% of the authors, with 75% agreement on class and level of evidence. These data were then complied into the guidelines document.

Outcomes for patients with esophageal cancer have improved over the last decade with the implementation of multimodality therapy.[1] The overall survival (OS) of esophageal cancer has risen from 5% in 1970 to 12% in 2010 to the current high of 22%.[2,3] However, the specific way in which multimodality care is implemented varies widely based on physician bias and the wide range of available literature. There are currently no comprehensive guidelines addressing multidisciplinary management of esophageal cancer that have incorporated the input of surgeons, radiation oncologists, and medical oncologists. Most published guidelines in the literature are developed by individual medical specialty societies. To address the need for multidisciplinary input in the management of esophageal cancer and to meet current best practices for clinical practice guidelines, the current guidelines were created as a collaboration between The Society of Thoracic Surgeons (STS), American Society for Radiation Oncology (ASTRO), and the American Society of Clinical Oncology (ASCO).

These practice guidelines address 8 key clinical questions pertinent to the care of patients with locally advanced, resectable thoracic esophageal cancer (excluding cervical location). These questions include the use of induction chemotherapy, chemotherapy vs chemoradiotherapy (CRT) before surgery, optimal radiation dose, the value of esophagectomy, timing of esophagectomy, the approach and extent of lymphadenectomy, the use of minimally invasive esophagectomy, and the value of adjuvant therapy after resection.

Methodology

In 2020, the STS Workforce on Evidence-Based Surgery assembled a task force, with representation from ASTRO and ASCO, to update the 2014 STS Practice Guidelines on the Role of Multimodality Therapy for the Treatment of Esophageal Cancer.

The members of the writing committee submitted conflict of interest disclosure forms, which were reviewed by the chair and STS staff before confirmation for potential conflicts from relevant relationships with industry.

The writing committee reviewed the topics covered by the 2014 Guidelines and developed 8 questions in the Population, Intervention, Comparator, and Outcomes (PICO) format intended to focus on the highest priority and most clinically impactful areas for a systematic review. The PICO questions were sent to a research librarian in March 2021 to develop a strategy to identify all relevant articles published in English since 2000. Strategies were developed for both MEDLINE and Embase, the details for which may be found in Appendix 1. Reference lists were manually scanned for additional relevant articles. This strategy resulted in 2133 potentially relevant abstracts after duplicate studies were removed, and an additional 60 studies were identified as potentially relevant, for a total of 2193 abstracts. In June 2022, 2 additional PICO questions on radiation dose were added, which resulted in 1972 additional abstracts using MEDLINE and Embase. The results were refined using filters designed to identify randomized controlled trials (RCTs)[4] and comparative studies.[5] Two authors (S. F. and K. K.) screened the results, identifying 227 articles that met the inclusion criteria (Figure 1). Reasons for exclusion were that the study design, intervention, or the primary outcomes were not relevant to the PICO questions posed.

Two authors (S. F. and K. K.) developed an evidence table of the relevant papers (Appendix 2) and rated the studies for risk of bias. The Newcastle-Ottawa scale was used for observational studies (Appendix 3), and a custom-made checklist was used for RCTs and meta-analyses (Appendix 4). A meta-analysis was performed using Review Manager 5.4 software (The Cochrane Collaboration) when several studies reporting the same outcome were found and there were no previous meta-analyses in the literature. Random-effects models were chosen due to heterogeneity in study populations and the assumption that there is between-study uncertainty in addition to that within studies.