



Belgian Cancer Registry

COMPLEX SURGERY OESOPHAGUS

APPENDIX E



**Table E1 - Overview of all surgically treated patients with a malignant oesophageal tumour, [1/7/2019 - 30/06/2022]**

|  | <b>Belgium<br/>(N=1241)</b> |     |
|--|-----------------------------|-----|
| <b>Sex</b>                                   |                             |     |
| Male   | 980                         | 79% |
| Female                                       | 261                         | 21% |
| <b>Age at surgery</b>                        |                             |     |
| <= 69  | 789                         | 64% |
| 70-79  | 392                         | 32% |
| >=80   | 60                          | 5%  |
| Median age                                   | 66                          | 66  |
| IQR 25                                       | 60                          |     |
| IQR 75                                       | 72                          |     |
| <b>Lesion to treat (in oesophagus/GOJ)</b>   |                             |     |
| Primary tumour                               | 1184                        | 95% |
| Relapse of primary tumour                    | 53                          | 4%  |
| Metastasis                                   | 4                           | 0%  |
| <b>Morphology</b>                            |                             |     |
| Adenocarcinoma                               | 906                         | 73% |
| Squamous cell carcinoma                      | 312                         | 25% |
| Other, unspecified or missing                | 23                          | 2%  |
| <b>Primary tumour localisation</b>           |                             |     |
| C15.0/C15.3 Cervical/upper third oesophagus  | 40                          | 3%  |
| C15.1/C15.4 Thoracic/middle third oesophagus | 159                         | 13% |
| C15.2/C15.5 Abdominal/lower third oesophagus | 619                         | 50% |
| C15.8 Overlapping lesion of oesophagus       | 4                           | 0%  |
| C16.0 Gastro-oesophageal junction            | 405                         | 33% |
| Other  | 14                          | 1%  |
| <b>Clinical stage</b>                        |                             |     |
| 0  | 8                           | 1%  |
| I  | 113                         | 10% |
| II   | 208                         | 18% |
| III  | 566                         | 49% |
| IV   | 241                         | 21% |
| IVA <sup>#</sup>                             | 195                         | 82% |
| IVB <sup>#</sup>                             | 44                          | 18% |
| X  | 16                          | 1%  |
| TNM not applicable or relapse                | 89                          |     |
| <b>Pathological stage</b>                    |                             |     |
| 0  | 12                          | 5%  |

|   |     |     |
|---|-----|-----|
| I   | 113 | 44% |
| II  | 57  | 22% |
| III   | 50  | 19% |
| IV  | 22  | 8%  |
| X   | 5   | 2%  |
| TNM not applicable or relapse                               | 32  |     |
| Neoadjuvant treatment                                       | 950 |     |
| <b>yPathological stage</b>                                  |     |     |
| 0   | 139 | 16% |
| I   | 99  | 11% |
| II  | 268 | 30% |
| III   | 272 | 30% |
| IV  | 106 | 12% |
| X   | 10  | 1%  |
| TNM not applicable or relapse                               | 56  |     |
| No neoadjuvant treatment                                    | 291 |     |
| <b>Prior surgery or endoscopic treatment</b>                |     |     |
| Prior major thoracic or abdominal surgery                   | 102 | 8%  |
| Endoscopic treatment  | 68  | 5%  |
| EMR/ESD   | 68  |     |
| RFA   | 2   |     |
| Ablation techniques other than RFA                          | 0   |     |
| Other treatment modality (that could affect the oesophagus) | 23  | 2%  |
| <b>Neoadjuvant treatment</b>                                |     |     |
| Chemotherapy  | 322 | 26% |
| Targeted therapy/biologicals                                | 12  | 1%  |
| Radiotherapy  | 8   | 1%  |
| Chemoradiotherapy   | 620 | 50% |
| No chemo, radiation or targeted treatment                   | 291 | 23% |
| <b>Charlson Comorbidity Index</b>                           |     |     |
| 0   | 521 | 42% |
| 1   | 333 | 27% |
| 2   | 201 | 16% |
| 3   | 100 | 8%  |
| 4   | 49  | 4%  |
| 5   | 16  | 1%  |
| 6   | 9   | 1%  |
| 7   | 7   | 1%  |
| 8   | 3   | 0%  |
| 9   | 2   | 0%  |
| <b>WHO score at surgery</b>                                 |     |     |
| 0 - Asymptomatic, normal activity                           | 312 | 25% |
| 1 - Symptomatic, but ambulant                               | 758 | 61% |
| 2 - Symptomatic, bedbound < 50% day                         | 142 | 11% |
| 3 - Symptomatic, bedbound > 50% day                         | 25  | 2%  |

|  |      |     |
|--|------|-----|
| 4 - Completely dependent, 100% bedbound  | 4    | 0%  |
| <b>ASA score</b>   |      |     |
| 1 - Healthy person   | 54   | 4%  |
| 2 - Mild systemic disease, normal activity   | 551  | 44% |
| 3 - Serious systemic disease, limited activity   | 619  | 50% |
| 4 - Life-threatening illness, handicapped  | 17   | 1%  |
| <b>Surgery intention</b>   |      |     |
| Surgery as primary treatment   | 274  | 22% |
| Post-induction (neoadjuvant chemo- and/or radiotherapy)  | 876  | 71% |
| Salvage post-radical chemo- and/or radiotherapy  | 61   | 5%  |
| Palliative   | 11   | 1%  |
| Recurrence   | 19   | 2%  |
| <b>Type of surgery</b>   |      |     |
| Minimally invasive surgery (MIS)   | 760  | 61% |
| Total laparoscopic/Video-Assisted Thoracoscopic Surgery  | 388  | 51% |
| Partial/hybrid   | 372  | 49% |
| Open surgery   | 459  | 37% |
| Transhiatal  | 56   | 12% |
| Transthoracic  | 403  | 88% |
| Conversion from MIS to open surgery  | 22   | 2%  |
| <b>Nomenclature code for complex surgery</b>   |      |     |
| 228270-228281: Thoracic or thoracic-abdominal oesophagectomy or gastro-oesophagectomy in one surgery with continuity recovery                                  | 2    | 0%  |
| 228292-228303: Subtotal oesophagectomy up to the level of the arcus aortae, with continuity recovery   | 4    | 0%  |
| 228314-228325: Thoracic or thoracic-abdominal oesophagectomy or gastro-oesophagectomy in one surgery with continuity recovery and extensive lymph node removal | 368  | 30% |
| 228336-228340: Subtotal oesophagectomy up to the level of the arcus aortae, with continuity recovery and extensive lymph node removal                          | 867  | 70% |
| <b>Esophagectomy</b>   |      |     |
| Partial  | 481  | 39% |
| Subtotal   | 738  | 59% |
| Total laryngectomy   | 22   | 2%  |
| <b>Antithrombotic medication</b>   |      |     |
| No   | 1009 | 81% |
| Yes  | 232  | 19% |
| <b>Was the patient referred?</b>   |      |     |
| No   | 286  | 23% |
| Yes  | 955  | 77% |

#for some diagnoses subclassification was not available

**Table E2 - Comparison between all primary malignant oesophageal tumours with surgery during the convention [1/7/2019 – 30/6/2022] and during the T0 period [2015-2018]**

|  | Convention<br>(N=1184) |     | T0 <sub>2015-2018</sub><br>(N=1584) |     |
|--|------------------------|-----|-------------------------------------|-----|
| <b>Sex</b>                                   |                        |     |                                     |     |
| Male   | 943                    | 80% | 1243                                | 78% |
| Female                                       | 241                    | 20% | 341                                 | 22% |
| <b>Age at surgery</b>                        |                        |     |                                     |     |
| <= 69  | 754                    | 64% | 1053                                | 66% |
| 70-79  | 374                    | 32% | 446                                 | 28% |
| >=80   | 56                     | 5%  | 85                                  | 5%  |
| Median age                                   | 66                     |     | 65                                  |     |
| IQR 25                                       | 60                     |     | 59                                  |     |
| IQR 75                                       | 72                     |     | 71                                  |     |
| <b>Morphology</b>                            |                        |     |                                     |     |
| Adenocarcinoma                               | 882                    | 74% | 1141                                | 72% |
| Squamous cell carcinoma                      | 280                    | 24% | 423                                 | 27% |
| Other, unspecified or missing                | 22                     | 2%  | 20                                  | 1%  |
| <b>Primary tumour localisation</b>           |                        |     |                                     |     |
| C15.0/C15.3 Cervical/upper third oesophagus  | 27                     | 2%  | 42                                  | 3%  |
| C15.1/C15.4 Thoracic/middle third oesophagus | 149                    | 13% | 173                                 | 11% |
| C15.2/C15.5 Abdominal/lower third oesophagus | 604                    | 51% | 609                                 | 38% |
| C15.8 Overlapping lesion of oesophagus       | 4                      | 0%  | 2                                   | 0%  |
| C15.9 Oesophagus, NOS                        | 0                      | 0%  | 133                                 | 8%  |
| C16.0 Gastro-oesophageal junction            | 392                    | 33% | 625                                 | 39% |
| Other  | 8                      | 1%  |                                     |     |
| <b>Clinical TNM category grouping</b>        |                        |     |                                     |     |
| <b>Clinical T</b>                            |                        |     |                                     |     |
| cTx-0-is-1-2                                 | 366                    | 31% | 688                                 | 43% |
| cT3-4  | 816                    | 69% | 896                                 | 57% |
| Missing                                      | 2                      | 0%  | 0                                   | 0%  |
| <b>Clinical N</b>                            |                        |     |                                     |     |
| cNx-0  | 510                    | 43% | 724                                 | 46% |
| cN+  | 672                    | 57% | 860                                 | 54% |
| Missing                                      | 2                      | 0%  | 0                                   | 0%  |
| <b>Clinical M</b>                            |                        |     |                                     |     |
| cMx-0  | 1,124                  | 95% | 1,538                               | 97% |
| cM+  | 46                     | 4%  | 46                                  | 3%  |
| Missing                                      | 14                     | 1%  | 0                                   | 0%  |
| <b>Neoadjuvant treatment</b>                 |                        |     |                                     |     |
| Chemotherapy                                 | 315                    | 27% | 253                                 | 16% |
| Targeted therapy/biologicals <sup>§</sup>    | 12                     | 1%  |                                     |     |
| Radiotherapy                                 | 6                      | 1%  | 10                                  | 1%  |
| Chemoradiotherapy                            | 589                    | 50% | 831                                 | 52% |

|  |     |     |      |     |
|--|-----|-----|------|-----|
| No chemo, radiation or targeted treatment <sup>§</sup>   | 274 | 23% |      |     |
| <b>WHO score at surgery</b>  |     |     |      |     |
| 0 - Asymptomatic, normal activity  | 302 | 26% | 282  | 18% |
| 1 - Symptomatic, but ambulant  | 722 | 61% | 1055 | 67% |
| 2 - Symptomatic, bedbound < 50% day  | 135 | 11% | 29   | 2%  |
| 3 - Symptomatic, bedbound > 50% day  | 21  | 2%  | 5    | 0%  |
| 4 - Completely dependent, 100% bedbound  | 4   | 0%  | 6    | 0%  |
| <b>Nomenclature code for complex surgery</b>   |     |     |      |     |
| 228270-228281: Thoracic or thoracic-abdominal oesophagectomy or gastro-oesophagectomy in one surgery with continuity recovery                                  | 1   | 0%  | 70   | 4%  |
| 228292-228303: Subtotal oesophagectomy up to the level of the arcus aortae, with continuity recovery   | 3   | 0%  | 118  | 7%  |
| 228314-228325: Thoracic or thoracic-abdominal oesophagectomy or gastro-oesophagectomy in one surgery with continuity recovery and extensive lymph node removal | 349 | 29% | 127  | 8%  |
| 228336-228340: Subtotal oesophagectomy up to the level of the arcus aortae, with continuity recovery and extensive lymph node removal                          | 831 | 70% | 1269 | 80% |

<sup>#</sup>for some diagnoses subclassification was not available

<sup>§</sup>no information on targeted therapy for T0 period



**Table E3 - Comparison between all malignant oesophageal tumours with surgery and those without surgery during the convention [1/7/2019 – 30/6/2022]**

|  | Surgery<br>(N=1241) |     | No surgery<br>(N=1628) |     |
|--|---------------------|-----|------------------------|-----|
| <b>Sex</b>                                   |                     |     |                        |     |
| Male   | 980                 | 79% | 1239                   | 76% |
| Female                                       | 261                 | 21% | 389                    | 24% |
| <b>Age at surgery/diagnosis</b>              |                     |     |                        |     |
| <= 69  | 789                 | 64% | 831                    | 51% |
| 70-79  | 392                 | 32% | 542                    | 33% |
| >=80   | 60                  | 5%  | 254                    | 16% |
| Median age                                   | 66                  |     | 69                     |     |
| IQR 25                                       | 60                  |     | 62                     |     |
| IQR 75                                       | 72                  |     | 76                     |     |
| <b>Lesion to treat (in esophagus/GEJ)</b>    |                     |     |                        |     |
| Primary tumour                               | 1184                | 95% | 1540                   | 95% |
| Relapse of primary tumour                    | 53                  | 4%  | 82                     | 5%  |
| Metastasis                                   | 4                   | 0%  | 4                      | 0%  |
| <b>Morphology</b>                            |                     |     |                        |     |
| Adenocarcinoma                               | 906                 | 73% | 896                    | 55% |
| Squamous cell carcinoma                      | 312                 | 25% | 685                    | 42% |
| Other, unspecified or missing                | 23                  | 2%  | 47                     | 3%  |
| <b>Primary tumour localisation</b>           |                     |     |                        |     |
| C15.0/C15.3 Cervical/upper third oesophagus  | 40                  | 3%  | 217                    | 13% |
| C15.1/C15.4 Thoracic/middle third oesophagus | 159                 | 13% | 292                    | 18% |
| C15.2/C15.5 Abdominal/lower third oesophagus | 619                 | 50% | 755                    | 46% |
| C15.8 Overlapping lesion of oesophagus       | 4                   | 0%  | 29                     | 2%  |
| C15.9 Oesophagus, NOS                        | 0                   | 0%  | 36                     | 2%  |
| C16.0 Gastro-oesophageal junction            | 405                 | 33% | 273                    | 17% |
| Other  | 14                  | 1%  | 26                     | 2%  |
| <b>Clinical stage</b>                        |                     |     |                        |     |
| 0  | 8                   | 1%  | 70                     | 5%  |
| I  | 113                 | 10% | 215                    | 16% |
| II   | 208                 | 18% | 181                    | 13% |
| III  | 566                 | 49% | 309                    | 23% |
| IV   | 241                 | 21% | 495                    | 36% |
| IVA <sup>#</sup>                             | 195                 | 82% | 132                    | 27% |
| IVB <sup>#</sup>                             | 44                  | 18% | 355                    | 73% |
| X  | 16                  | 1%  | 100                    | 7%  |
| TNM not applicable or relapse                | 89                  |     | 258                    |     |
| <b>WHO score</b>                             |                     |     |                        |     |
| 0 - Asymptomatic, normal activity            | 312                 | 25% | 222                    | 14% |
| 1 - Symptomatic, but ambulant                | 758                 | 61% | 800                    | 49% |
| 2 - Symptomatic, bedbound < 50% day          | 142                 | 11% | 87                     | 5%  |

|   |     |     |      |     |
|---|-----|-----|------|-----|
| 3 - Symptomatic, bedbound > 50% day     | 25  | 2%  | 17   | 1%  |
| 4 - Completely dependent, 100% bedbound | 4   | 0%  | 5    | 0%  |
| Missing                                 | 0   | 0%  | 497  | 31% |
| <b>Was the patient referred?</b>        |     |     |      |     |
| No                                      | 286 | 23% | 624  | 38% |
| Yes                                     | 955 | 77% | 1004 | 62% |

#for some diagnoses subclassification was not available





**Table E4 - Comparison between primary malignant oesophageal tumours that were discussed and those that were not discussed on a multidisciplinary consultation for complex oesophageal pathology in an expert centre during the convention.**

|  | Discussed<br>(N=2724) |     | Not discussed <sup>°</sup><br>(N=1874) |     |
|--|-----------------------|-----|--|-----|
| <b>Sex</b>                                   |                       |     |  |     |
| Male   | 2109                  | 77% | 1377                                   | 73% |
| Female                                       | 615                   | 23% | 497                                    | 27% |
| <b>Age at surgery/diagnosis</b>              |                       |     |  |     |
| <= 69  | 1536                  | 56% | 729                                    | 39% |
| 70-79  | 888                   | 33% | 602                                    | 32% |
| >=80   | 300                   | 11% | 543                                    | 29% |
| Median age                                   | 68                    |     | 73                                     |     |
| IQR 25                                       | 61                    |     | 64                                     |     |
| IQR 75                                       | 74                    |     | 81                                     |     |
| <b>Morphology</b>                            |                       |     |  |     |
| Adenocarcinoma                               | 1737                  | 64% | 1170                                   | 62% |
| Squamous cell carcinoma                      | 924                   | 34% | 598                                    | 32% |
| Other, unspecified or missing                | 63                    | 2%  | 106                                    | 6%  |
| <b>Primary tumour localisation</b>           |                       |     |  |     |
| C15.0/C15.3 Cervical/upper third oesophagus  | 229                   | 8%  | 195                                    | 10% |
| C15.1/C15.4 Thoracic/middle third oesophagus | 431                   | 16% | 232                                    | 12% |
| C15.2/C15.5 Abdominal/lower third oesophagus | 1325                  | 49% | 639                                    | 34% |
| C15.8 Overlapping lesion of oesophagus       | 30                    | 1%  | 10                                     | 1%  |
| C15.9 Oesophagus, NOS                        | 33                    | 1%  | 179                                    | 10% |
| C16.0 Gastro-oesophageal junction            | 653                   | 24% | 619                                    | 33% |
| Other  | 23                    | 1%  | 0                                      | 0%  |
| <b>Clinical stage</b>                        |                       |     |  |     |
| 0  | 78                    | 3%  | 21                                     | 1%  |
| I  | 327                   | 13% | 117                                    | 7%  |
| II   | 388                   | 15% | 178                                    | 10% |
| III  | 872                   | 35% | 313                                    | 18% |
| IV   | 734                   | 29% | 861                                    | 50% |
| IVA <sup>#</sup>                             | 326                   | 45% | 113                                    | 13% |
| IVB <sup>#</sup>                             | 398                   | 55% | 748                                    | 87% |
| X  | 113                   | 4%  | 241                                    | 14% |
| TNM not applicable or relapse                | 212                   |     | 143                                    |     |

<sup>°</sup>For the patients that were not discussed on a multidisciplinary consultation for complex esophageal pathology the considered time period is [1/7/2019 – 31/12/2022] because the information is coming from the cancer registration database

<sup>#</sup>for some diagnoses subclassification was not available