

Supplementary Material

Table S1. Univariate and multivariate analysis of factors associated with postoperative pneumonia after Ivor Lewis totally minimally invasive esophagectomy.

	Univariate		Multivariate ^a	
	OR (95% CI)	P value	OR (95% CI)	P value
Patient characteristics				
Sex				
Male	<i>ref</i>			
Female	0.62 (0.35-1.08)	0.093		
Age ^b	1.21 (0.95-1.52)	0.115		
Body mass index (kg/m ²)	1.01 (0.97-1.06)	0.651	1.01 (0.96-1.07)	0.615
ASA classification		0.666		
1	<i>ref</i>			
2	1.11 (0.59-2.08)	0.748		
≥3	1.31 (0.66-2.59)	0.437		
Charlson Comorbidity Index		0.115		0.069
0	<i>ref</i>		<i>ref</i>	
1	1.06 (0.68-1.65)	0.809	1.14 (0.70-1.86)	0.607
≥2	1.68 (1.02-2.77)	<u>0.042</u>	1.87 (1.10-3.20)	<u>0.021</u>
Tumour histology		0.371		
Adenocarcinoma	<i>ref</i>			
Squamous cell carcinoma	0.81 (0.44-1.50)	0.507		
Other	0.26 (0.03-2.10)	0.207		
Tumour stage		0.961		
I	<i>ref</i>			
II	1.01 (0.63-1.62)	0.976		
III	0.95 (0.56-1.59)	0.835		
Tumour location		0.161		
Mid esophagus	<i>ref</i>			
Distal esophagus	1.00 (0.43-2.35)	1.000		
Junction	1.54 (0.62-3.82)	0.347		
Surgical characteristics				
Year of surgery		0.355		0.818
2012-2013	<i>ref</i>		<i>ref</i>	
2014-2015	0.61 (0.34-1.09)	0.095	1.07 (0.54-2.15)	0.842
2016-2017	0.83 (0.48-1.44)	0.511	1.17 (0.61-2.25)	0.628
2018	0.86 (0.43-1.72)	0.667	1.500 (0.63-3.58)	0.361
Duration of surgery ^c	1.00 (0.94-1.09)	0.599	0.97 (0.89-1.09)	0.720
Nr. of resected lymph nodes	1.02 (1.00-1.05)	0.065	1.02 (0.99-1.04)	0.213
Blood loss (ml) ^d	1.00 (0.91-1.11)	0.821	1.00 (0.91-1.11)	0.965
Conversion of surgery				
No	<i>ref</i>			
Yes	0.38 (0.11-1.33)	0.131		
Use of SDD				
No	<i>ref</i>		<i>ref</i>	
Yes	0.43 (0.28-0.66)	<u><0.001</u>	0.40 (0.23-0.67)	<u><0.001</u>

Nr. number, SDD selective decontamination of the digestive tract, OR odds ratio, CI confidence interval, *ref* reference

^a Model consists of BMI, Charlson Comorbidity Index, year of surgery, duration of surgery, number of lymph nodes resected, blood loss and use of SDD

^b OR per 10 years increase in age (per 1 year increase in age: univariate OR 1.019; 95% CI: 0.995-1.043)

^c OR per 30 minute increase in duration of surgery (per 1 minute increase in surgery: univariate OR 1.000; 95% CI: 0.998-1.003, multivariate OR 0.999; 95% CI: 0.996-1.003)

^dOR per 100 millilitre increase in blood loss (per 1 millilitre increase in blood loss: univariate OR 1.000; 95% CI: 0.999-1.001, multivariate OR 1.000; 95% CI: 0.999-1.001)

Table S2. Univariate and multivariate analysis of factors associated with anastomotic leakage after Ivor Lewis totally minimally invasive esophagectomy.

	Univariate		Multivariate ^a	
	OR (95% CI)	P value	OR (95% CI)	P value
Patient characteristics				
Sex				
Male	<i>ref</i>			
Female	0.61 (0.29-1.27)	0.184		
Age ^b	1.07 (0.80-1.42)	0.655		
Body mass index (kg/m ²)	1.05 (0.99-1.11)	0.116	1.04 (0.98-1.10)	0.188
ASA classification		0.581		
1	<i>ref</i>			
2	1.42 (0.61-3.30)	0.419		
≥3	1.62 (0.65-4.00)	0.299		
Charlson Comorbidity Index		0.963		
0	<i>ref</i>			
1	1.00 (0.59-1.72)	0.990		
≥2	0.92 (0.48-1.77)	0.796		
Tumour histology		0.365		
Adenocarcinoma	<i>ref</i>			
Squamous cell carcinoma	0.86 (0.39-1.90)	0.706		
Other	2.63 (0.64-10.78)	0.179		
Tumour stage		0.895		
I	<i>ref</i>			
II	1.02 (0.57-1.83)	0.948		
III	0.89 (0.47-1.71)	0.733		
Tumour location		0.387		
Mid esophagus	<i>ref</i>			
Distal esophagus	2.70 (0.62-11.69)	0.184		
Junction	2.89 (0.63-13.18)	0.171		
Surgical characteristics				
Year of surgery		0.466		0.521
2012-2013	<i>ref</i>		<i>ref</i>	
2014-2015	0.60 (0.30-1.20)	0.146	0.81 (0.38-1.69)	0.565
2016-2017	0.79 (0.41-1.52)	0.484	0.75 (0.39-1.46)	0.396
2018	0.61 (0.25-1.47)	0.268	0.49 (0.19-1.25)	0.135
Duration of surgery ^c	1.06 (1.00-1.16)	0.109	1.00 (1.00-1.01)	0.087
Nr. of resected lymph nodes	1.00 (0.97-1.03)	0.889		
Blood loss (ml) ^d	1.00 (0.91-1.11)	0.942		
Conversion of surgery				
No	<i>ref</i>			
Yes	0.55 (0.13-2.42)	0.429		
Use of SDD				
No	<i>ref</i>		<i>ref</i>	
Yes	0.48 (0.28-0.83)	<u>0.009</u>	0.46 (0.26-0.84)	<u>0.011</u>

Nr. number, SDD selective decontamination of the digestive tract, OR odds ratio, CI confidence interval, *ref* reference

^a Model consists of BMI, year of surgery, duration of surgery and use of SDD

^b OR per 10 years increase in age (per 1 year increase in age: univariate OR 1.007; 95% CI: 0.987-1.036)

^c OR per 30 minute increase in duration of surgery (per 1 minute increase in surgery: univariate OR 1.002; 95% CI: 1.000-1.005, multivariate OR 1.003; 95% CI: 1.000-1.006)

^d OR per 100 millilitre increase in blood loss (per 1 millilitre increase in blood loss: univariate OR 1.000; 95% CI: 0.999-1.001)

Table S3. Univariate and multivariate analysis of factors associated with all-cause 1-year mortality after Ivor Lewis totally minimally invasive esophagectomy.

	Univariate		Multivariate ^a	
	OR (95% CI)	P value	OR (95% CI)	P value
Patient characteristics				
Sex				
Male	<i>ref</i>			
Female	0.83 (0.45-1.53)	0.543		
Age ^b	1.38 (1.06-1.81)	<u>0.016</u>	1.36 (1.02-1.81)	<u>0.037</u>
Body mass index (kg/m ²)	1.020 (0.97-1.07)	0.457		
ASA classification		<u>0.026</u>		
1	<i>ref</i>			
2	0.87 (0.43-1.75)	0.692		
≥3	1.68 (0.80-3.56)	0.173		
Charlson Comorbidity Index		<u>0.010</u>		0.065
0	<i>ref</i>		<i>ref</i>	
1	1.59 (0.96-2.64)	0.074	1.30 (0.75-2.25)	0.345
≥2	2.31 (1.32-4.02)	<u>0.003</u>	2.01 (1.12-3.60)	<u>0.020</u>
Tumour histology		0.783		
Adenocarcinoma	<i>Ref</i>			
Squamous cell carcinoma	0.77 (0.37-1.61)	0.492		
Other	1.08 (0.22-5.47)	0.922		
Tumour stage		<u>0.001</u>		<u>0.009</u>
I	<i>ref</i>		<i>ref</i>	
II	2.93 (1.53-5.64)	<u>0.001</u>	2.71 (1.39-5.29)	<u>0.004</u>
III	3.68 (1.85-7.33)	<u><0.001</u>	2.89 (1.36-6.12)	<u>0.006</u>
Tumour location		0.815		
Mid esophagus	<i>ref</i>			
Distal esophagus	1.15 (0.45-2.93)	0.775		
Junction	0.97 (0.35-2.69)	0.956		
Surgical characteristics				
Year of surgery		<u>0.049</u>		
2012-2013	<i>ref</i>			
2014-2015	1.36 (0.73-2.55)	0.338		
2016-2017	0.74 (0.39-1.41)	0.361		
2018	1.91 (0.75-4.87)	0.173		
Duration of surgery ^c	1.09 (1.00-1.16)	<u>0.026</u>	1.06 (1.00-1.16)	0.073
Nr. of resected lymph nodes	0.99 (0.97-1.02)	0.618		
Blood loss (ml) ^d	0.90 (0.82-1.00)	0.262		
Conversion of surgery				
No	<i>ref</i>			
Yes	2.29 (0.91-5.76)	0.078		
Use of SDD				
No	<i>ref</i>		<i>ref</i>	
Yes	1.53 (0.99-2.38)	0.057	1.31 (0.80-2.14)	0.278

Nr. number, SDD selective decontamination of the digestive tract, OR odds ratio, CI confidence interval, *ref* reference

^a Model consists of age, Charlson Comorbidity Index, tumour stage, duration of surgery and use of SDD.

^b OR per 10 years increase in age (per 1 year increase in age: univariate OR 1.033; 95% CI: 1.006-1.061, multivariate OR 1.312; 95% CI: 1.002-1.061)

^c OR per 30 minute increase in duration of surgery (per 1 minute increase in surgery: univariate OR 1.003; 95% CI: 1.000-1.005, multivariate OR 1.002; 95% CI: 1.00-1.005)

^d OR per 100 millilitre increase in blood loss (per 1 millilitre increase in blood loss: univariate OR 0.999; 95% CI: 0.998-1.000)