



RIZIV convention complex Surgeries, T_0

Oesophageal and Gastro-Esophageal Junction cancer

Data exploration

&

Patient case mix adjusted OR and HR

Period 2008-2016

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Version 1.2

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1. Oesophageal and GEJ cancer, patient case mix: 2008-2016.

Table 1. Frequency table of patient and tumour baseline characteristics, N=3,352.

Characteristic	Total	Surgical volume Frequency (Column percent)			p
		low	medium	high	
Overall	3,352	913 (100.0)	1,204 (100.0)	1,235 (100.0)	
Gender					0.1997
male	2,633 (78.6)	730 (80.0)	926 (76.9)	977 (79.1)	
females	719 (21.4)	183 (20.0)	278 (23.1)	258 (20.9)	
Age					0.4264
<=49	248 (7.4)	59 (6.5)	88 (7.3)	101 (8.2)	
50-59	879 (26.2)	227 (24.9)	317 (26.3)	335 (27.1)	
60-69	1,251 (37.3)	341 (37.3)	449 (37.3)	461 (37.3)	
70+	974 (29.1)	286 (31.3)	350 (29.1)	338 (27.4)	
Combined stage					<.0001
0/is	152 (4.5)	14 (1.5)	49 (4.1)	89 (7.2)	
I	926 (27.6)	245 (26.8)	342 (28.4)	339 (27.4)	
II	866 (25.8)	237 (26.0)	325 (27.0)	304 (24.6)	
III	1,107 (33.0)	338 (37.0)	392 (32.6)	377 (30.5)	
IV	246 (7.3)	64 (7.0)	73 (6.1)	109 (8.8)	
NA	23 (0.7)	3 (0.3)	8 (0.7)	12 (1.0)	
X	32 (1.0)	12 (1.3)	15 (1.2)	5 (0.4)	
WHO - Performance Status					<.0001
0 – Asymptomatic	591 (17.6)	92 (10.1)	251 (20.8)	248 (20.1)	
1 – Symptomatic but completely ambulatory	2,168 (64.7)	618 (67.7)	720 (59.8)	830 (67.2)	
2 – Symptomatic, <50% in bed during the day	73 (2.2)	34 (3.7)	25 (2.1)	14 (1.1)	
3 – Symptomatic, >50% in bed, but not bedbound	4 (0.1)	2 (0.2)	2 (0.2)	0 (0.0)	
4 – Bedbound	7 (0.2)	1 (0.1)	4 (0.3)	2 (0.2)	
Missing	509 (15.2)	166 (18.2)	202 (16.8)	141 (11.4)	
Topography					<.0001
C150	20 (0.6)	9 (1.0)	3 (0.2)	8 (0.6)	
C151	16 (0.5)	6 (0.7)	7 (0.6)	3 (0.2)	
C152	19 (0.6)	13 (1.4)	6 (0.5)	0 (0.0)	
C153	76 (2.3)	13 (1.4)	32 (2.7)	31 (2.5)	
C154	344 (10.3)	65 (7.1)	137 (11.4)	142 (11.5)	
C155	1,089 (32.5)	240 (26.3)	352 (29.2)	497 (40.2)	
C158	1 (0.0)	0 (0.0)	0 (0.0)	1 (0.1)	
C159	490 (14.6)	170 (18.6)	197 (16.4)	123 (10.0)	
C160	1,297 (38.7)	397 (43.5)	470 (39.0)	430 (34.8)	
Diabetic					0.3853

Characteristic	Surgical volume				p
	Total	low	medium	high	
no	2,887 (86.1)	781 (85.5)	1,029 (85.5)	1,077 (87.2)	
yes	465 (13.9)	132 (14.5)	175 (14.5)	158 (12.8)	
Cardiovascular disease					0.0441
no	1,664 (49.6)	423 (46.3)	602 (50.0)	639 (51.7)	
yes	1,688 (50.4)	490 (53.7)	602 (50.0)	596 (48.3)	
Respiratory disease					0.8459
no	3,148 (93.9)	861 (94.3)	1,129 (93.8)	1,158 (93.8)	
yes	204 (6.1)	52 (5.7)	75 (6.2)	77 (6.2)	
Previous number of hospitalisations					0.7214
none	2,453 (73.2)	656 (71.9)	889 (73.8)	908 (73.5)	
1 hosp	558 (16.6)	157 (17.2)	203 (16.9)	198 (16.0)	
2 hosp	196 (5.8)	53 (5.8)	68 (5.6)	75 (6.1)	
>2 hosp	145 (4.3)	47 (5.1)	44 (3.7)	54 (4.4)	
Previous inpatient bed days					0.2564
none	2,453 (73.2)	656 (71.9)	889 (73.8)	908 (73.5)	
1-5 days	613 (18.3)	162 (17.7)	214 (17.8)	237 (19.2)	
6-15 days	180 (5.4)	62 (6.8)	61 (5.1)	57 (4.6)	
>15 days	106 (3.2)	33 (3.6)	40 (3.3)	33 (2.7)	
Neoadjuvant chemo					<.0001
no	1,491 (44.5)	495 (54.2)	516 (42.9)	480 (38.9)	
yes	1,861 (55.5)	418 (45.8)	688 (57.1)	755 (61.1)	
Region					<.0001
Brussels-Capital region	185 (5.5)	94 (10.3)	84 (7.0)	7 (0.6)	
Flemish Region	2,278 (68.0)	432 (47.3)	640 (53.2)	1,206 (97.7)	
Walloon Region	889 (26.5)	387 (42.4)	480 (39.9)	22 (1.8)	
Surg_prest_year					0.0001
2008	345 (10.3)	101 (11.1)	137 (11.4)	107 (8.7)	
2009	314 (9.4)	96 (10.5)	111 (9.2)	107 (8.7)	
2010	359 (10.7)	110 (12.0)	123 (10.2)	126 (10.2)	
2011	376 (11.2)	103 (11.3)	145 (12.0)	128 (10.4)	
2012	399 (11.9)	119 (13.0)	153 (12.7)	127 (10.3)	
2013	371 (11.1)	118 (12.9)	120 (10.0)	133 (10.8)	
2014	412 (12.3)	86 (9.4)	137 (11.4)	189 (15.3)	
2015	406 (12.1)	100 (11.0)	137 (11.4)	169 (13.7)	
2016	370 (11.0)	80 (8.8)	141 (11.7)	149 (12.1)	

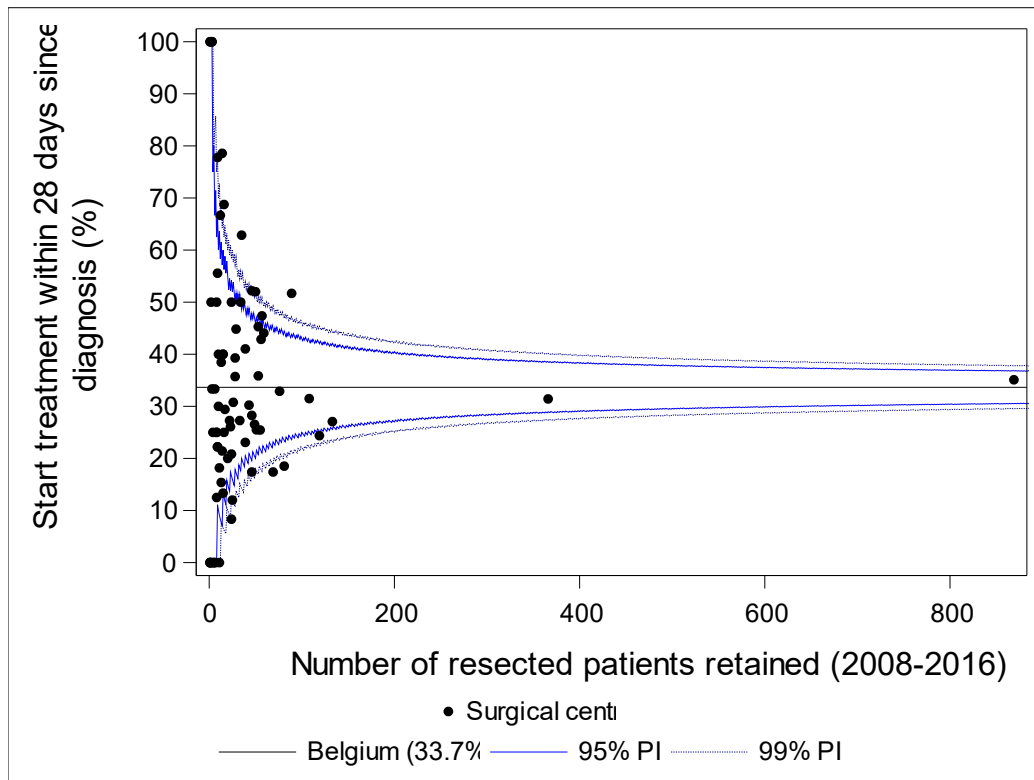
2. Oesophageal and GEJ cancer, Start treatment within 28 days: 2008-2016.

Table 2. Oesophageal cancer, Start treatment within 28 days since confirmed diagnosis.

Characteristic	Start treatment within 28 days				
	N	N of treatments	%	95% CI	p-value
Overall	3,352	1,128	33.7	[32.1, 35.3]	
Gender					0.2486
male	2,633	899	34.1	[32.3, 36.0]	
females	719	229	31.8	[28.5, 35.3]	
Age					0.0143
<=49	248	98	39.5	[33.5, 45.6]	
50-59	879	316	35.9	[32.8, 39.1]	
60-69	1,251	418	33.4	[30.8, 36.1]	
70+	974	296	30.4	[27.5, 33.3]	
Combined stage					<.0001
0/is	152	54	35.5	[28.3, 43.4]	
I	926	203	21.9	[19.3, 24.6]	
II	866	302	34.9	[31.8, 38.1]	
III	1,107	433	39.1	[36.2, 42.0]	
IV	246	119	48.4	[42.3, 54.5]	
NA	23	7	30.4	[13.0, 47.8]	
X	32	10	31.3	[15.6, 46.9]	
Topography					0.0034
C150	20	6	30.0	[10.0, 50.0]	
C151	16	2	12.5	[0.0, 31.3]	
C152	19	6	31.6	[10.5, 52.6]	
C153	76	28	36.8	[26.3, 47.4]	
C154	344	106	30.8	[25.9, 35.8]	
C155	1,089	344	31.6	[28.8, 34.3]	
C158	1	0	0.0	—	
C159	490	143	29.2	[25.1, 33.3]	
C160	1,297	493	38.0	[35.4, 40.6]	
WHO - Performance Status					<.0001
0 – Asymptomatic	591	175	29.6	[25.9, 33.3]	
1 – Symptomatic but completely ambulatory	2,168	797	36.8	[34.7, 38.8]	
2 – Symptomatic, <50% in bed during the day	73	29	39.7	[28.8, 50.7]	
3 – Symptomatic, >50% in bed, but not bedbound	4	3	75.0	[25.0, 100.0]	
4 – Bedbound	7	2	28.6	[0.0, 57.1]	
Missing	509	122	24.0	[20.2, 27.7]	
Diabetic					0.0507

Start treatment within 28 days					
Characteristic	N	N of treatments	%	95% CI	p-value
no	2,887	990	34.3	[32.6, 36.0]	
yes	465	138	29.7	[25.6, 33.8]	
Cardiovascular disease					0.0054
no	1,664	598	35.9	[33.7, 38.2]	
yes	1,688	530	31.4	[29.2, 33.6]	
Respiratory disease					0.3093
no	3,148	1,066	33.9	[32.2, 35.5]	
yes	204	62	30.4	[24.0, 36.8]	
Previous number of hospitalisations					0.2908
none	2,453	835	34.0	[32.2, 35.9]	
1 hosp	558	172	30.8	[27.1, 34.8]	
2 hosp	196	74	37.8	[31.1, 44.4]	
>2 hosp	145	47	32.4	[24.8, 40.0]	
Previous inpatient bed days					0.5352
none	2,453	835	34.0	[32.2, 35.9]	
1-5 days	613	208	33.9	[30.2, 37.7]	
6-15 days	180	53	29.4	[22.8, 36.1]	
>15 days	106	32	30.2	[21.7, 38.7]	
Neoadjuvant chemo					<.0001
no	1,491	316	21.2	[19.1, 23.3]	
yes	1,861	812	43.6	[41.4, 45.9]	
Region					<.0001
Brussels-Capital region	185	45	24.3	[18.4, 30.8]	
Flemish Region	2,278	883	38.8	[36.8, 40.8]	
Walloon Region	889	200	22.5	[19.8, 25.3]	
Surg_prest_year					0.0498
2008	345	123	35.7	[30.7, 40.9]	
2009	314	106	33.8	[28.7, 39.2]	
2010	359	117	32.6	[27.9, 37.6]	
2011	376	140	37.2	[32.4, 42.0]	
2012	399	157	39.3	[34.6, 44.1]	
2013	371	116	31.3	[26.7, 36.1]	
2014	412	136	33.0	[28.4, 37.6]	
2015	406	129	31.8	[27.3, 36.5]	
2016	370	104	28.1	[23.5, 32.7]	
Surgical volume					0.5262
low	913	317	34.7	[31.7, 37.8]	
medium	1,204	391	32.5	[29.8, 35.1]	
high	1,235	420	34.0	[31.4, 36.7]	

Figure 1. Oesophageal and GEJ cancer, Fraction of patients with start treatment within 28 days since confirmed diagnosis by surgical centre.



Characteristic	N	Start treatment within 28 days			
		N of treatments	%	95% CI	p-value
Overall	3,352	1,128	33.7	[32.1, 35.3]	.
Neoadjuvant chemo	.	.	.		<.0001
no	1,491	316	21.2	[19.1, 23.3]	.
yes	1,861	812	43.6	[41.4, 45.9]	.
NeoAdjuvant RT	.	.	.		<.0001
no	2,048	617	30.1	[28.1, 32.1]	.
yes	1,304	511	39.2	[36.6, 41.9]	.
Neo-adjuvant therapy (RT and/or chemo)	.	.	.		<.0001
no	1,484	312	21.0	[19.0, 23.1]	.
yes	1,868	816	43.7	[41.4, 45.9]	.
Region	.	.	.		<.0001
Brussels-Capital region	185	45	24.3	[18.4, 30.8]	.
Flemish Region	2,278	883	38.8	[36.8, 40.8]	.
Walloon Region	889	200	22.5	[19.8, 25.3]	.

3. Oesophageal and GEJ cancer, 30-day postop mortality: 2008-2016

3.1. Oesophageal and GEJ cancer, unadjusted 30-day postop mortality

Table 3. Oesophageal and GEJ cancer, unadjusted 30-day postop mortality

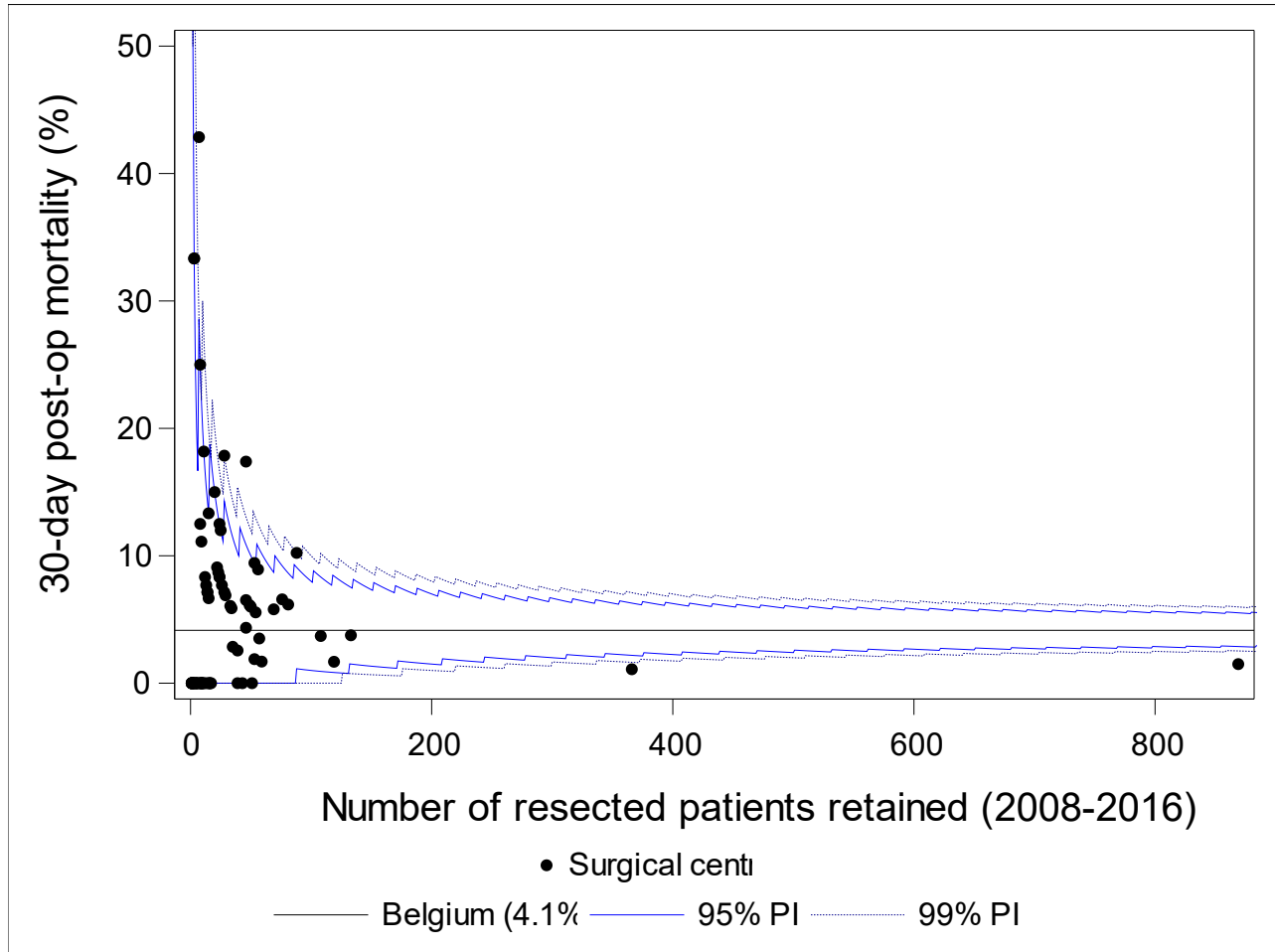
Characteristic	N	N of deaths	30-day postop mortality		
			%	95% CI	p-value
Overall	3,351	139	4.1	[3.5, 4.8]	
Gender					0.8619
male	2,632	110	4.2	[3.4, 5.0]	
females	719	29	4.0	[2.6, 5.6]	
Age					<.0001
<=49	248	2	0.8	[0.0, 2.0]	
50-59	879	26	3.0	[1.9, 4.1]	
60-69	1,251	44	3.5	[2.6, 4.6]	
70+	973	67	6.9	[5.3, 8.5]	
Combined stage					0.3778
0/is	152	4	2.6	[0.7, 5.3]	
I	925	33	3.6	[2.4, 4.8]	
II	866	30	3.5	[2.3, 4.7]	
III	1,107	58	5.2	[4.0, 6.6]	
IV	246	11	4.5	[2.0, 7.3]	
NA	23	1	4.3	[0.0, 13.0]	
X	32	2	6.3	[0.0, 15.6]	
Topography					0.0517
C150	20	3	15.0	[0.0, 30.0]	
C151	16	1	6.3	[0.0, 18.8]	
C152	19	0	0.0	–	
C153	76	3	3.9	[0.0, 9.2]	
C154	343	15	4.4	[2.3, 6.7]	
C155	1,089	35	3.2	[2.2, 4.3]	
C158	1	0	0.0	–	
C159	490	31	6.3	[4.3, 8.6]	
C160	1,297	51	3.9	[2.9, 5.0]	
WHO - Performance Status					<.0001
0 – Asymptomatic	590	13	2.2	[1.2, 3.4]	
1 – Symptomatic but completely ambulatory	2,168	88	4.1	[3.2, 4.9]	
2 – Symptomatic, <50% in bed during the day	73	9	12.3	[5.5, 20.5]	
3 – Symptomatic, >50% in bed, but not bedbound	4	2	50.0	[0.0, 100.0]	
4 – Bedbound	7	0	0.0	–	

Characteristic	N	N of deaths	30-day postop mortality		
			%	95% CI	p-value
Missing	509	27	5.3	[3.5, 7.3]	
<i>Diabetic</i>					0.3523
no	2,886	116	4.0	[3.3, 4.7]	
yes	465	23	4.9	[3.0, 7.1]	
<i>Cardiovascular disease</i>					0.0010
no	1,664	50	3.0	[2.2, 3.8]	
yes	1,687	89	5.3	[4.2, 6.3]	
<i>Respiratory disease</i>					0.1999
no	3,147	127	4.0	[3.4, 4.7]	
yes	204	12	5.9	[2.9, 9.3]	
<i>Previous number of hospitalisations</i>					0.2862
none	2,453	103	4.2	[3.4, 5.0]	
1 hosp	558	20	3.6	[2.2, 5.2]	
2 hosp	195	6	3.1	[1.0, 5.6]	
>2 hosp	145	10	6.9	[2.8, 11.0]	
<i>Previous inpatient bed days</i>					0.3699
none	2,453	103	4.2	[3.4, 5.0]	
1-5 days	612	20	3.3	[2.0, 4.7]	
6-15 days	180	9	5.0	[2.2, 8.3]	
>15 days	106	7	6.6	[1.9, 11.3]	
<i>Neoadjuvant chemo</i>					0.0335
no	1,490	74	5.0	[3.9, 6.1]	
yes	1,861	65	3.5	[2.7, 4.4]	
<i>Region</i>					0.1016
Brussels-Capital region	185	10	5.4	[2.2, 8.6]	
Flemish Region	2,278	83	3.6	[2.9, 4.4]	
Walloon Region	888	46	5.2	[3.8, 6.6]	
<i>Surg_prest_year</i>					0.0798
2008	345	13	3.8	[2.0, 5.8]	
2009	314	18	5.7	[3.2, 8.3]	
2010	359	11	3.1	[1.4, 5.0]	
2011	376	16	4.3	[2.4, 6.4]	
2012	399	9	2.3	[1.0, 3.8]	
2013	370	10	2.7	[1.1, 4.6]	
2014	412	17	4.1	[2.4, 6.1]	
2015	406	23	5.7	[3.4, 8.1]	
2016	370	22	5.9	[3.8, 8.4]	
<i>Surgical volume</i>					<.0001
low	913	62	6.8	[5.3, 8.4]	
medium	1,203	60	5.0	[3.8, 6.2]	

Characteristic	N	N of deaths	30-day postop mortality		
			%	95% CI	p-value
high	1,235	17	1.4	[0.7, 2.0]	

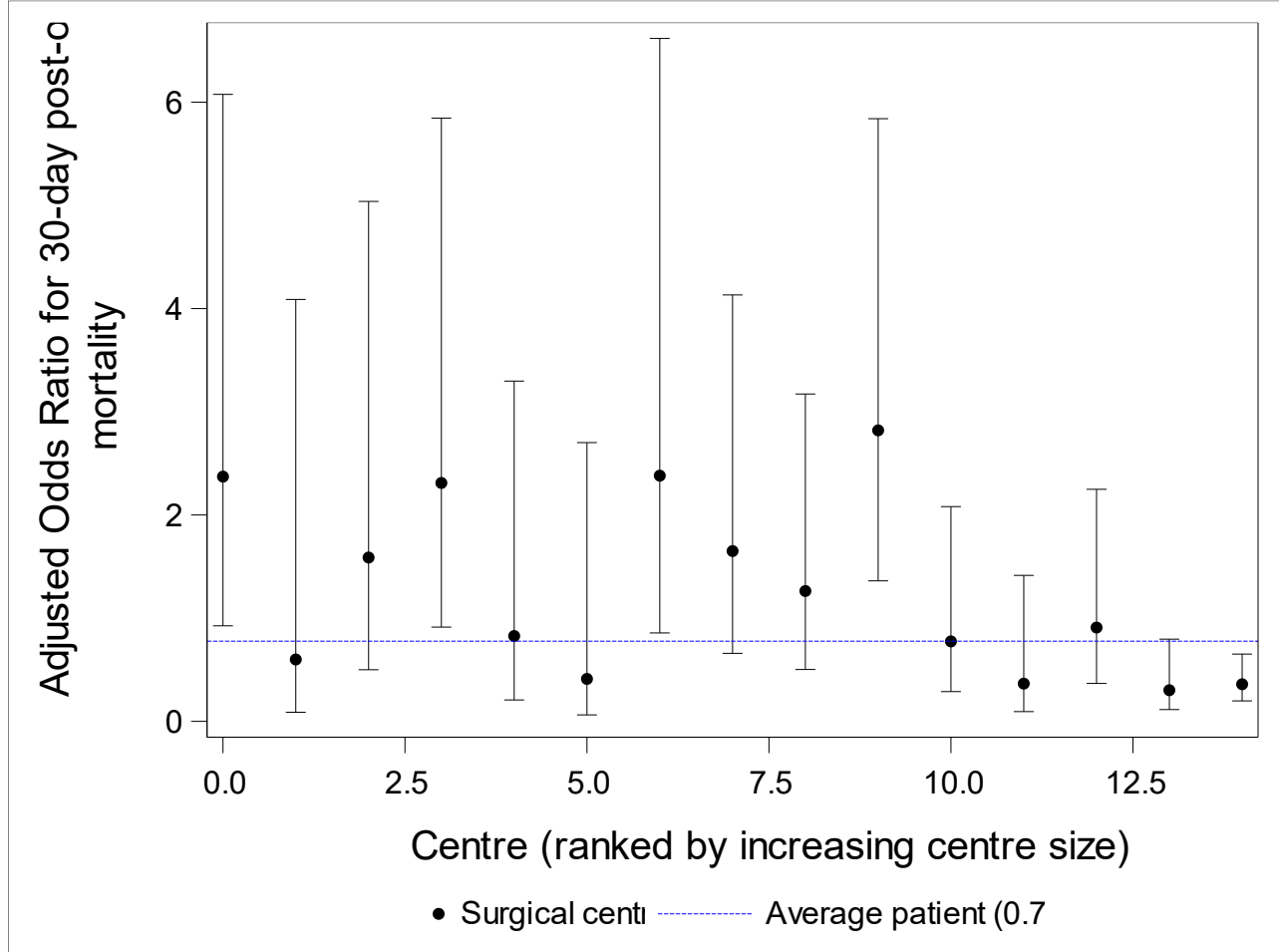
1 patient was censored within 30 days since surgery and was therefore omitted for the 30-day postop mortality analysis

Figure 2. Oesophageal and GEJ cancer, unadjusted 30-day postop mortality by surgical centre.



3.2. Oesophageal and GEJ cancer, 30-day postop mortality adjusted for patient case mix

Figure 3. Oesophageal and GEJ cancer, Odds Ratio for 30-day postop mortality by surgical centre, adjusted for patient case mix.



Centres with at least 52 retained patients are shown on the forest plot.

Expected: adjustment for the years / period 2008-2016

4. Oesophageal and GEJ cancer, 90-day postop mortality

4.1. Oesophageal and GEJ cancer, unadjusted 90-day postop mortality

Table 4. Oesophageal and GEJ cancer, unadjusted 90-day postop mortality

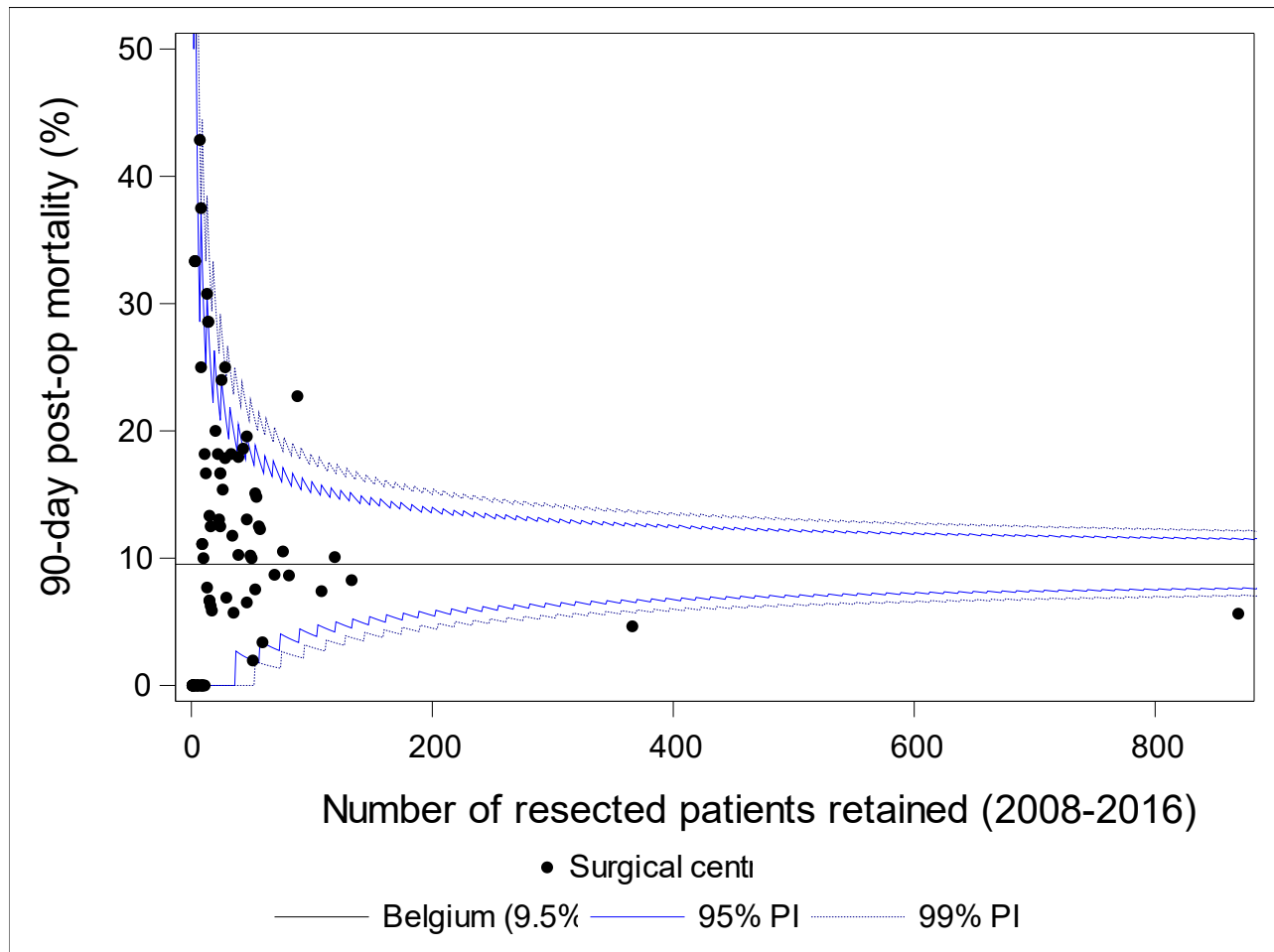
Characteristic	N	N of deaths	90-day postop mortality		
			%	95% CI	p-value
Overall	3,351	319	9.5	[8.5, 10.5]	
Gender					0.7142
male	2,632	248	9.4	[8.3, 10.6]	
females	719	71	9.9	[7.8, 12.1]	
Age					<.0001
<=49	248	8	3.2	[1.2, 5.6]	
50-59	879	57	6.5	[4.9, 8.2]	
60-69	1,251	105	8.4	[6.9, 10.0]	
70+	973	149	15.3	[13.1, 17.6]	
Combined stage					<.0001
0/is	152	10	6.6	[2.6, 10.5]	
I	925	60	6.5	[5.0, 8.1]	
II	866	78	9.0	[7.2, 11.0]	
III	1,107	119	10.7	[8.9, 12.6]	
IV	246	46	18.7	[13.8, 23.6]	
NA	23	1	4.3	[0.0, 13.0]	
X	32	5	15.6	[3.1, 28.1]	
Topography					0.1799
C150	20	3	15.0	[0.0, 30.0]	
C151	16	3	18.8	[0.0, 37.5]	
C152	19	3	15.8	[0.0, 31.6]	
C153	76	7	9.2	[3.9, 15.8]	
C154	343	44	12.8	[9.3, 16.3]	
C155	1,089	96	8.8	[7.2, 10.6]	
C158	1	0	0.0	–	
C159	490	54	11.0	[8.4, 13.9]	
C160	1,297	109	8.4	[6.9, 9.9]	
WHO - Performance Status					0.0001
0 – Asymptomatic	590	38	6.4	[4.6, 8.5]	
1 – Symptomatic but completely ambulatory	2,168	209	9.6	[8.4, 10.9]	
2 – Symptomatic, <50% in bed during the day	73	15	20.5	[12.3, 30.1]	
3 – Symptomatic, >50% in bed, but not bedbound	4	2	50.0	[0.0, 100.0]	
4 – Bedbound	7	1	14.3	[0.0, 42.9]	

Characteristic	N	N of deaths	90-day postop mortality		p-value
			%	95% CI	
Missing	509	54	10.6	[8.1, 13.4]	
<i>Diabetic</i>					0.0044
no	2,886	258	8.9	[7.9, 10.0]	
yes	465	61	13.1	[10.1, 16.3]	
<i>Cardiovascular disease</i>					<.0001
no	1,664	110	6.6	[5.5, 7.8]	
yes	1,687	209	12.4	[10.8, 14.0]	
<i>Respiratory disease</i>					0.1695
no	3,147	294	9.3	[8.3, 10.4]	
yes	204	25	12.3	[7.8, 17.2]	
<i>Previous number of hospitalisations</i>					0.1909
none	2,453	232	9.5	[8.3, 10.6]	
1 hosp	558	50	9.0	[6.6, 11.5]	
2 hosp	195	16	8.2	[4.6, 12.3]	
>2 hosp	145	21	14.5	[9.0, 20.7]	
<i>Previous inpatient bed days</i>					0.1236
none	2,453	232	9.5	[8.3, 10.6]	
1-5 days	612	53	8.7	[6.5, 10.9]	
6-15 days	180	17	9.4	[5.6, 13.9]	
>15 days	106	17	16.0	[9.4, 23.6]	
<i>Neoadjuvant chemo</i>					0.8908
no	1,490	143	9.6	[8.1, 11.1]	
yes	1,861	176	9.5	[8.2, 10.8]	
<i>Region</i>					0.0419
Brussels-Capital region	185	22	11.9	[7.6, 16.8]	
Flemish Region	2,278	197	8.6	[7.5, 9.8]	
Walloon Region	888	100	11.3	[9.2, 13.4]	
<i>Surg_prest_year</i>					0.4780
2008	345	30	8.7	[5.8, 11.9]	
2009	314	37	11.8	[8.3, 15.6]	
2010	359	27	7.5	[5.0, 10.3]	
2011	376	35	9.3	[6.4, 12.2]	
2012	399	36	9.0	[6.3, 12.0]	
2013	370	28	7.6	[4.9, 10.3]	
2014	412	42	10.2	[7.3, 13.1]	
2015	406	42	10.3	[7.4, 13.3]	
2016	370	42	11.4	[8.1, 14.6]	
<i>Surgical volume</i>					<.0001
low	913	128	14.0	[11.8, 16.3]	
medium	1,203	125	10.4	[8.7, 12.1]	

Characteristic	N	N of deaths	90-day postop mortality		
			%	95% CI	p-value
high	1,235	66	5.3	[4.1, 6.6]	

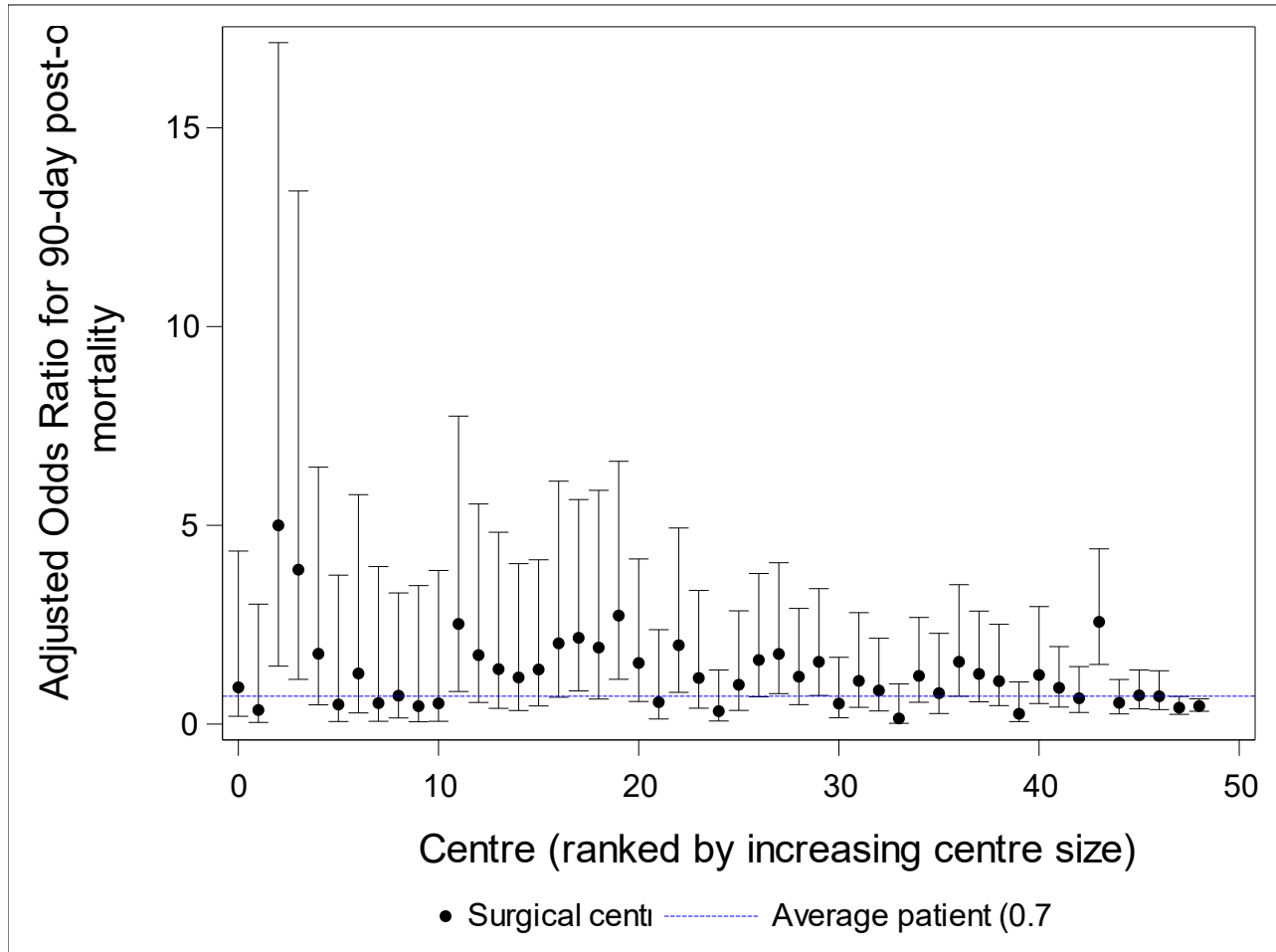
1 patient was censored within 30 days since surgery and was therefore omitted for the 90-day postop mortality analysis

Figure 4. Oesophageal and GEJ cancer, unadjusted 90-day postop mortality by surgical centre.



4.2. Oesophageal and GEJ cancer, 90-day postop mortality adjusted for patient case mix

Figure 5. Oesophageal and GEJ cancer, Odds Ratio for 90-day postop mortality by surgical centre, adjusted for patient case mix.



Centres with at least 12 retained patients are shown on the forest plot.

Expected: adjustment for the years / period 2008-2016

5. Oesophageal and GEJ cancer, Observed survival or all-cause survival

5.1. Oesophageal and GEJ cancer, unadjusted observed survival

Table 5. Oesophageal and GEJ cancer, number of events, total person years and rate for OS.

Surgical volume	N deaths	Person Years	Rate
All patients	1964	10717.128	0.1833
low	571	2742.4011	0.2082
medium	703	3926.3628	0.1790
high	690	4048.3641	0.1704

Table 6. Oesophageal and GEJ cancer, unadjusted observed survival proportions.

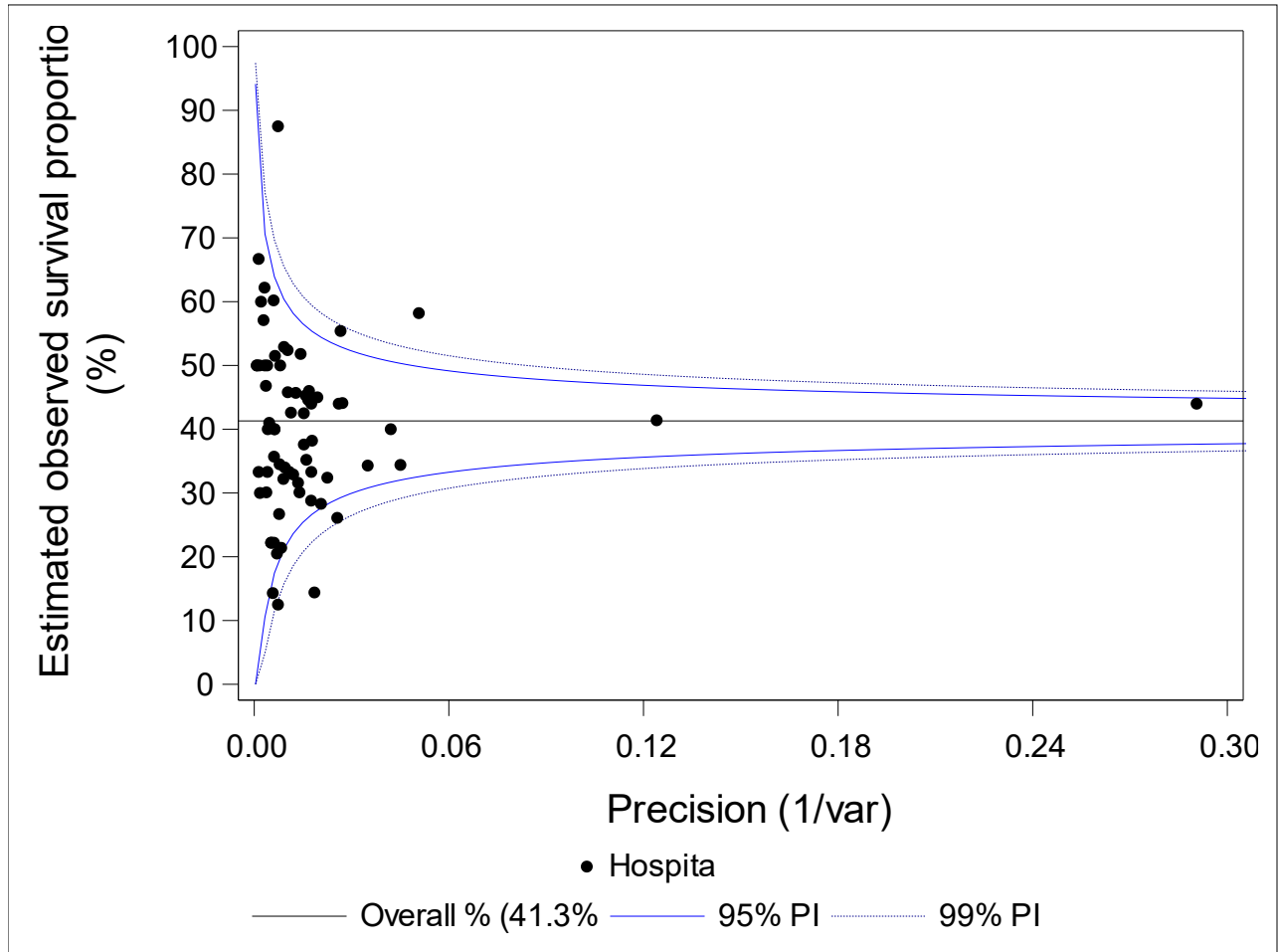
Characteristic	Initial number at risk	Unadjusted observed survival since surgery, %						p-value
		1 year		3 year		5 year		
		estimate	95% CI	estimate	95% CI	estimate	95% CI	
Overall	3348	75.0	[73.5, 76.4]	50.3	[48.6, 52.0]	41.3	[39.5, 43.1]	
Gender								0.0002
male	2630	74.5	[72.8, 76.1]	49.0	[47.0, 50.9]	39.6	[37.6, 41.6]	
females	718	76.7	[73.5, 79.7]	55.3	[51.5, 58.9]	47.6	[43.7, 51.5]	
Age								<.0001
<=49	248	86.7	[81.8, 90.3]	61.6	[55.1, 67.4]	52.4	[45.7, 58.7]	
50-59	876	80.3	[77.5, 82.7]	55.8	[52.4, 59.1]	45.6	[42.0, 49.1]	
60-69	1251	75.7	[73.2, 78.0]	52.1	[49.2, 54.9]	42.9	[39.9, 45.9]	
70+	973	66.3	[63.2, 69.2]	40.1	[37.0, 43.3]	32.6	[29.4, 35.8]	
Combined stage								<.0001
0/is	152	86.8	[80.4, 91.3]	69.5	[61.1, 76.4]	59.7	[49.9, 68.2]	
I	924	87.4	[85.1, 89.4]	74.4	[71.3, 77.1]	65.9	[62.4, 69.1]	
II	865	77.0	[74.0, 79.7]	50.1	[46.7, 53.5]	41.8	[38.3, 45.3]	
III	1106	65.7	[62.9, 68.4]	33.3	[30.5, 36.2]	23.4	[20.7, 26.2]	
IV	246	53.3	[46.8, 59.3]	23.2	[18.1, 28.8]	16.8	[12.2, 22.0]	
NA	23	87.0	[64.8, 95.6]	60.6	[37.8, 77.2]	44.8	[23.1, 64.4]	
X	32	81.3	[62.9, 91.1]	65.6	[46.6, 79.3]	51.2	[32.3, 67.2]	
WHO - Performance Status								<.0001
0 – Asymptomatic	590	80.7	[77.3, 83.6]	58.1	[53.9, 62.1]	48.9	[44.4, 53.2]	
1 – Symptomatic but completely ambulatory	2166	73.9	[72.0, 75.7]	47.4	[45.3, 49.6]	38.3	[36.1, 40.6]	

Unadjusted observed survival since surgery, %								
Characteristic	Initial number at risk	1 year		3 year		5 year		p-value
		estimate	95% CI	estimate	95% CI	estimate	95% CI	
2 – Symptomatic, <50% in bed during the day	73	53.4	[41.4, 64.1]	30.6	[20.3, 41.4]	25.1	[15.4, 36.0]	
3 – Symptomatic, >50% in bed, but not bedbound	4	0.0		0.0		0.0		
4 – Bedbound	7	71.4	[25.8, 92.0]					
Missing	508	76.8	[72.8, 80.2]	56.9	[52.4, 61.1]	47.9	[43.2, 52.3]	
Topography								0.0354
C150	20	75.0	[50.0, 88.7]	59.2	[34.7, 77.2]	46.1	[22.5, 66.9]	
C151	16	62.5	[34.9, 81.1]	43.8	[19.8, 65.6]	35.0	[12.7, 58.6]	
C152	19	63.2	[37.9, 80.4]	52.6	[28.7, 71.9]	40.9	[19.1, 61.8]	
C153	76	67.1	[55.3, 76.4]	40.4	[29.1, 51.4]	32.0	[21.3, 43.2]	
C154	342	74.0	[69.0, 78.3]	51.2	[45.7, 56.4]	42.4	[36.8, 47.9]	
C155	1088	77.4	[74.8, 79.8]	51.9	[48.8, 54.9]	43.3	[40.1, 46.5]	
C158	1	100.0		100.0		100.0		
C159	489	75.4	[71.4, 79.0]	53.6	[49.0, 58.0]	45.2	[40.5, 49.7]	
C160	1297	73.8	[71.3, 76.1]	47.9	[45.1, 50.7]	38.4	[35.5, 41.3]	
Diabetic								0.2571
no	2883	75.5	[73.9, 77.0]	50.8	[48.9, 52.6]	41.5	[39.5, 43.4]	
yes	465	71.8	[67.5, 75.7]	47.3	[42.6, 51.9]	40.3	[35.4, 45.1]	
Cardiovascular disease								<.0001
no	1661	78.3	[76.3, 80.2]	54.1	[51.6, 56.5]	44.2	[41.7, 46.8]	
yes	1687	71.7	[69.5, 73.8]	46.5	[44.0, 48.9]	38.4	[35.9, 40.9]	
Respiratory disease								0.0162
no	3144	75.4	[73.8, 76.8]	50.9	[49.0, 52.6]	41.6	[39.7, 43.4]	
yes	204	68.6	[61.8, 74.5]	42.0	[35.0, 48.8]	37.7	[30.8, 44.5]	
Previous number of hospitalisations								0.3451
none	2451	75.6	[73.9, 77.3]	51.0	[48.9, 53.0]	41.5	[39.4, 43.6]	
1 hosp	557	75.8	[72.0, 79.1]	50.2	[45.9, 54.4]	42.3	[37.9, 46.7]	
2 hosp	195	69.7	[62.7, 75.6]	47.6	[40.3, 54.5]	41.1	[33.7, 48.3]	
>2 hosp	145	68.3	[60.0, 75.2]	43.1	[34.8, 51.1]	35.3	[27.1, 43.6]	
Previous inpatient bed days								0.0626
none	2451	75.6	[73.9, 77.3]	51.0	[48.9, 53.0]	41.5	[39.4, 43.6]	
1-5 days	611	74.3	[70.6, 77.6]	49.9	[45.8, 53.9]	41.7	[37.5, 45.9]	
6-15 days	180	73.9	[66.8, 79.7]	50.3	[42.7, 57.5]	44.0	[36.2, 51.6]	
>15 days	106	66.0	[56.2, 74.2]	37.1	[27.7, 46.4]	30.7	[21.7, 40.2]	
Neoadjuvant chemo								<.0001
no	1489	77.2	[75.0, 79.3]	54.0	[51.4, 56.5]	45.8	[43.1, 48.5]	
yes	1859	73.2	[71.1, 75.1]	47.3	[45.0, 49.7]	37.5	[35.0, 39.9]	

Unadjusted observed survival since surgery, %								
Characteristic	Initial number at risk	1 year		3 year		5 year		p-value
		estimate	95% CI	estimate	95% CI	estimate	95% CI	
Region								0.3692
Brussels-Capital region	185	74.0	[67.0, 79.7]	50.0	[42.5, 57.1]	44.0	[36.3, 51.4]	
Flemish Region	2278	75.0	[73.2, 76.7]	49.5	[47.4, 51.6]	40.2	[38.0, 42.4]	
Walloon Region	885	75.0	[72.0, 77.7]	52.3	[48.9, 55.6]	43.5	[40.0, 47.0]	
Surg_prest_year								0.4847
2008	344	74.4	[69.5, 78.7]	49.1	[43.7, 54.3]	40.1	[34.9, 45.2]	
2009	313	70.3	[64.9, 75.0]	45.7	[40.1, 51.1]	39.2	[33.8, 44.6]	
2010	359	76.0	[71.3, 80.1]	49.6	[44.3, 54.6]	40.7	[35.6, 45.7]	
2011	375	76.3	[71.6, 80.3]	50.7	[45.5, 55.6]	41.1	[36.1, 46.0]	
2012	399	77.4	[73.0, 81.2]	55.1	[50.1, 59.9]	46.4	[41.4, 51.2]	
2013	370	75.7	[71.0, 79.7]	48.1	[42.9, 53.1]	36.9	[31.9, 41.9]	
2014	412	74.5	[70.0, 78.4]	49.5	[44.6, 54.2]			
2015	406	74.1	[69.6, 78.1]	53.4	[48.3, 58.2]			
2016	370	75.1	[70.4, 79.2]					
Surgical volume								0.0011
low	910	70.7	[67.6, 73.5]	45.7	[42.4, 48.9]	38.5	[35.2, 41.8]	
medium	1203	74.6	[72.0, 76.9]	50.9	[48.0, 53.8]	41.4	[38.4, 44.4]	
high	1235	78.5	[76.1, 80.7]	53.2	[50.3, 56.0]	43.3	[40.2, 46.3]	
4 patients were censored or died at the day of surgery and were therefore omitted for the Observed Survival analysis								

5.2. Oesophageal and GEJ cancer, unadjusted 5 year observed survival by surgical centre

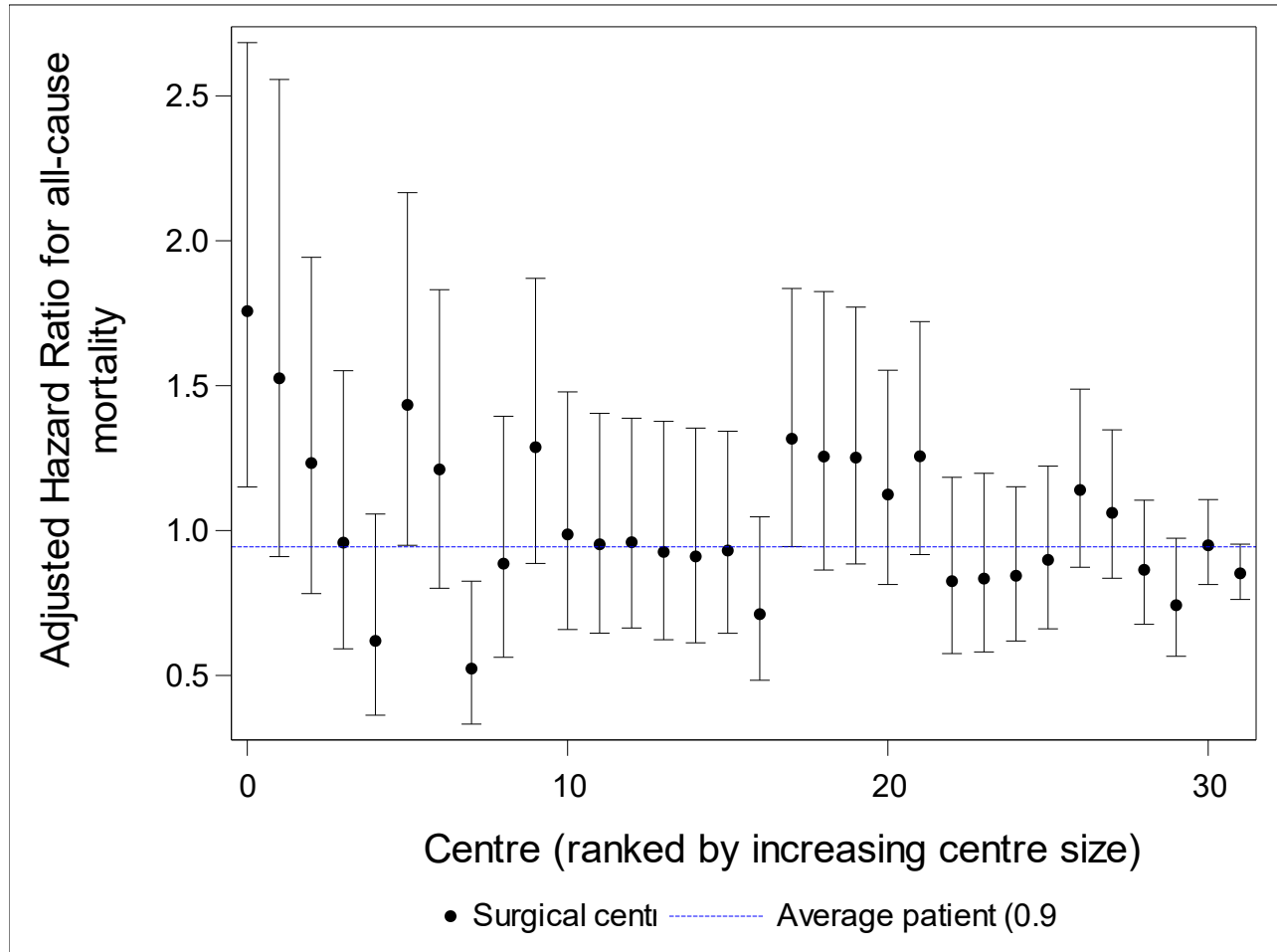
Figure 6. Oesophageal and GEJ cancer, unadjusted 5 year observed survival by surgical centre.



10 centres are not shown on the funnel plot as their OS at 5 year is 0 or 100% and their precision does not exist.

5.3. Oesophageal and GEJ cancer, observed survival adjusted for patient case mix

Figure 7. Oesophageal and GEJ cancer, Hazard Ratio for all-cause mortality, adjusted for patient case mix.



Centres with at least 25 retained patients are shown on the forest plot.

Expected: adjustment for the years / period 2008-2016

6.Oesophageal and GEJ cancer, Unadjusted relative survival

Table 7. Oesophageal and GEJ cancer, unadjusted relative survival proportions.

varblname	Frequency Count	Unadjusted relative survival, %					
		1 year		3 year		5 year	
		estimate	95% CI	estimate	95% CI	estimate	95% CI
Overall	3348	76.4	[74.9, 77.9]	53.1	[51.3, 55.0]	45.6	[43.6, 47.6]
Gender							
male	2630	76.1	[74.3, 77.7]	51.9	[49.8, 54.0]	43.9	[41.7, 46.2]
females	718	77.8	[74.5, 80.8]	57.5	[53.6, 61.3]	51.4	[47.1, 55.6]
Age							
<=49	248	86.9	[82.0, 90.6]	61.9	[55.4, 67.8]	53.1	[46.3, 59.5]
50-59	876	80.8	[78.0, 83.3]	56.8	[53.3, 60.1]	47.1	[43.4, 50.8]
60-69	1251	76.8	[74.3, 79.1]	54.3	[51.3, 57.2]	46.4	[43.2, 49.7]
70+	973	69.2	[66.0, 72.2]	45.8	[42.2, 49.4]	41.3	[37.2, 45.3]
Combined stage							
0/is	152	88.2	[81.6, 92.7]	72.3	[63.4, 79.6]	63.1	[51.9, 72.8]
I	924	89.1	[86.7, 91.1]	78.8	[75.5, 81.7]	73.2	[69.4, 76.8]
II	865	78.4	[75.4, 81.1]	52.9	[49.3, 56.5]	46.0	[42.1, 49.8]
III	1106	67.2	[64.2, 70.0]	35.3	[32.3, 38.4]	25.9	[22.9, 29.0]
IV	246	54.3	[47.7, 60.4]	24.3	[18.9, 30.2]	18.0	[13.0, 23.6]
NA	23	88.5	[66.0, 97.3]	64.3	[40.3, 81.8]	49.8	[25.7, 71.5]
X	32	82.4	[63.9, 92.4]	68.1	[48.1, 82.4]	54.8	[34.5, 72.1]
WHO - Performance Status							
0 – Asymptomatic	590	82.1	[78.6, 85.1]	61.1	[56.6, 65.3]	53.6	[48.7, 58.4]
1 – Symptomatic but completely ambulatory	2166	75.3	[73.4, 77.1]	50.1	[47.8, 52.4]	42.3	[39.8, 44.7]
2 – Symptomatic, <50% in bed during the day	73	54.8	[42.5, 65.8]	32.4	[21.5, 44.1]	27.3	[16.7, 39.3]
3 – Symptomatic, >50% in bed, but not bedbound	4	0.0					
4 – Bedbound	7	72.5	[26.2, 93.4]				
Missing	508	78.4	[74.4, 82.0]	60.5	[55.7, 65.0]	53.3	[48.1, 58.3]
Topography							
C150	20	76.1	[50.7, 90.0]	62.5	[36.8, 81.2]	49.0	[22.6, 72.7]
C151	16	64.0	[35.7, 83.0]	46.1	[20.3, 70.0]	37.5	[12.6, 64.8]
C152	19	64.6	[38.8, 82.3]	55.8	[30.4, 76.1]	43.9	[20.0, 67.0]
C153	76	68.1	[56.2, 77.6]	41.9	[30.0, 53.4]	33.9	[22.5, 46.0]
C154	342	75.0	[69.9, 79.4]	53.3	[47.5, 58.8]	45.6	[39.5, 51.6]
C155	1088	78.9	[76.2, 81.3]	54.7	[51.4, 57.9]	47.6	[44.1, 51.1]
C158	1	100.2		100.7		101.4	

		Unadjusted relative survival, %					
		1 year		3 year		5 year	
varblname	Frequency Count	estimate	95% CI	estimate	95% CI	estimate	95% CI
C159	489	76.8	[72.6, 80.4]	56.5	[51.6, 61.1]	49.5	[44.4, 54.5]
C160	1297	75.5	[72.9, 77.8]	51.0	[48.0, 54.0]	43.0	[39.7, 46.2]
Diabetic							
no	2883	76.9	[75.3, 78.5]	53.6	[51.6, 55.5]	45.6	[43.5, 47.8]
yes	465	73.5	[69.1, 77.4]	50.4	[45.3, 55.4]	45.3	[39.8, 50.7]
Cardiovascular disease							
no	1661	79.4	[77.4, 81.4]	56.3	[53.7, 58.8]	47.5	[44.8, 50.3]
yes	1687	73.4	[71.2, 75.6]	49.9	[47.3, 52.5]	43.6	[40.8, 46.5]
Respiratory disease							
no	3144	76.9	[75.3, 78.4]	53.7	[51.8, 55.6]	45.8	[43.7, 47.9]
yes	204	70.0	[63.0, 76.0]	44.5	[37.1, 51.7]	42.0	[34.3, 49.6]
Previous number of hospitalisations							
none	2451	77.0	[75.2, 78.7]	53.7	[51.5, 55.8]	45.5	[43.2, 47.8]
1 hosp	557	77.4	[73.5, 80.8]	53.3	[48.7, 57.7]	47.1	[42.1, 52.0]
2 hosp	195	71.5	[64.3, 77.6]	51.5	[43.6, 59.1]	47.2	[38.7, 55.5]
>2 hosp	145	69.8	[61.4, 76.9]	45.8	[37.0, 54.3]	39.2	[30.1, 48.5]
Previous inpatient bed days							
none	2451	77.0	[75.2, 78.7]	53.7	[51.5, 55.8]	45.5	[43.2, 47.8]
1-5 days	611	75.9	[72.1, 79.2]	53.1	[48.7, 57.4]	46.4	[41.6, 51.1]
6-15 days	180	75.8	[68.6, 81.8]	54.1	[45.8, 61.8]	50.4	[41.6, 59.0]
>15 days	106	67.6	[57.5, 76.0]	39.4	[29.4, 49.4]	34.4	[24.3, 45.0]
Neoadjuvant chemo							
no	1489	79.1	[76.8, 81.2]	57.8	[55.0, 60.5]	51.5	[48.4, 54.5]
yes	1859	74.3	[72.2, 76.3]	49.5	[47.0, 51.9]	40.7	[38.0, 43.3]
Region							
Brussels-Capital region	185	75.8	[68.6, 81.6]	53.5	[45.4, 61.1]	49.0	[40.4, 57.2]
Flemish Region	2278	76.4	[74.5, 78.2]	52.2	[49.9, 54.4]	44.2	[41.8, 46.6]
Walloon Region	885	76.7	[73.6, 79.4]	55.5	[51.9, 59.0]	48.4	[44.5, 52.3]
Surg_prest_year							
2008	344	75.9	[70.9, 80.3]	52.2	[46.5, 57.7]	44.6	[38.8, 50.3]
2009	313	71.6	[66.1, 76.4]	48.1	[42.2, 53.8]	42.8	[36.9, 48.7]
2010	359	77.5	[72.7, 81.7]	52.6	[47.0, 58.0]	45.1	[39.4, 50.6]
2011	375	77.9	[73.1, 81.9]	53.9	[48.4, 59.1]	45.6	[40.0, 51.0]
2012	399	78.8	[74.3, 82.7]	58.3	[53.0, 63.3]	51.1	[45.6, 56.3]
2013	370	77.2	[72.4, 81.3]	51.1	[45.6, 56.4]	40.3	[34.7, 45.9]
2014	412	75.9	[71.3, 79.9]	52.6	[47.3, 57.6]		
2015	406	75.7	[71.0, 79.7]	56.0	[50.4, 61.2]		
2016	370	76.5	[71.7, 80.7]				

		Unadjusted relative survival, %					
		1 year		3 year		5 year	
varblname	Frequency Count	estimate	95% CI	estimate	95% CI	estimate	95% CI
<i>Surgical volume</i>							
low	910	72.2	[69.1, 75.1]	48.5	[45.0, 52.0]	42.7	[39.0, 46.4]
medium	1203	76.0	[73.4, 78.5]	53.8	[50.7, 56.8]	45.7	[42.4, 49.0]
high	1235	79.9	[77.5, 82.2]	55.9	[52.9, 58.9]	47.4	[44.0, 50.7]
4 patients were censored or died at the day of surgery and were therefore omitted for the Observed Survival analysis							