

PRO CARE
PROJECT ON CANCER OF THE RECTUM

Belgian Cancer Registry



FEEDBACK 2013
Annex 3: Survival Outcomes

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Note on interpretation of results

Results and conclusions reported are limited to the PROCARE patient group registered.

Results and conclusions can not be generalised to the general population of Belgian rectal cancer patients.

1. All patients

1.1. Exploration baseline characteristics

Table 1. Frequency table of patient and tumour baseline characteristics

Characteristic	PROCARE (N=5,362)	
	Number	%
<i>Age group</i>		
<60 years	1,321	24.64
60-74 years	2,402	44.80
75+ years	1,639	30.57
<i>Gender</i>		
Males	3,327	62.05
Females	2,035	37.95
<i>Clinical stage</i>		
I	647	12.07
II	758	14.14
III	2,633	49.10
IV	712	13.28
X	612	11.41
<i>Pathological stage</i>		
0	392	7.31
I	1,170	21.82
II	1,120	20.89
III	1,225	22.85
IV	768	14.32
X	110	2.05
missing	577	10.76
<i>ASA score</i>		
missing	928	17.31
I	1,082	20.18
II	2,348	43.79
III+	1,004	18.72
<i>Radical resection</i>		
Yes, for (y)pStage 0-III	3,894	72.62
Yes, for (y)pStage IV	614	11.45
Yes, for (y)pStage X or missing	410	7.65
No, for (y)pStage 0-III	13	0.24

PROCARE (N=5,362)		
Characteristic	Number	%
No, for (y)pStage IV	154	2.87
No, for (y)pStage X or missing	277	5.17

1.2. Unadjusted observed survival

Table 2. Unadjusted observed survival stratified by baseline characteristics

Characteristic	Unadjusted Observed Survival at 5 year		
	Number at risk	PROCARE	
		OS (%)	95% CI
Overall	5,362	66.82	[65.33, 68.28]
Age group			
<60 years	1,321	78.37	[75.58, 80.88]
60-74 years	2,402	72.99	[70.85, 75.02]
75+ years	1,639	48.56	[45.67, 51.38]
Gender			
Males	3,327	66.07	[64.14, 67.94]
Females	2,035	68.03	[65.62, 70.32]
Clinical stage			
I	647	78.13	[74.15, 81.58]
II	758	68.30	[64.35, 71.92]
III	2,633	73.36	[71.29, 75.33]
IV	712	29.81	[25.91, 33.81]
X	612	67.53	[62.77, 71.84]
Pathological stage			
0	392	92.30	[88.61, 94.83]
I	1,170	85.60	[83.09, 87.78]
II	1,120	72.31	[69.13, 75.23]
III	1,225	61.23	[57.92, 64.37]
IV	768	30.17	[26.42, 34.01]
X	110	61.34	[45.18, 74.04]
missing	577	59.01	[53.30, 64.28]
Radical resection			
Yes, for (y)pStage 0-III	3,894	74.78	[73.15, 76.33]
Yes, for (y)pStage IV	614	34.69	[30.37, 39.06]
Yes, for (y)pStage X or missing	410	65.14	[58.20, 71.23]
No, for (y)pStage 0-III	13	NA (N<20)	
No, for (y)pStage IV	154	9.71	[4.42, 17.52]
No, for (y)pStage X or missing	277	50.97	[42.59, 58.74]

1.3. Adjusted 5-year observed survival

The graph below gives the estimated hazard ratio adjusted for case mix (clinical stage, gender, age and presence of radical resection or not) for centres with at least 20 patients eligible for the analysis.

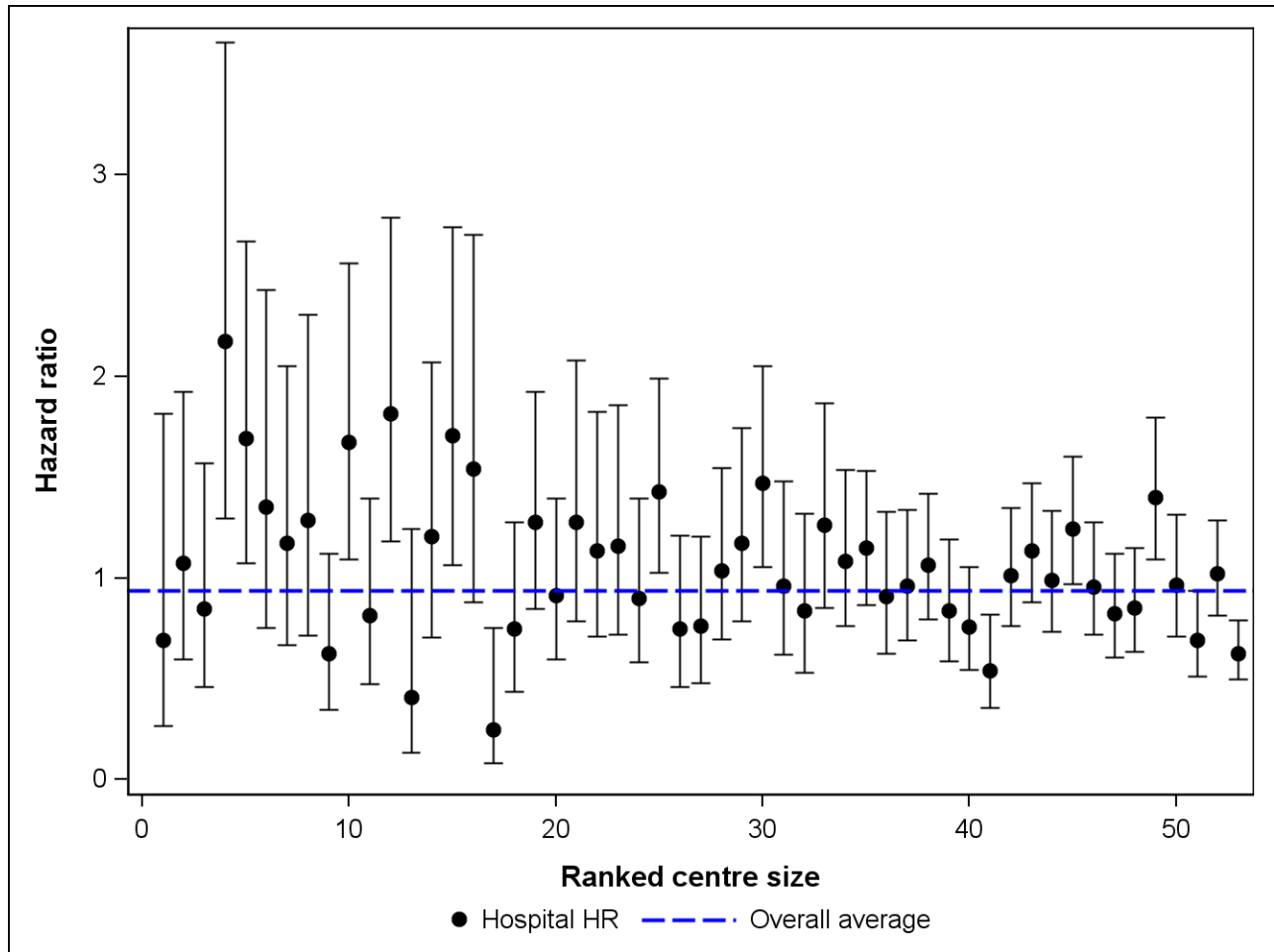


Figure 1. Forest plot of centre hazard ratios with 95% CI, adjusted for clinical stage, gender, age and radical resection applied or not.

1.4. Unadjusted relative survival

Table 3. Unadjusted relative survival stratified by baseline characteristics

Characteristic	Unadjusted Relative Survival at 5 year		
	Number at risk	PRO CARE RS (%)	95% CI
Overall	5,362	78.46	[76.71, 80.16]
Age group			
<60 years	1,321	80.54	[77.68, 83.12]
60-74 years	2,402	80.83	[78.47, 83.05]
75+ years	1,639	72.97	[68.69, 77.16]
Gender			
Males	3,327	78.77	[76.48, 80.98]
Females	2,035	77.98	[75.23, 80.59]
Clinical stage			
I	647	93.56	[88.86, 97.64]
II	758	82.97	[78.20, 87.34]
III	2,633	84.64	[82.26, 86.89]
IV	712	33.81	[29.39, 38.34]
X	612	82.64	[76.86, 87.86]
Pathological stage			
0	392	103.95	[99.91, 106.73]
I	1,170	99.65	[96.72, 102.18]
II	1,120	87.21	[83.39, 90.71]
III	1,225	71.49	[67.66, 75.12]
IV	768	34.22	[29.96, 38.59]
X	110	76.77	[59.52, 90.31]
missing	577	72.46	[65.61, 78.78]
Radical resection			
Yes, for (y)pStage 0-III	3,894	87.66	[85.77, 89.47]
Yes, for (y)pStage IV	614	39.39	[34.48, 44.35]
Yes, for (y)pStage X or missing	410	77.83	[69.82, 84.85]
No, for (y)pStage 0-III	13	NA (N<50)	
No, for (y)pStage IV	154	10.49	[4.68, 19.18]
No, for (y)pStage X or missing	277	66.04	[55.56, 75.76]

1.5. Adjusted relative survival

Adjustment of relative survival for age, cStage, gender and radical resection was not possible for the complete patient group. Adjustment was obtained for the patient group that underwent radical resection, see further.

2. Only patients with radical resection

2.1. Exploration baseline characteristics

Table 4. Frequency table of patient and tumour baseline characteristics, for patients with radical resection

Characteristic	PROCARE (N=4,918)	
	Number	%
<i>Age group</i>		
<60 years	1,239	25.19
60-74 years	2,227	45.28
75+ years	1,452	29.52
<i>Gender</i>		
Males	3,070	62.42
Females	1,848	37.58
<i>Clinical stage</i>		
I	588	11.96
II	730	14.84
III	2,538	51.61
IV	558	11.35
X	504	10.25
<i>Pathological stage</i>		
0	392	7.97
I	1,162	23.63
II	1,118	22.73
III	1,222	24.85
IV	614	12.48
X	83	1.69
missing	327	6.65
<i>ASA score</i>		
missing	486	9.88
I	1,081	21.98
II	2,347	47.72
III+	1,004	20.41
<i>Radical resection</i>		
Yes, for (y)pStage 0-III	3,894	79.18
Yes, for (y)pStage IV	614	12.48
Yes, for (y)pStage X or missing	410	8.34

2.2. Unadjusted observed survival

Table 5. Unadjusted observed survival stratified by baseline characteristics, for patients with radical resection

Unadjusted Observed Survival at 5 year			
Characteristic	Number at risk	PROCARE	
		OS (%)	95% CI
Overall	4,918	69.11	[67.58, 70.60]
Age group			
<60 years	1,239	79.66	[76.85, 82.17]
60-74 years	2,227	74.81	[72.62, 76.86]
75+ years	1,452	51.40	[48.33, 54.38]
Gender			
Males	3,070	68.44	[66.46, 70.34]
Females	1,848	70.20	[67.72, 72.54]
Clinical stage			
I	588	78.45	[74.31, 82.01]
II	730	69.28	[65.31, 72.90]
III	2,538	74.60	[72.51, 76.57]
IV	558	34.70	[30.15, 39.30]
X	504	68.43	[63.21, 73.07]
Pathological stage			
0	392	92.30	[88.61, 94.83]
I	1,162	85.58	[83.06, 87.77]
II	1,118	72.24	[69.05, 75.17]
III	1,222	61.17	[57.87, 64.32]
IV	614	34.69	[30.37, 39.06]
X	83	63.93	[45.82, 77.39]
missing	327	65.65	[58.06, 72.20]
Radical resection			
Yes, for (y)pStage 0-III	3,894	74.78	[73.15, 76.33]
Yes, for (y)pStage IV	614	34.69	[30.37, 39.06]
Yes, for (y)pStage X or missing	410	65.14	[58.20, 71.23]

2.3. Adjusted 5-year observed survival

The graph below gives the estimated hazard ratio adjusted for case mix (clinical stage, gender and age) for centres with at least 20 patients eligible for the analysis.

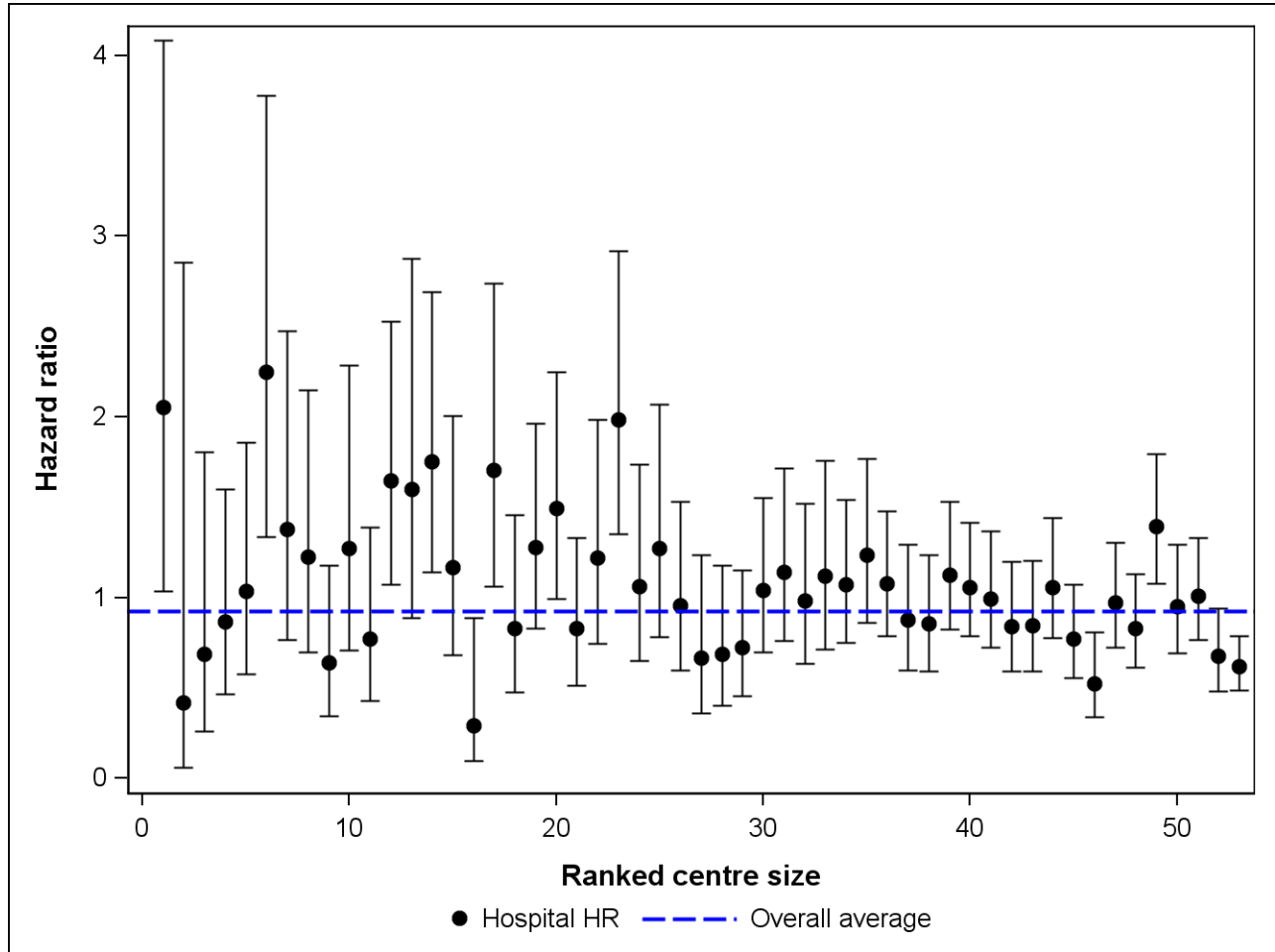


Figure 2. Forest plot of centre hazard ratios with 95% CI, for patients with radical resection, adjusted for clinical stage, gender and age.

2.4. Unadjusted relative survival

Table 6. Unadjusted relative survival stratified by baseline characteristics, for patients with radical resection

Unadjusted Relative Survival at 5 year			
PROCARE			
Characteristic	Number at risk	RS (%)	95% CI
Overall	4,918	80.88	[79.10, 82.61]
Age group			
<60 years	1,239	81.87	[78.99, 84.46]
60-74 years	2,227	82.88	[80.48, 85.13]
75+ years	1,452	76.80	[72.27, 81.20]
Gender			
Males	3,070	81.39	[79.05, 83.63]
Females	1,848	80.08	[77.26, 82.73]
Clinical stage			
I	588	93.60	[88.74, 97.79]
II	730	83.92	[79.14, 88.29]
III	2,538	85.84	[83.46, 88.09]
IV	558	39.40	[34.24, 44.60]
X	504	83.28	[77.00, 88.87]
Pathological stage			
0	392	103.95	[99.91, 106.73]
I	1,162	99.59	[96.65, 102.13]
II	1,118	87.11	[83.29, 90.62]
III	1,222	71.44	[67.61, 75.08]
IV	614	39.39	[34.48, 44.35]
X	83	75.04	[54.78, 89.97]
missing	327	78.82	[69.97, 86.45]
Radical resection			
Yes, for (y)pStage 0-III	3,894	87.66	[85.77, 89.47]
Yes, for (y)pStage IV	614	39.39	[34.48, 44.35]
Yes, for (y)pStage X or missing	410	77.83	[69.82, 84.85]

2.5. Adjusted 5-year relative survival

The graph below gives the estimated relative excess risks adjusted for case mix (clinical stage, gender and age) for centres with at least 50 patients eligible for the analysis.

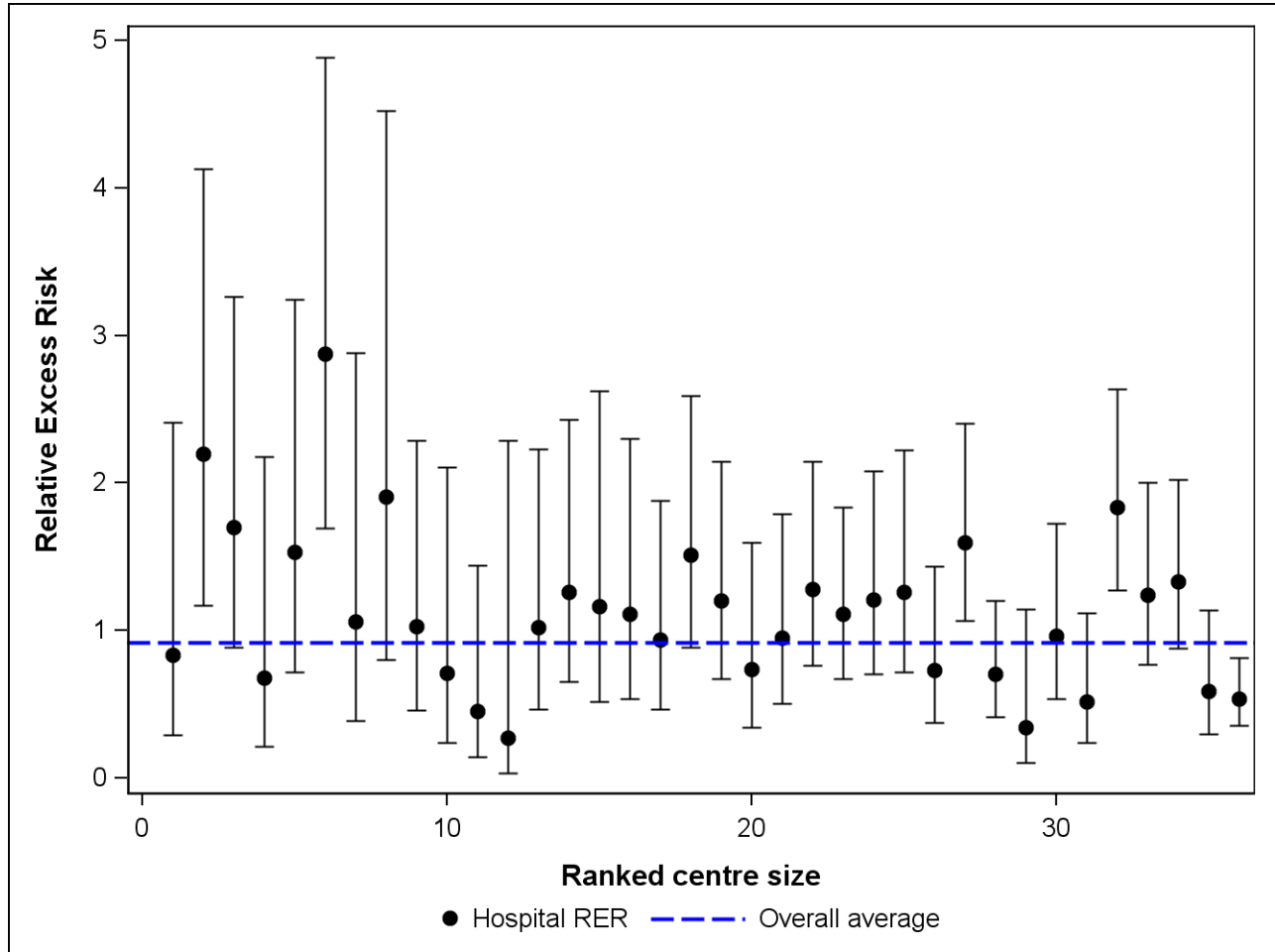


Figure 3. Forest plot of centre relative excess risk with 95% CI, for patients with radical resection, adjusted for clinical stage, gender and age.