

PRO CARE
PROJECT ON CANCER OF THE RECTUM

Belgian Cancer Registry



FEEDBACK 2014
Annex 2: Survival Outcomes

Version 1.2
30/01/2015

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Note on interpretation of results

Results and conclusions reported are limited to the PROCARE patient group registered by your team and relative to the overall PROCARE population.

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

Results and conclusions for your hospital can not be generalised to the complete population of rectal cancer patients in your hospital unless all your patients are registered within PROCARE.

1. All patients

1.1. Exploration baseline characteristics

Table 1. Frequency table of patient and tumour baseline characteristics

Characteristic	PROCARE (N=5,993)	
	Number	%
<i>Age group</i>		
<60 years	1,494	24.93
60-74 years	2,681	44.74
75+ years	1,818	30.34
<i>Gender</i>		
Males	3,713	61.96
Females	2,280	38.04
<i>Clinical stage</i>		
I	718	11.98
II	820	13.68
III	2,958	49.36
IV	813	13.57
missing/X	684	11.41
<i>Pathological stage</i>		
0	435	7.26
I	1,295	21.61
II	1,215	20.27
III	1,347	22.48
IV	879	14.67
missing/X	822	13.72
<i>ASA score</i>		
missing	1,084	18.09
I	1,199	20.01
II	2,604	43.45
III+	1,106	18.45
<i>Radical resection</i>		
Yes, for (y)pStage 0-III	4,272	71.28
Yes, for (y)pStage IV	694	11.58
Yes, for (y)pStage X or missing	509	8.49

PROCARE (N=5,993)		
Characteristic	Number	%
No, for (y)pStage 0-III	20	0.33
No, for (y)pStage IV	185	3.09
No, for (y)pStage X or missing	313	5.22

1.2. Unadjusted observed survival

Table 2. Unadjusted observed survival stratified by baseline characteristics

Unadjusted Observed Survival at 5 year			
Characteristic	Number at risk	PROCARE	
		OS (%)	95% CI
Overall	5,993	66.2	[64.8, 67.6]
Age group			
<60 years	1,494	77.7	[75.2, 80.1]
60-74 years	2,681	72.2	[70.2, 74.1]
75+ years	1,818	48.0	[45.4, 50.6]
Gender			
Females	2,280	67.8	[65.6, 69.9]
Males	3,713	65.2	[63.4, 66.9]
Clinical stage			
I	718	77.9	[74.3, 81.2]
II	820	68.7	[65.1, 72.1]
III	2,958	72.8	[70.9, 74.6]
IV	813	28.4	[24.9, 32.1]
missing/X	684	66.6	[62.2, 70.7]
Pathological stage			
0	435	90.4	[86.8, 93.2]
I	1,295	84.6	[82.2, 86.7]
II	1,215	71.8	[68.9, 74.6]
III	1,347	61.2	[58.3, 64.2]
IV	879	28.7	[25.3, 32.2]
missing/X	822	62.3	[57.8, 66.5]
Radical resection			
No, for (y)pStage 0-III	20	95.0	[69.5, 99.3]
No, for (y)pStage IV	185	8.9	[4.4, 15.5]
No, for (y)pStage X or missing	313	53.6	[46.6, 60.2]
Yes, for (y)pStage 0-III	4,272	74.2	[72.7, 75.7]
Yes, for (y)pStage IV	694	33.4	[29.5, 37.5]
Yes, for (y)pStage X or missing	509	67.5	[61.5, 72.9]

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 and a minimum follow-up of 5 year.

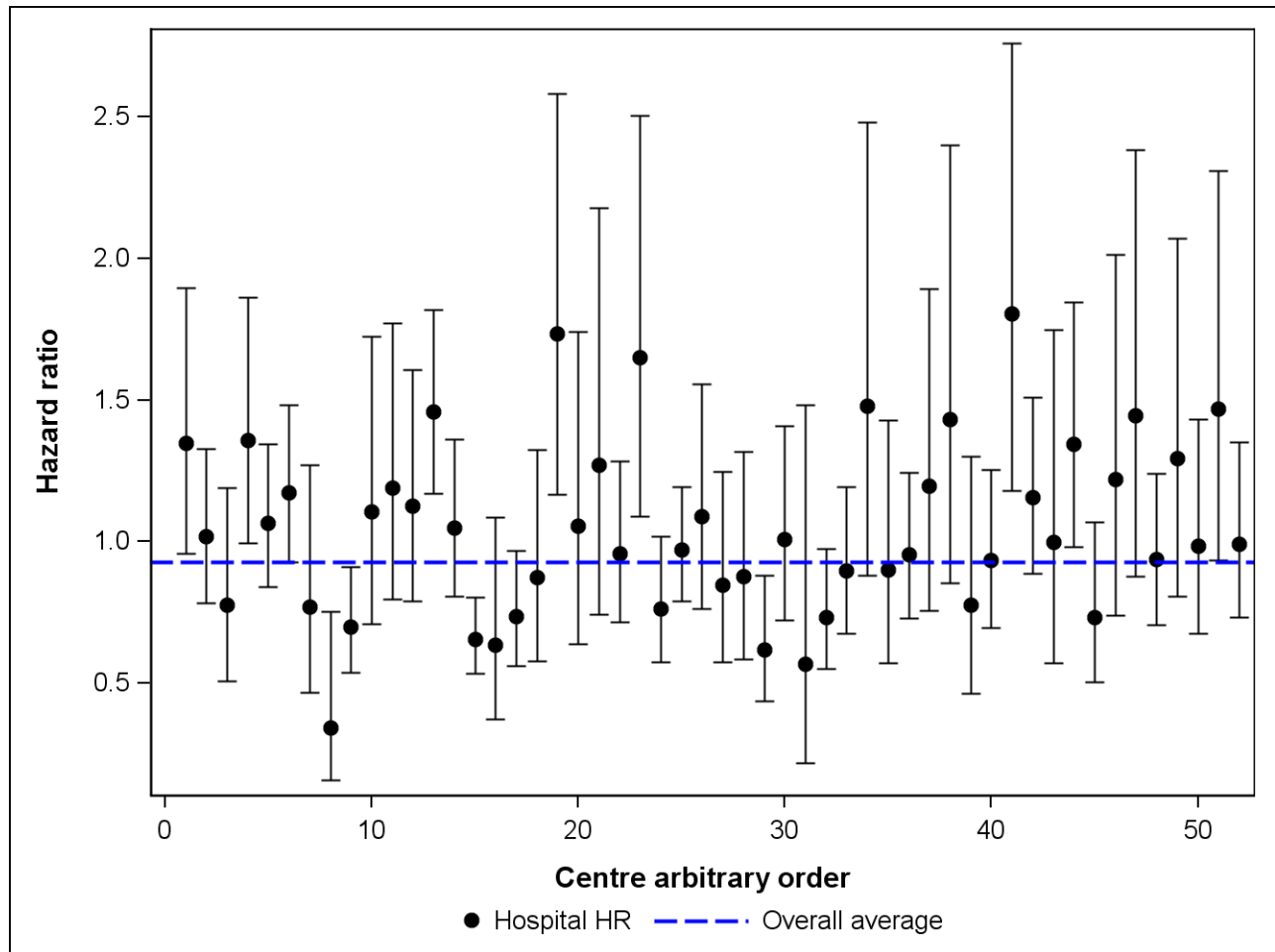


Figure 1. Forest plot of centre hazard ratios with 95% CI, adjusted for clinical stage, gender, age and radical resection applied or not.

1.4. Unadjusted relative survival

Table 3. Unadjusted relative survival stratified by baseline characteristics

Characteristic	Number at risk	Unadjusted Relative Survival at 5 year	
		PROCARE	
		RS (%)	95% CI
Overall	5,993	77.7	[76.1, 79.3]
Age group			
<60 years	1,494	79.8	[77.2, 82.3]
60-74 years	2,681	80.0	[77.9, 82.1]
75+ years	1,818	72.2	[68.3, 76.1]
Gender			
Females	2,280	77.7	[75.2, 80.2]
Males	3,713	77.6	[75.6, 79.7]
Clinical stage			
I	718	93.3	[89.0, 97.2]
II	820	83.7	[79.3, 87.8]
III	2,958	83.9	[81.8, 86.0]
IV	813	32.5	[28.6, 36.7]
missing/X	684	81.4	[76.1, 86.4]
Pathological stage			
0	435	101.5	[97.5, 104.6]
I	1,295	98.5	[95.8, 101.0]
II	1,215	86.6	[83.1, 90.0]
III	1,347	71.5	[68.0, 74.9]
IV	879	32.9	[29.0, 36.9]
missing/X	822	75.7	[70.3, 80.8]
Radical resection			
No, for (y)pStage 0-III	20	NA (N<50)	
No, for (y)pStage IV	185	10.3	[5.1, 17.9]
No, for (y)pStage X or missing	313	68.1	[59.3, 76.4]
Yes, for (y)pStage 0-III	4,272	86.9	[85.2, 88.7]
Yes, for (y)pStage IV	694	38.2	[33.7, 42.8]
Yes, for (y)pStage X or missing	509	80.1	[73.2, 86.3]

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=5,475)	
	Number	%
<i>Age group</i>		
<60 years	1,401	25.59
60-74 years	2,477	45.24
75+ years	1,597	29.17
<i>Gender</i>		
Males	3,409	62.26
Females	2,066	37.74
<i>Clinical stage</i>		
I	645	11.78
II	787	14.37
III	2,825	51.60
IV	628	11.47
missing/X	590	10.78
<i>Pathological stage</i>		
0	435	7.95
I	1,283	23.43
II	1,211	22.12
III	1,343	24.53
IV	694	12.68
missing/X	509	9.30
<i>Radical resection</i>		
Yes, for (y)pStage 0-III	4,272	78.03
Yes, for (y)pStage IV	694	12.68
Yes, for (y)pStage X or missing	509	9.30
<i>Tumour location</i>		
missing	239	4.37
high	973	17.77
low	2,172	39.67
mid	2,091	38.19

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	5,475	68.5	[67.1, 69.9]
Age group			
<60 years	1,401	79.1	[76.6, 81.5]
60-74 years	2,477	73.9	[71.9, 75.9]
75+ years	1,597	51.0	[48.2, 53.8]
Gender			
Females	2,066	70.1	[67.9, 72.4]
Males	3,409	67.5	[65.7, 69.3]
Clinical stage			
I	645	78.6	[74.8, 81.9]
II	787	69.3	[65.6, 72.7]
III	2,825	73.9	[72.1, 75.8]
IV	628	33.5	[29.4, 37.8]
missing/X	590	67.5	[62.8, 71.9]
Pathological stage			
0	435	90.4	[86.8, 93.2]
I	1,283	84.5	[82.2, 86.7]
II	1,211	71.8	[68.8, 74.6]
III	1,343	61.2	[58.2, 64.1]
IV	694	33.4	[29.5, 37.5]
missing/X	509	67.5	[61.5, 72.9]
Radical resection			
Yes, for (y)pStage 0-III	4,272	74.2	[72.7, 75.7]
Yes, for (y)pStage IV	694	33.4	[29.5, 37.5]
Yes, for (y)pStage X or missing	509	67.5	[61.5, 72.9]
Tumour location			
high	973	69.8	[66.4, 73.0]
low	2,172	66.0	[63.8, 68.3]
mid	2,091	70.1	[67.9, 72.4]

2.3. Adjusted 5-year observed survival

The graph below gives the estimated hazard ratio adjusted for case mix (clinical stage, gender, age and tumour location) for centres with at least 20 patients eligible for the analysis and a minimum follow-up of 5 year.

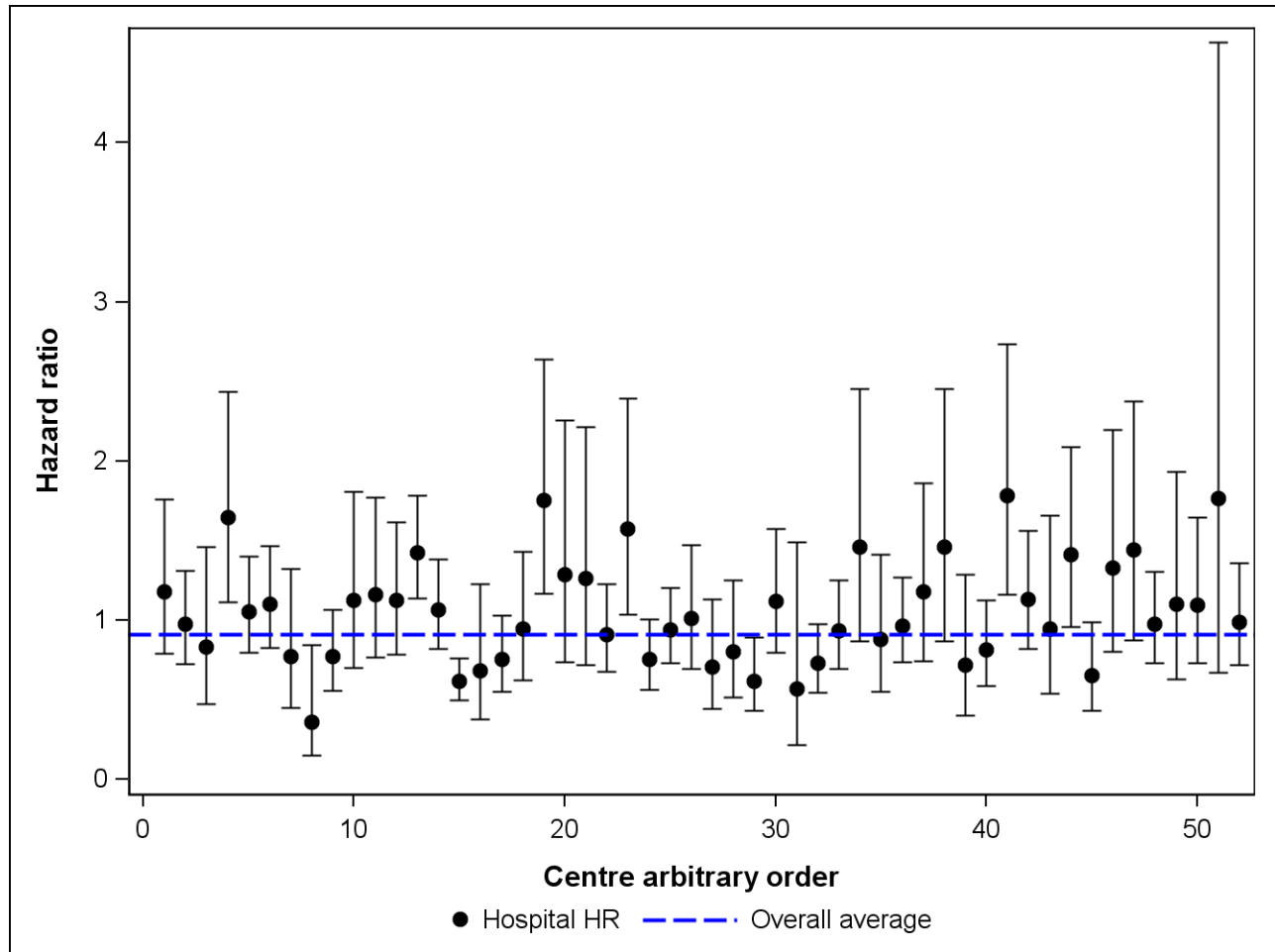


Figure 2. Forest plot of centre hazard ratios with 95% CI, for patients with radical resection, adjusted for clinical stage, gender, age and tumour location.

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			
Characteristic	Number at risk	PROCARE	
		RS (%)	95% CI
Overall	5,475	80.1	[78.5, 81.8]
Age group			
<60 years	1,401	81.3	[78.7, 83.7]
60-74 years	2,477	82.0	[79.8, 84.1]
75+ years	1,597	76.3	[72.1, 80.4]
Gender			
Females	2,066	80.0	[77.4, 82.5]
Males	3,409	80.2	[78.1, 82.3]
Clinical stage			
I	645	93.6	[89.2, 97.6]
II	787	84.2	[79.7, 88.3]
III	2,825	85.1	[82.9, 87.2]
IV	628	38.3	[33.6, 43.1]
missing/X	590	81.9	[76.3, 87.2]
Pathological stage			
0	435	101.5	[97.5, 104.6]
I	1,283	98.4	[95.7, 100.9]
II	1,211	86.6	[83.0, 89.9]
III	1,343	71.4	[68.0, 74.8]
IV	694	38.2	[33.7, 42.8]
missing/X	509	80.1	[73.2, 86.3]
Radical resection			
Yes, for (y)pStage 0-III	4,272	86.9	[85.2, 88.7]
Yes, for (y)pStage IV	694	38.2	[33.7, 42.8]
Yes, for (y)pStage X or missing	509	80.1	[73.2, 86.3]

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 and a minimum follow-up of 5 year.

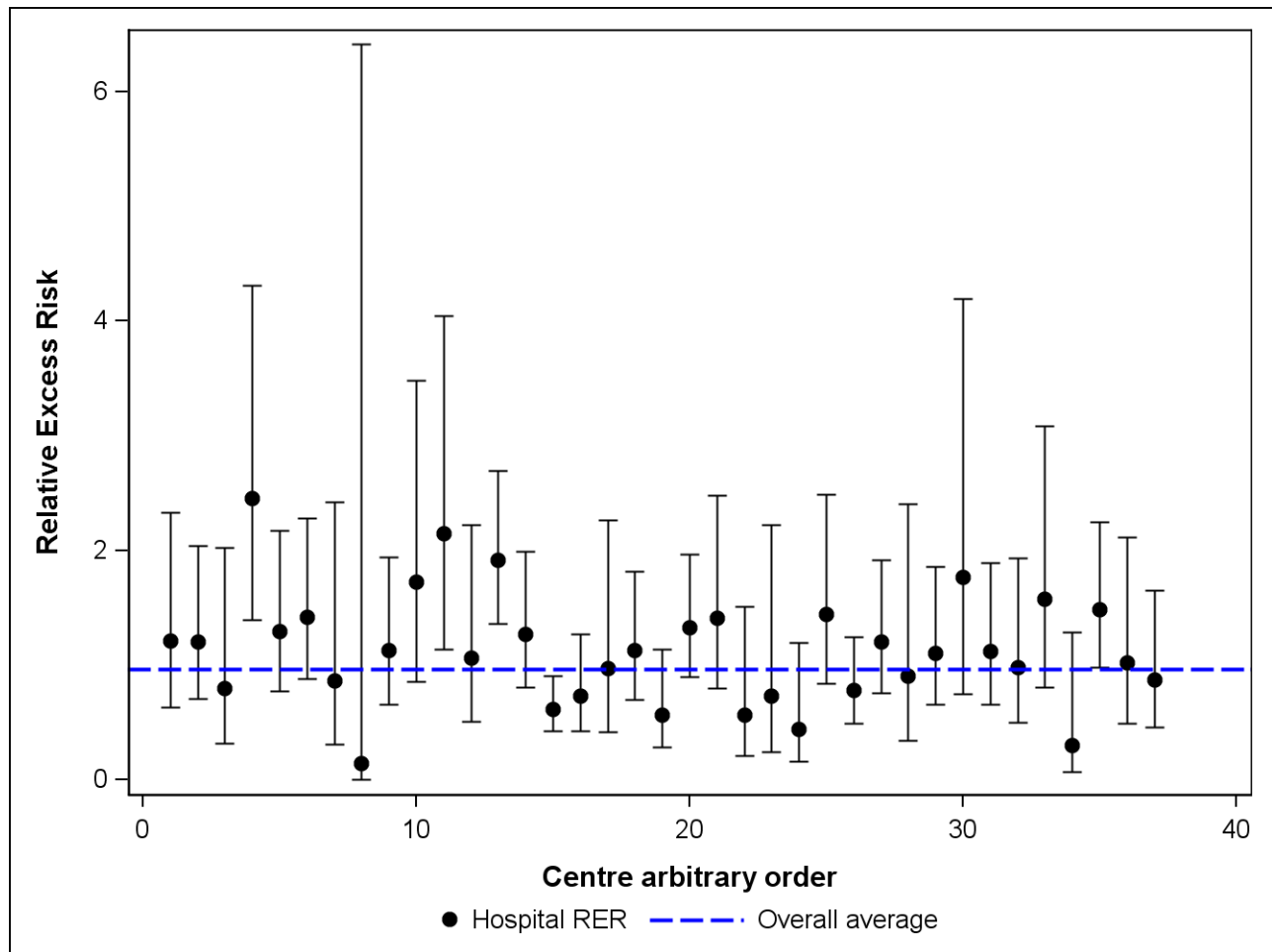


Figure 3. Forest plot of centre relative excess risk with 95% CI, for patients with radical resection, adjusted for clinical stage and age.