

# **Information on CRC patients prognosis: useful for communication of CRC screening benefits?**

Tomáš Pavlík

II. EUROPEAN COLORECTAL CANCER DAYS

ICT WORKSHOP

27. 4. 2013, Brno



# Introduction

- CRC patients prognosis is being communicated with professionals and lay public for various reasons:
  1. It documents the improvements in CRC therapy
  2. It documents the improvements in CRC diagnostics
  3. It documents the severity of CRC
  4. It documents the shifts in CRC epidemiology

# Introduction

- CRC patients prognosis is being communicated with professionals and lay public for various reasons:
  1. It documents the improvements in CRC therapy
  2. It documents the improvements in CRC diagnostics
  3. It documents the severity of CRC
  4. It documents the shifts in CRC epidemiology
- Can it also document a successful CRC screening?
- Can we use it for communication of CRC screening benefits?

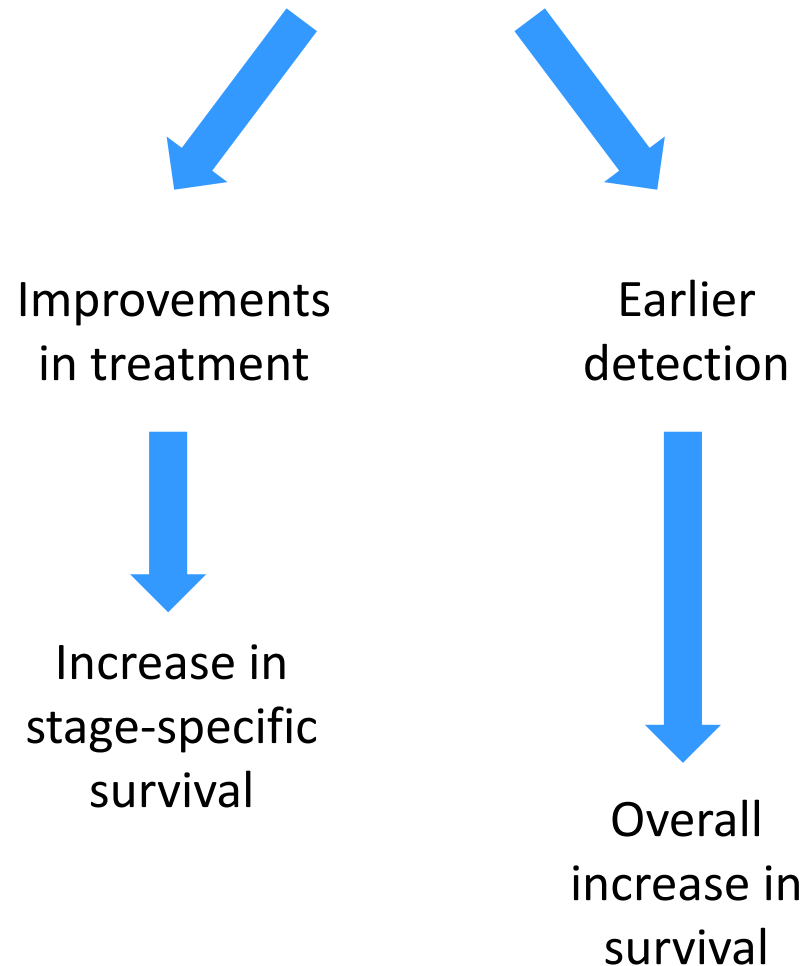
# Outcome measures in CRC patients

- observed survival
  - total mortality
- cause-specific survival
  - mortality directly due to specific cancer
  - accurate information on cause of death is necessary
- relative survival
  - mortality due to specific cancer – both direct and indirect mortality

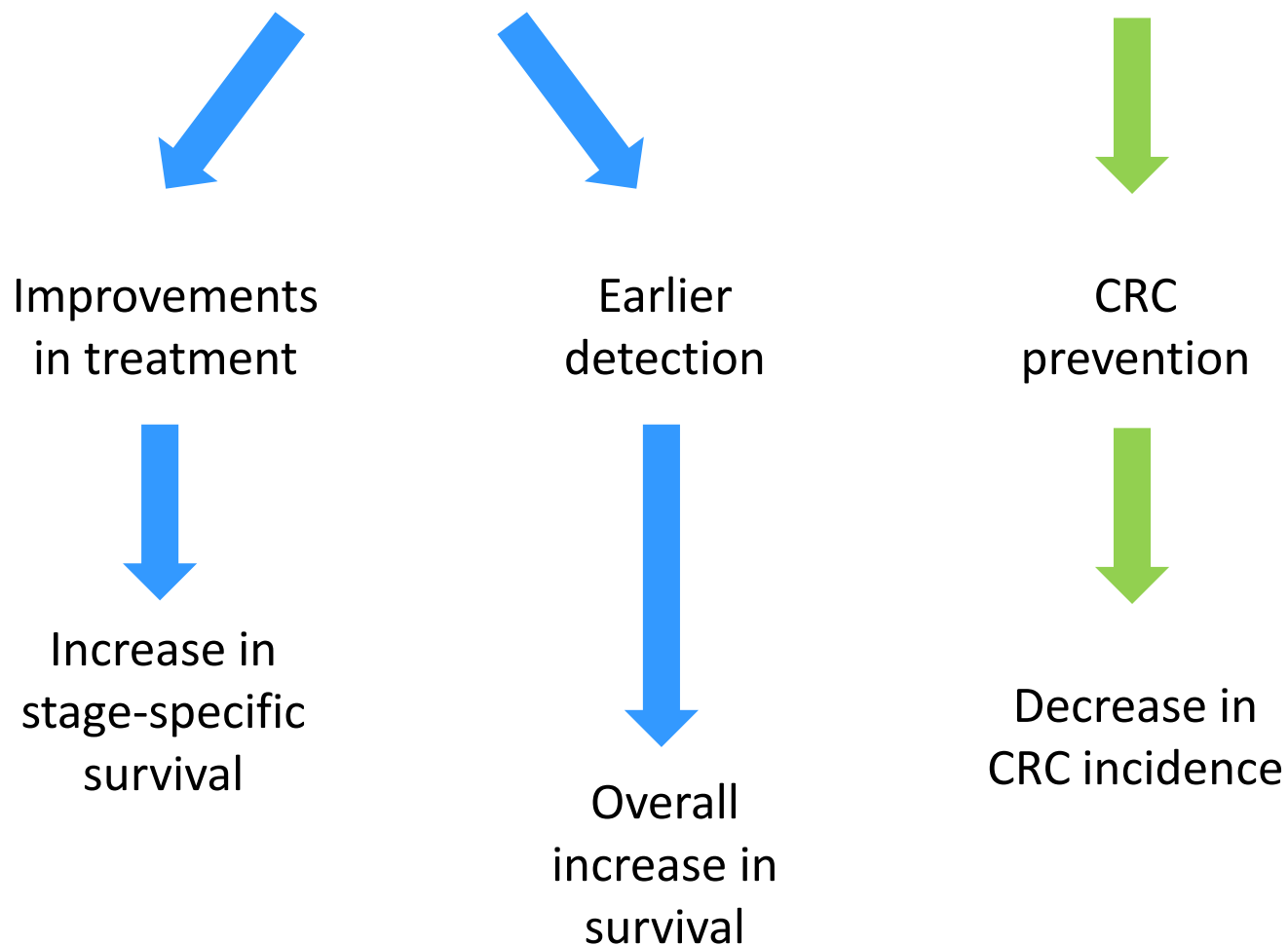
$$\text{Relative survival} = \frac{\text{observed survival proportion}}{\text{expected survival proportion}}$$

- expected survival estimated from population life tables

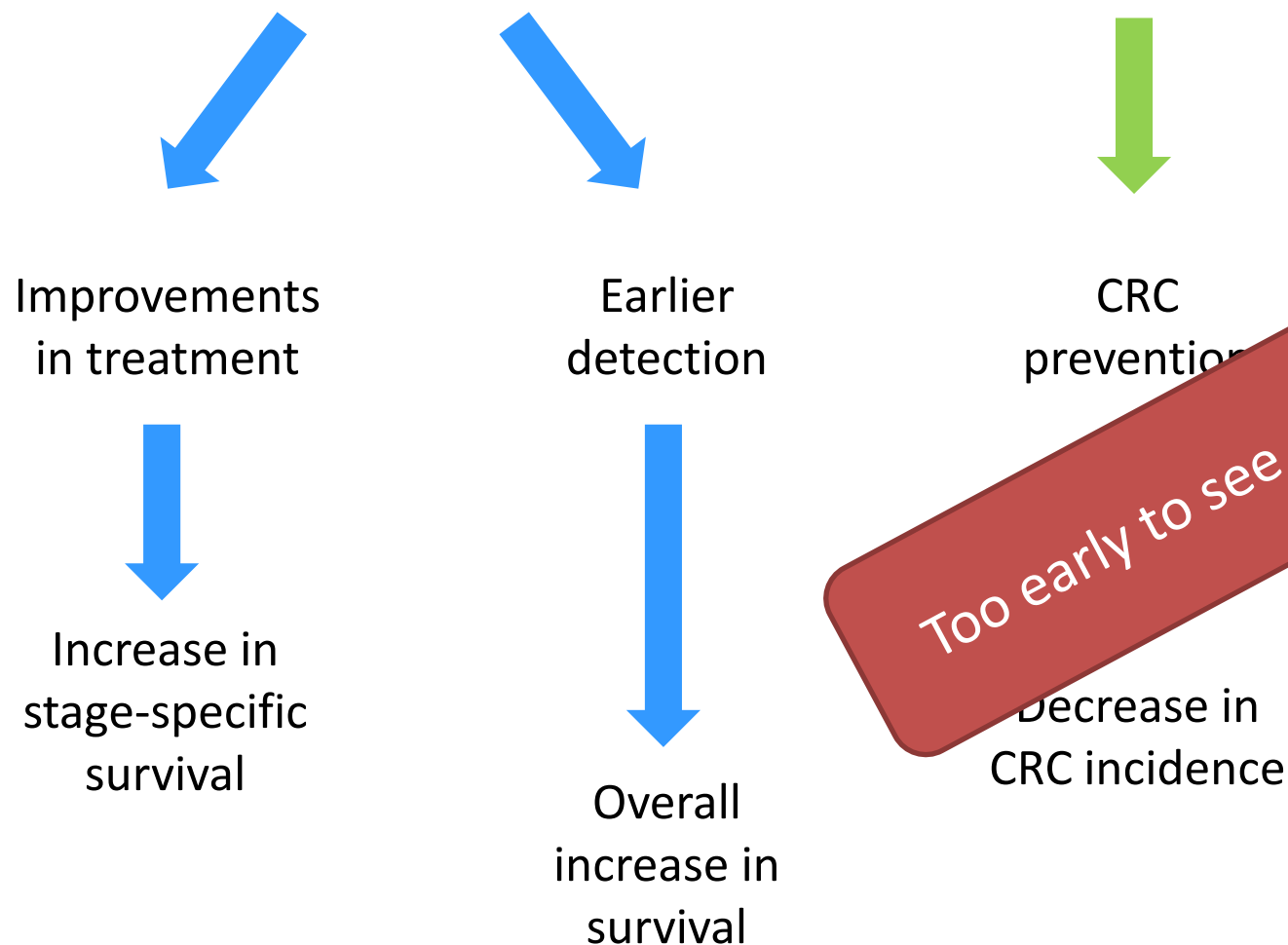
# Progress in CRC survival



# Progress in CRC survival



# Progress in CRC survival



# 5-year relative survival rates

Colorectal cancer (C18-C20)	5-year <u>relative</u> survival (95% confidence intervals)			
	Comparison of earlier periods <sup>3</sup>		Comparison of recent periods <sup>4</sup>	
	1990-1994	1995-1999	2000-2004	2005-2009
<b>All patients <sup>1</sup></b>	35.3 (33.9-36.8)	42.9 (41.4-44.4)	47.0 (45.7-48.4)	53.0 (51.7-54.3)
<b>Treated patients <sup>2</sup></b>	48.9 (46.9-50.9)	53.3 (51.5-55.0)	55.3 (53.8-56.9)	60.8 (59.4-62.3)
<b>Treated patients – stage 1</b>	*	77.4 (73.9-80.8)	82.8 (79.6-85.8)	89.4 (86.6-92.0)
<b>Treated patients – stage 2</b>	*	63.9 (60.8-66.9)	67.9 (65.1-70.5)	75.5 (72.9-77.9)
<b>Treated patients – stage 3</b>	41.5 (37.1-46.0)	42.0 (38.3-45.7)	46.9 (43.6-50.2)	55.9 (53.0-58.7)
<b>Treated patients – stage 4</b>	11.7 (9.0-14.9)	10.9 (8.7-13.5)	11.9 (9.8-14.1)	14.6 (12.6-16.8)

\* Different TNM classification systems, values not comparable.

<sup>1</sup> Evaluation of Czech National Cancer Registry: all CRC patients.

<sup>2</sup> Evaluation of Czech National Cancer Registry: all CRC patients with recorded cancer treatment

<sup>3</sup> Cohort analysis.

<sup>4</sup> Period analysis



# 5-year observed survival rates

Colorectal cancer (C18-C20)	5-year <u>observed</u> survival (95% confidence intervals)			
	Comparison of earlier periods <sup>3</sup>		Comparison of recent periods <sup>4</sup>	
	1990-1994	1995-1999	2000-2004	2005-2009
<b>All patients <sup>1</sup></b>	27.5 (26.4-28.7)	33.8 (32.7-34.9)	37.6 (36.6-38.7)	43.3 (42.3-44.4)
<b>Treated patients <sup>2</sup></b>	38.2 (36.6-39.7)	42.3 (41.0-43.7)	44.7 (43.4-45.9)	50.1 (48.9-51.3)
<b>Treated patients – stage 1</b>	*	61.6 (59.0-64.1)	66.8 (64.3-69.1)	73.3 (71.1-75.4)
<b>Treated patients – stage 2</b>	*	50.1 (47.8-52.3)	54.0 (51.9-56.0)	61.2 (59.2-63.1)
<b>Treated patients – stage 3</b>	32.8 (29.4-36.2)	33.7 (30.9-36.6)	38.2 (35.6-40.9)	46.8 (44.4-49.1)
<b>Treated patients – stage 4</b>	9.3 (7.2-11.8)	8.8 (7.0-10.8)	9.9 (8.2-11.7)	12.6 (10.8-14.4)

\* Different TNM classification systems, values not comparable.

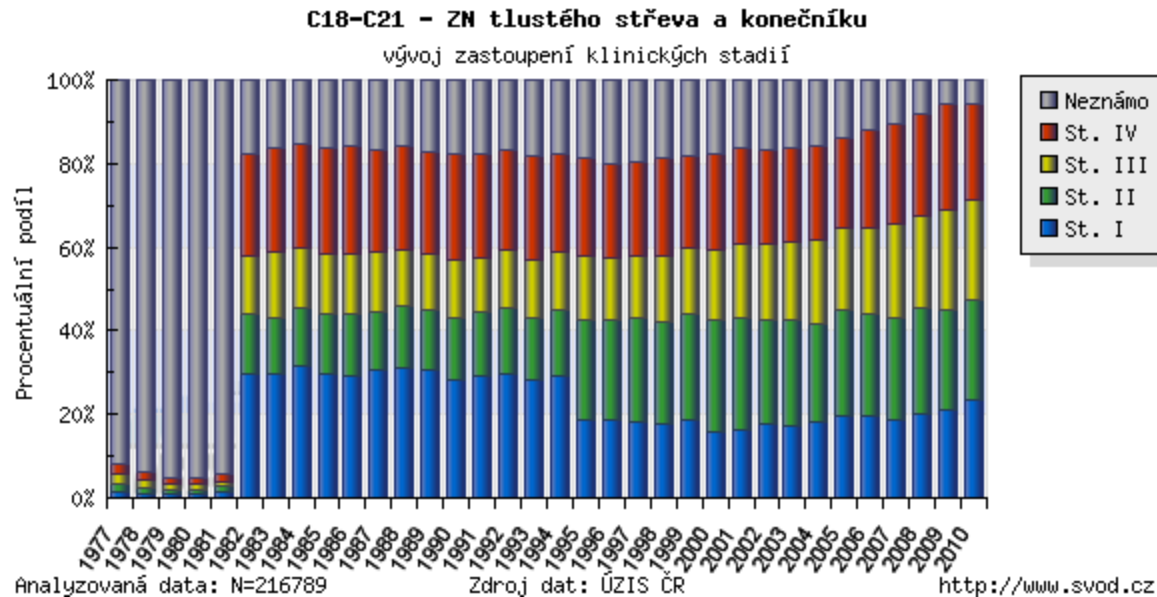
<sup>1</sup> Evaluation of Czech National Cancer Registry: all CRC patients.

<sup>2</sup> Evaluation of Czech National Cancer Registry: all CRC patients with recorded cancer treatment

<sup>3</sup> Cohort analysis.

<sup>4</sup> Period analysis

# Early CRC detection?



No massive shift in favour of less advanced stages!

# Summary

- ➡ We can use CRC survival rates for communication of CRC screening benefits, BUT
- ➡ It is very hard to distinguish the role of CRC screening from other factors.

# So...

- ➡ What sort of information on CRC prognosis can be easily used for the propagation of CRC screening?

# Stage IV prognosis!

Colorectal cancer (C18-C20)	5-year <u>observed</u> survival (95% confidence intervals)			
	Comparison of earlier periods <sup>3</sup>		Comparison of recent periods <sup>4</sup>	
	1990-1994	1995-1999	2000-2004	2005-2009
All patients <sup>1</sup>	27.5 (26.4-28.7)	33.8 (32.7-34.9)	37.6 (36.6-38.7)	43.3 (42.3-44.4)
Treated patients <sup>2</sup>	38.2 (36.6-39.7)	42.3 (41.0-43.7)	44.7 (43.4-45.9)	50.1 (48.9-51.3)
Treated patients – stage 1	*	61.6 (59.0-64.1)	66.8 (64.3-69.1)	73.3 (71.1-75.4)
Treated patients – stage 2	*	50.1 (47.8-52.3)	54.0 (51.9-56.0)	61.2 (59.2-63.1)
Treated patients – stage 3	32.8 (29.4-36.2)	33.7 (30.9-36.6)	38.2 (35.6-40.9)	46.8 (44.4-49.1)
Treated patients – stage 4	9.3 (7.2-11.8)	8.8 (7.0-10.8)	9.9 (8.2-11.7)	12.6 (10.8-14.4)

➡ Look at the tragic 5-year observed survival for stage IV CRC!

Thank you for your attention!