University of Zurich[UZH]
Epidemiology, Biostatistics and Prevention Institute
nicer Foundation National Institute for Cancer Epidemiology and Registration

Health-Related Quality of Life among Long-Term (≥5 years) Prostate Cancer Survivors by Primary Intervention: a Systematic Review

Salome Adam[1], Anita Feller[2], Sabine Rohrmann[1], Volker Arndt[2,3]

[1]Epidemiology, Biostatistics and Prevention Institute, Division of Chronic Disease Epidemiology, University of Zurich, Switzerland [2]National Institute for Cancer Epidemiology and Registration, Zurich, Switzerland [3]German Cancer Research Center (DKFZ), Office of Cancer Survivorship Research (C071), Heidelberg, Germany

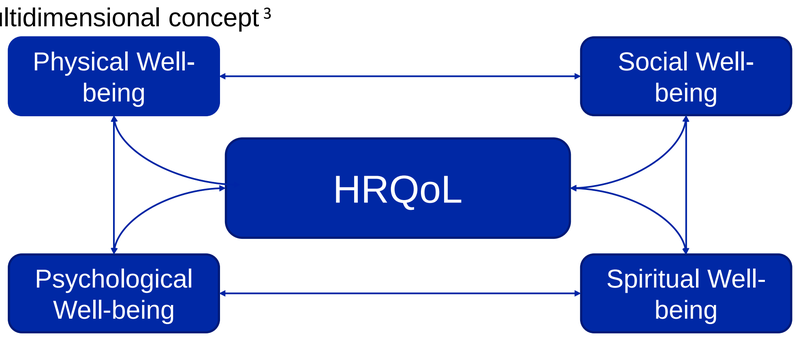
1. Introduction

- Prostate cancer (PC) **incidence**
  129.4 per 100'000 age-adjusted 2012, US [1]
- PC **5-years relative survival rate**
  93% Europe[2], 99% US [1]
- PC **long-term survivors (≥5 years)**

Interventions

1. Treatment Options
   - Radical Prostatectomy (RP)
   - External Beam Radiation therapy (EBRT)
   - Brachytherapy (BT)
   - Androgen Deprivation Therapy (ADT)
2. Observational Methods
   - Active Surveillance (AS)
   - Watchful Waiting (WW)

- No agreement on best intervention
  → Equivalent survival rates, various long-term side effects
- **Is Health-Related Quality of Life (HRQoL) an additional factor for intervention decision?**
- HRQoL is a multidimensional concept [3]



2. Aim

To systematically review and synthesize studies comparing HRQoL among long-term prostate cancer (PC) survivors by primary intervention

3. Methods

Step 1: Identification, screening, check for elegibility of studies

In March 2016 and January 2017 (update) we searched Pubmed, Medline, Embase, PscychInfo, Cinahl, Web of Science and Cochrane Central Register of Controlled Trials

Step 2: Data extraction and quality assessment

Two reviewers independently extracted data of included studies using a systematic scheme and assessed the methodologically quality of each article, following the GRADE approach[4]

Step 3: Analysing data

HRQoL was compared in three ways

- A: Intervention vs. general population (GP) at specific timepoints ≥ 5 years after primary diagnosis
- B: Intervention vs. intervention at specific timepoints ≥ 5 years after primary diagnosis
- C: Intervention vs. intervention over the period of ≥ 5 years after primary diagnosis

5. Summary and Conclusions

- Studies used different comparison groups and instruments to assess HRQoL and PC specific symptoms
- Many studies did not have enough power to draw any firm conclusions
- Most studies did not asses if results were clinically meaningful
- Long-term PC survivors and controls from the general population (GP) reported comparable global HRQoL/general health but differences in role physical, vitality and bodily pain
- Results comparing different interventions were not consistent, e.g. studies using the EORTC QLQ-C30 questionnaire did not reveal effects, whereas studies using the SF-36 did
- HRQoL among long-term prostate cancer survivors varies according to primary intervention
- Unclear which intervention options are superior with respect to HRQoL

6. References

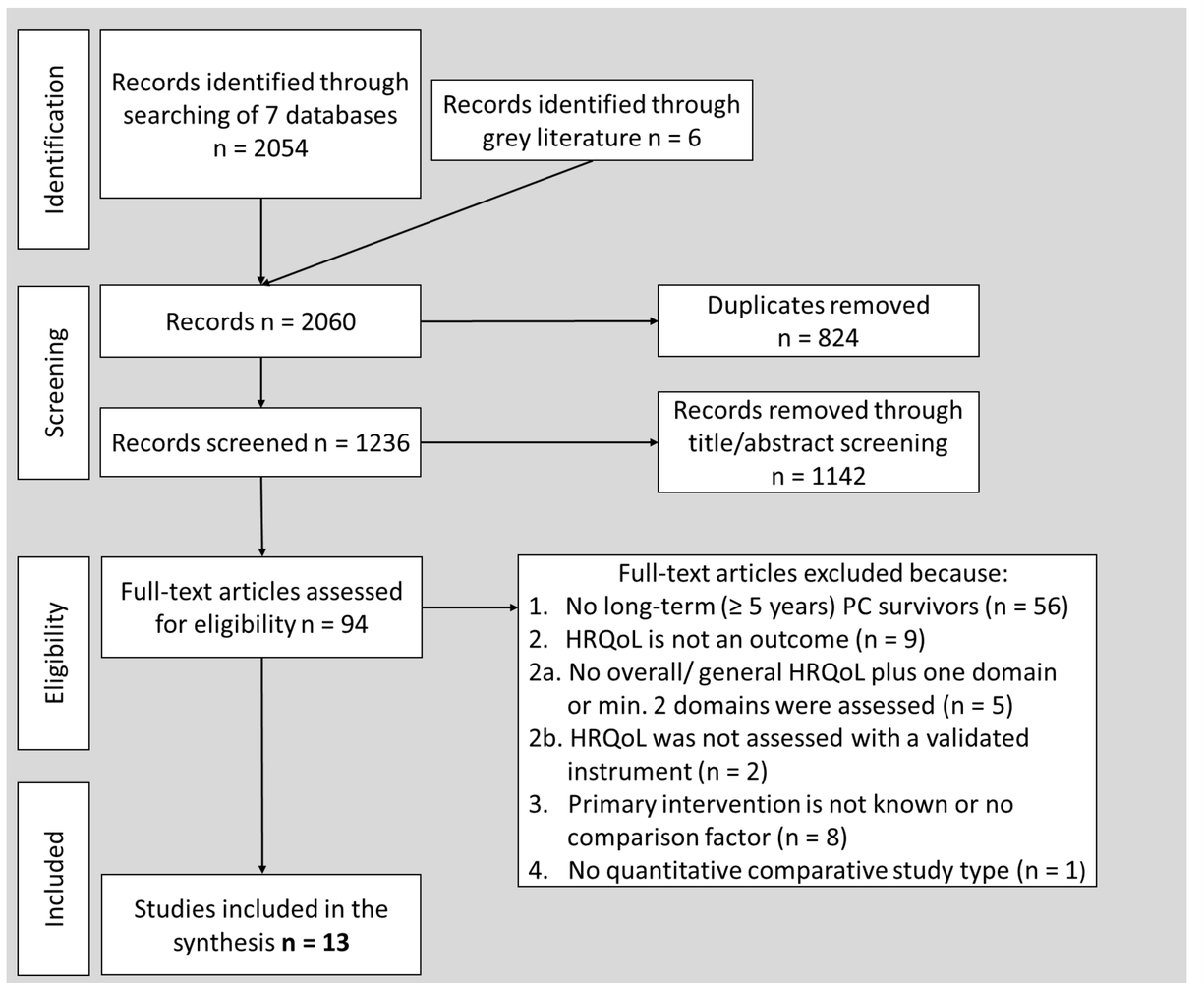
1. NCI. Cancer trends progress report. National Cancer Institute. https://progressreport.cancer.gov/after/survival#field_most_recent_estimates. Published 2012. Accessed February 20, 2017.
2. Sant M. MP, Primic-Žakelj M., Otter R., Francisci S., Gatta G., Berrino F. DAR. Cancer survival in Europe, 1999–2007: Doing better, feeling worse? Eur J Cancer. 2015;51:2101-2103.
3. Ferrell BR, Grant MM, Funk B, Otis-Green S, Garcia N. Quality of life in breast cancer survivors as identified by focus groups. Psychooncology. 1997;6(1):13-23. doi:10.1002/(SICI)1099-1611(199703)6:1<13::AID-PON231>3.0.CO;2-S.
4. Guyatt GH, Oxman AD, Vist GE, et al. GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. *BMJ*. 2008;336(7650).

7. Contact

salome.adam@uzh.ch
http://www.ebpi.uzh.ch/en/aboutus/departments/epidemiology/cde/teamcde/adam.html

4. Results

Fig 1: Flowchart



Tab 1: Main study findings

SF-36

CG	Studies (n)	Sample size (n)	Intervention(s)	Domains or scales with effect	Statistical significant (+) and/ or clinical meaningful results (*)
A	2	309	EBRT	Role physical	2 x ↓*[1]
				Vitality	1 x ↓*[1]
				Bodily Pain	1 x ↑+
A	2	284	RP	Role physical	1 x ↓+
				Bodily Pain	1 x ↑+
A	2	127	AS/WW	Bodily Pain	1 x ↑+
A	1	60	ADT	none	none
B	3	157 / 113	EBRT vs. AS/WW	General Health Perception	1 x ↑+
				Physical Function	1 x ↓+
				Role Emotional	1 x +[2]
				Vitality	1 x +[2]
				Bodily Pain	1 x ↓+
B	2	175 / 282	EBRT vs. RP	Physical Function	1 x ↑+*[1]
B	1	193 / 60	RP vs. ADT	Physical Function	2 x ↑+*[1]
				Vitality	1 x ↑+*[1]
B	1	193 / 56	RP vs. AS/WW	none	none
B	1	193 / 263 / 60 / 56	RP vs. EBRT vs. ADT vs. WW/AS	Physical Function	1 x ↑+*
				Vitality	1 x ↑+*
C	1	545 / 542 / 545[3]	EBRT vs. RP vs. AS/WW	none	none
C	1	53 / 58	RP + ADT vs. EBRT + ADT	Physical Function	1 x ↑+
				Role Physical	1 x ↑+
				Role Emotional	1 x ↑+
				Vitality	1 x ↑+
				Bodily Pain	1 x ↑+
EORTC QLQ-C30					
A	2	58	EBRT	Role Functioning	1 x ↓+*[1]
				Pain	1 x ↓+
				Diarrhoea	1 x ↓*/1 x ↓+*[1]
				Nausea/Vomiting	1 x ↓+
A	1	63	EBRT + clinical progression and/or ADT	Social Functioning	1 x ↓*
				Sleep Disturbance	1 x ↓*
				Diarrhoea	1 x ↓*
B	1	13 / 14	EBRT + ADT vs. EBRT	none	none
B	1	27 / 27	EBRT vs. AS/WW	none	none
B	1	174[4]	RP vs. BT	none	none
B	1	545 / 542 / 545[3]	EBRT vs. RP vs. AS/WW	none	none
B	1	85-111[3]	ADT vs. ADT + EBRT	none	none
C	1	85-111[3]	ADT vs. ADT + EBRT	Physical Functioning	1 x ↑+
				Role Functioning	1 x ↑+

CG comparison group; + statistical significant difference; *clinical important difference; [1]not reported but 10 points difference; [2]no data about direction of effect; [3] sample size unclear at survey; [4]sample size per treatment unclear

All scales and single-item measures range in scores from 0 to 100. EORTC QOQL-C30: A high score for a functional scale represents a high / healthy level of functioning, a high score for the global health status / QoL represents a high QoL, and a high score for a symptom scale / item represents a low level of symptomatology (e.g. less pain). SF-36: A high score represents better functions. High scores in the bodily pain scale indicates a lower level of pain.