

Quality of life outcomes after primary treatment for clinically localised prostate cancer: A systematic review

LARDAS, Michael, LIEW, Matthew, VAN DEN BERGH, Roderick C., DE SANTIS, Maria, BELLMUNT, Joaquim, VAN DEN BROECK, Thomas, CORNFORD, Philip, CUMBERBATCH, Marcus G., FOSSATI, Nicola, GROSA, Tobias, HENRY, Ann M., BOLLA, Michel, BRIERS, Erik, JONIAU, Steven, LAM, Thomas B., MASON, Malcolm D., MOTTET, Nicolas, VAN DER POEL, Henk G., ROUVIÈRE, Olivier, SCHOOTS, Ivo G., WIEGEL, Thomas, WILLEMSE, Peter-Paul M., YUAN, Cathy Yuhong and BOURKE, Liam
<<http://orcid.org/0000-0002-6548-4603>>

Available from Sheffield Hallam University Research Archive (SHURA) at:

<https://shura.shu.ac.uk/16531/>

This document is the Supplemental Material

Citation:

LARDAS, Michael, LIEW, Matthew, VAN DEN BERGH, Roderick C., DE SANTIS, Maria, BELLMUNT, Joaquim, VAN DEN BROECK, Thomas, CORNFORD, Philip, CUMBERBATCH, Marcus G., FOSSATI, Nicola, GROSA, Tobias, HENRY, Ann M., BOLLA, Michel, BRIERS, Erik, JONIAU, Steven, LAM, Thomas B., MASON, Malcolm D., MOTTET, Nicolas, VAN DER POEL, Henk G., ROUVIÈRE, Olivier, SCHOOTS, Ivo G., WIEGEL, Thomas, WILLEMSE, Peter-Paul M., YUAN, Cathy Yuhong and BOURKE, Liam (2017). Quality of life outcomes after primary treatment for clinically localised prostate cancer: A systematic review. *European Urology*, 72 (6), 869-885. [Article]

Copyright and re-use policy

See <http://shura.shu.ac.uk/information.html>

Supplementary table 1: Summary of results for RCTs

Author, year and PROM tool used	Interventions	N at baseline	Baseline QoL scores	FU	Reported Results		Reported p-values or Hazard Ratios with confidence intervals
					Estimated difference of EPIC score between the two intervention arms Mean (SD) Higher values refer to better function		P-values
Crook 2011 EPIC	Radical prostatectomy	66	NR	mean of 62.4 months	Urinary: 88.15 (11.47) Bowel: 94.37 (8.91) Sexual: 39.22 (25.35) Hormonal: 89.98 (12.79)		Urinary: 0.02 <i>favouring BT</i> Bowel: 0.34 Sexual: 0.001 <i>favouring BT</i> Hormonal: 0.1
	Brachytherapy	102			Urinary: 91.82 (8.53) Bowel: 93.0 (11.62) Sexual: 52.54 (24.06) Hormonal: 93.52 (8.27)		
					Cancer specific quality of life EPIC scores at 12 months Mean (SD) Higher values refer to better function	Cancer specific quality of life EPIC scores at 24 months Mean (SD) Higher values refer to better function	
	Active monitoring	545	Urinary incontinence: 93.5 (11.3) Urinary summary score: 93.0 (9.6) Urinary bother: 91.2 (12.3) Urinary obstruction/irritative: 93.2 (9.5) Sexual summary score: 60.3 (23.5) Sexual function: 53.5 (22.8) Sexual bother: 76.0 (30.5) Bowel summary score: 92.8 (9.1) Bowel function: 91.6 (9.0) Bowel bother: 94.0 (11.8)	72 months	Urinary incontinence: 89.1 (15.3) Urinary summary score: 91.2 (10.1) Urinary bother: 90.0 (12.2) Urinary obstruction/irritative: 92.9 (9.0) Sexual summary score: 51.5 (27.4) Sexual function: 44.4 (27.1) Sexual bother: 67.8 (34.3) Bowel summary score: 93.4 (8.6) Bowel function: 92.1 (8.6) Bowel bother: 94.7 (10.4)	Urinary incontinence: 88.9 (15.0) Urinary summary score: 90.3 (10.9) Urinary bother: 88.6 (13.5) Urinary obstruction/irritative: 91.7 (9.9) Sexual summary score: 48.2 (27.5) Sexual function: 41.9 (26.7) Sexual bother: 62.2 (35.4) Bowel summary score: 93.2 (9.4) Bowel function: 92.2 (19.1) Bowel bother: 94.2 (11.7)	

Supplementary table 1: Summary of results for RCTs

Author, year and PROM tool used	Interventions	N at baseline	Baseline QoL scores	FU	Reported Results		Reported p-values or Hazard Ratios with confidence intervals
Donovan 2016 QLQ-C30 EPIC	Radical prostatectomy	553	Urinary incontinence: 92.8 (11.6) Urinary summary score: 91.9 (9.4) Urinary bother: 89.9 (12.2) Urinary obstruction/irritative: 92.0 (9.9) Sexual summary score: 61.4 (22.7) Sexual function: 54.4 (22.9) Sexual bother: 77.6 (28.9) Bowel summary score: 93.1 (8.9) Bowel function: 91.4 (9.3) Bowel bother: 94.7 (10.3)		Urinary incontinence: 76.5 (23.7) Urinary summary score: 86.5 (13.2) Urinary bother: 87.7 (14.1) Urinary obstruction/irritative: 92.8 (9.2) Sexual summary score: 30.1 (23.2) Sexual function: 23.6 (22.8) Sexual bother: 44.5 (34.1) Bowel summary score: 94.0 (7.7) Bowel function: 92.8 (8.1) Bowel bother: 95.2 (9.1)	Urinary incontinence: 80.3 (21.4) Urinary summary score: 88.1 (12.3) Urinary bother: 88.9 (13.8) Urinary obstruction/irritative: 93.4 (8.7) Sexual summary score: 33.3 (23.3) Sexual function: 27.2 (23.4) Sexual bother: 46.8 (33.1) Bowel summary score: 93.8 (8.2) Bowel function: 92.6 (8.5) Bowel bother: 95.0 (9.4)	
	EBRT	545	Urinary incontinence: 92.8 (11.0) Urinary summary score: 93.2 (8.3) Urinary bother: 92.1 (10.3) Urinary obstruction/irritative: 93.8 (7.9) Sexual summary score: 63.6 (23.1) Sexual function: 55.7 (23.0) Sexual bother: 80.5 (29.2) Bowel summary score: 94.8 (6.9) Bowel function: 92.9 (8.0) Bowel bother: 96.8 (7.1)		Urinary incontinence: 90.5 (13.5) Urinary summary score: 91.9 (9.0) Urinary bother: 90.6 (11.0) Urinary obstruction/irritative: 93.2 (7.9) Sexual summary score: 43.2 (27.6) Sexual function: 36.6 (27.0) Sexual bother: 57.6 (36.5) Bowel summary score: 90.5 (12.2) Bowel function: 90.3 (11.1) Bowel bother: 90.7 (14.9)	Urinary incontinence: 89.0 (14.1) Urinary summary score: 91.4 (9.8) Urinary bother: 90.3 (11.8) Urinary obstruction/irritative: 93.4 (8.5) Sexual summary score: 43.4 (25.2) Sexual function: 36.9 (25.1) Sexual bother: 57.9 (33.5) Bowel summary score: 89.3 (12.8) Bowel function: 89.5 (10.7) Bowel bother: 89.2 (16.7)	
					Cancer specific quality of life	Cancer specific quality of life	

Supplementary table 1: Summary of results for RCTs

Author, year and PROM tool used	Interventions	N at baseline	Baseline QoL scores	FU	Reported Results		Reported p-values or Hazard Ratios with confidence intervals
					EPIC scores at 36 months Mean (SD) Higher values refer to better function	EPIC scores at 48 months Mean (SD) Higher values refer to better function	
Donovan 2016 cont.	Active monitoring	545			Urinary incontinence: 87.3 (16.7) Urinary summary score: 89.3 (11.5) Urinary bother: 87.5 (14.1) Urinary obstruction/irritative: 91.1 (10.0) Sexual summary score: 45.9 (28.4) Sexual function: 39.2 (27.4) Sexual bother: 60.7 (36.3) Bowel summary score: 92.8 (10.8) Bowel function: 91.9 (10.0) Bowel bother: 93.7 (13.1)	Urinary incontinence: 86.8 (17.4) Urinary summary score: 89.2 (12.5) Urinary bother: 87.9 (14.6) Urinary obstruction/irritative: 91.3 (11.2) Sexual summary score: 44.5 (26.9) Sexual function: 37.2 (26.5) Sexual bother: 60.4 (35.8) Bowel summary score: 92.9 (11.2) Bowel function: 92.2 (10.8) Bowel bother: 93.8 (12.7)	
	Radical prostatectomy	553			Urinary incontinence: 79.3 (21.8) Urinary summary score: 87.9 (12.1) Urinary bother: 88.7 (13.4) Urinary obstruction/irritative: 93.3 (8.7) Sexual summary score: 33.9 (23.9) Sexual function: 26.9 (23.7) Sexual bother: 49.6 (34.8) Bowel summary score: 93.8 (8.0) Bowel function: 92.7 (8.1) Bowel bother: 94.9 (9.8)	Urinary incontinence: 80.2 (20.3) Urinary summary score: 88.6 (11.9) Urinary bother: 89.5 (13.0) Urinary obstruction/irritative: 94.1 (8.6) Sexual summary score: 34.3 (24.2) Sexual function: 27.1 (24.2) Sexual bother: 50.4 (34.2) Bowel summary score: 93.7 (8.9) Bowel function: 93.0 (8.4) Bowel bother: 94.6 (11.1)	
	EBRT	545			Urinary incontinence: 89.8 (13.5) Urinary summary score: 91.7 (9.2) Urinary bother: 90.3 (11.4) Urinary obstruction/irritative: 93.3	Urinary incontinence: 89.2 (14.4) Urinary summary score: 91.4 (9.6)	

Supplementary table 1: Summary of results for RCTs

Author, year and PROM tool used	Interventions	N at baseline	Baseline QoL scores	FU	Reported Results		Reported p-values or Hazard Ratios with confidence intervals
					(7.7) Sexual summary score: 42.5 (25.9) Sexual function: 35.7 (25.5) Sexual bother: 57.1 (34.9) Bowel summary score: 90.8 (11.2) Bowel function: 90.7 (10.1) Bowel bother: 90.9 (14.3)	Urinary bother: 90.4 (11.6) Urinary obstruction/irritative: 93.2 (8.4) Sexual summary score: 41.8 (25.5) Sexual function: 34.3 (25.4) Sexual bother: 58.2 (34.7) Bowel summary score: 91.2 (11.2) Bowel function: 90.7 (10.1) Bowel bother: 91.7 (13.8)	
					Cancer specific quality of life EPIC scores at 60 months Mean (SD) Higher values refer to better function	Cancer specific quality of life EPIC scores at 72 months Mean (SD) Higher values refer to better function	P-values for a difference in mean response over 6 years of follow-up across the three groups
Donovan 2016 cont.	Active monitoring	545			Urinary incontinence: 87.2 (16.8) Urinary summary score: 89.6 (11.3) Urinary bother: 88.3 (13.5) Urinary obstruction/irritative: 91.7 (9.8) Sexual summary score: 43.2 (27.4) Sexual function: 35.6 (27.3) Sexual bother: 60.1 (36.3) Bowel summary score: 93.1 (10.1) Bowel function: 92.0 (9.5) Bowel bother: 94.1 (12.2)	Urinary incontinence: 85.8 (18.5) Urinary summary score: 89.0 (12.5) Urinary bother: 88.0 (13.9) Urinary obstruction/irritative: 91.5 (11.0) Sexual summary score: 40.6 (26.7) Sexual function: 32.5 (26.4) Sexual bother: 57.9 (36.6) Bowel summary score: 93.0 (9.8) Bowel function: 92.3 (9.7) Bowel bother: 93.7 (11.6)	Urinary incontinence: <0.001 <i>favouring AM and EBRT over RP</i> Urinary summary score: <0.001 <i>favouring AM and EBRT over RP</i> Urinary bother: 0.095 Urinary obstruction/irritative: 0.77 Sexual summary score: <0.001 <i>favouring AM and EBRT over RP</i> Sexual function: <0.001 <i>favouring AM and EBRT over RP</i> Sexual bother: <0.001 <i>favouring AM and EBRT over RP</i> Bowel summary score: <0.001 <i>favouring AM and RP</i>
	Radical prostatectomy	553			Urinary incontinence: 80.6 (20.2) Urinary summary score: 88.9 (11.1) Urinary bother: 89.9 (11.9) Urinary obstruction/irritative: 94.1 (7.6) Sexual summary score: 34.5 (24.0) Sexual function: 26.5 (24.4) Sexual bother: 52.6 (35.1) Bowel summary score: 94.0 (7.9) Bowel function: 92.9 (7.7) Bowel bother: 95.1 (9.6)	Urinary incontinence: 80.9 (20.2) Urinary summary score: 88.7 (11.3) Urinary bother: 89.7 (11.9) Urinary obstruction/irritative: 93.7 (7.9) Sexual summary score: 32.3 (23.2) Sexual function: 23.7 (23.4) Sexual bother: 51.4 (35.5) Bowel summary score: 93.2 (8.7) Bowel function: 92.3 (8.6)	

Supplementary table 1: Summary of results for RCTs

Author, year and PROM tool used	Interventions	N at baseline	Baseline QoL scores	FU	Reported Results		Reported p-values or Hazard Ratios with confidence intervals
						Bowel bother: 94.2 (10.8)	<i>over EBRT</i> Bowel function: <0.001 <i>favouring AM and RP over EBRT</i> Bowel bother: <0.001 <i>favouring AM and RP over EBRT</i>
	EBRT	545			Urinary incontinence: 89.4 (14.4) Urinary summary score: 91.3 (9.6) Urinary bother: 90.2 (11.6) Urinary obstruction/irritative: 93.0 (8.3) Sexual summary score: 40.1 (24.4) Sexual function: 31.9 (24.8) Sexual bother: 58.9 (35.3) Bowel summary score: 91.0 (10.6) Bowel function: 90.3 (10.1) Bowel bother: 91.6 (13.2)	Urinary incontinence: 89.4 (14.0) Urinary summary score: 91.4 (9.2) Urinary bother: 90.3 (11.2) Urinary obstruction/irritative: 93.1 (7.7) Sexual summary score: 41.3 (24.9) Sexual function: 32.7 (25.6) Sexual bother: 60.1 (34.9) Bowel summary score: 91.2 (10.9) Bowel function: 90.8 (9.7) Bowel bother: 91.7 (13.7)	
					Cancer-specific quality of life: EORTC-QLQ-C30 at 5 years Mean (SD) Higher values refer to better function		P-values
Donovan 2016 cont.	Active monitoring	545			Global health status: 76.8 (17.6) Functioning scales Physical: 90.9 (14.7) Role: 90.5 (19.7) Emotional: 87.3 (17.3) Cognitive: 86.0 (15.4) Social: 91.3 (17.2) Symptom scales and items Fatigue: 19.0 (19.4) Nausea/vomiting: 2.0 (7.1) Pain: 12.0 (20.5) Dyspnoea: 12.4 (22.1) Insomnia: 18.3 (25.6) Appetite loss: 4.9 (13.6) Constipation: 6.4 (15.7) Diarrhoea: 6.0 (15.3) Financial difficulties: 3.1 (13.8)		
	Radical prostatectomy	553			Global health status: 78.4 (17.7) Functioning scales		

Supplementary table 1: Summary of results for RCTs

Author, year and PROM tool used	Interventions	N at baseline	Baseline QoL scores	FU	Reported Results		Reported p-values or Hazard Ratios with confidence intervals	
					Physical: 91.6 (13.8) Role: 90.9 (19.0) Emotional: 87.9 (16.0) Cognitive: 87.9 (14.4) Social: 91.3 (16.8) Symptom scales and items Fatigue: 17.1 (17.9) Nausea/vomiting: 1.4 (6.2) Pain: 9.7 (18.1) Dyspnoea: 10.1 (20.0) Insomnia: 14.6 (22.4) Appetite loss: 3.8 (11.9) Constipation: 4.6 (14.3) Diarrhoea: 6.0 (16.4) Financial difficulties: 3.4 (12.7)		Global health status: 0.38 Functioning scales Physical: 0.81 Role: 0.60 Emotional: 0.79 Cognitive: 0.21 Social: 0.95 Symptom scales and items Fatigue: 0.24 Nausea/vomiting: 0.44 Pain: 0.20 Dyspnoea: 0.34 Insomnia: 0.08 Appetite loss: 0.56 Constipation: 0.25 Diarrhoea: 0.89 Financial difficulties: 0.80	
	EBRT	545			Global health status: 77.4 (19.0) Functioning scales Physical: 91.3 (14.1) Role: 89.5 (20.1) Emotional: 87.7 (16.6) Cognitive: 87.3 (15.7) Social: 91.6 (17.8) Symptom scales and items Fatigue: 17.3 (17.1) Nausea/vomiting: 1.7 (5.9) Pain: 11.9 (20.2) Dyspnoea: 11.3 (19.9) Insomnia: 16.0 (23.1) Appetite loss: 4.2 (13.2) Constipation: 5.1 (14.0) Diarrhoea: 5.6 (13.7) Financial difficulties: 2.8 (11.9)			
			QLQ-C30 baseline		Mean QLQ-C30 scores at 1 year Higher values refer to better function	Mean QLQ-C30 scores at 5	P-value for difference	P-value for difference

Supplementary table 1: Summary of results for RCTs

Author, year and PROM tool used	Interventions	N at baseline	Baseline QoL scores	FU	Reported Results		Reported p-values or Hazard Ratios with confidence intervals	
			score			years Higher values refer to better function	from baseline QLQ-30 score at 1 year	from baseline QLQ-30 score at 5 years
Giberti 2009 QLQ-C30 QLQ-PR25	Radical prostatectomy	100	Cognitive functioning: 91 Emotional functioning: 82 Physical functioning: 91 Role functioning: 93 Social functioning: 89 Global health/QoL: 79	60 months	Cognitive functioning: 90 Emotional functioning: 86 Physical functioning: 86 Role functioning: 90 Social functioning: 89 Global health/QoL: 78	Cognitive functioning: 90 Emotional functioning: 84 Physical functioning: 90 Role functioning: 90 Social functioning: 89 Global health/QoL: 78	Cognitive functioning: NSS Emotional functioning: 0.03 Physical functioning: 0.02 Role functioning: NSS Social functioning: NSS Global health/QoL: NSS	Cognitive functioning: NSS Emotional functioning: NSS Physical functioning: NSS Role functioning: NSS Social functioning: NSS Global health/QoL: NSS
	Brachytherapy	100	Cognitive functioning: 87 Emotional functioning: 80 Physical functioning: 94 Role functioning: 95 Social functioning: 92 Global health/QoL: 83		Cognitive functioning: 88 Emotional functioning: 84 Physical functioning: 90 Role functioning: 93 Social functioning: 93 Global health/QoL: 81	Cognitive functioning: 88 Emotional functioning: 82 Physical functioning: 94 Role functioning: 94 Social functioning: 94 Global health/QoL: 82	Cognitive functioning: NSS Emotional functioning: 0.01 Physical functioning: 0.03 Role functioning: NSS Social functioning: NSS Global health/QoL: NSS	Cognitive functioning: NSS Emotional functioning: NSS Physical functioning: NSS Role functioning: NSS Social functioning: NSS Global health/QoL: NSS
			QLQ-PR25 baseline score		Mean QLQ-PR25 scores at 1 year Higher values refer to worse function	Mean QLQ-PR25 scores at 5 years Higher values refer to worse function	P-value for difference from baseline QLQ-PR25 score at 1 year	P-value for difference from baseline QLQ-PR25 score at 5 years
Giberti 2009 cont.	Radical prostatectomy	100	Urinary symptoms: 9 Bowel symptoms: 2 Treatment-related symptoms: 5 Sexual function: 5 Sexual activity: 6		Urinary symptoms: 10 Bowel symptoms: 2 Treatment-related symptoms: 9 Sexual function: 7 Sexual activity: 8	Urinary symptoms: 10 Bowel symptoms: 2 Treatment-related symptoms: 8 Sexual function: 7 Sexual activity: 8	Urinary symptoms: NSS Bowel symptoms: NSS Treatment-related symptoms: 0.03 Sexual function: NSS Sexual activity: NSS	Urinary symptoms: NSS Bowel symptoms: NSS Treatment-related symptoms: NSS Sexual function: NSS Sexual activity: NSS
	Brachytherapy	100	Urinary symptoms: 8 Bowel symptoms: 2 Treatment-related symptoms: 6 Sexual function: 6		Urinary symptoms: 15 Bowel symptoms: 4 Treatment-related symptoms: 9 Sexual function: 7 Sexual activity: 8	Urinary symptoms: 17 Bowel symptoms: 2 Treatment-related symptoms: 8 Sexual function: 8 Sexual activity: 8	Urinary symptoms: <0.01 Bowel symptoms: NSS	Urinary symptoms: NSS Bowel symptoms: NSS Treatment-related

Supplementary table 1: Summary of results for RCTs

Author, year and PROM tool used	Interventions	N at bas elin e	Baseline QoL scores	FU	Reported Results		Reported p-values or Hazard Ratios with confidence intervals	
			Sexual activity: 6				Treatment-related symptoms: 0.04 Sexual function: NSS Sexual activity: NSS	symptoms: NSS Sexual function: NSS Sexual activity: NSS

NR: Not reported
NSS: Not statistically significant
AM: Active monitoring
RP: Radical prostatectomy
EBRT: External beam radiotherapy
BT: Brachytherapy