

Quality of Life During Androgen Deprivation Therapy for Prostate Cancer: A Longitudinal, Controlled Comparison

Yasmin Asvat
Brian Gonzalez
Morgan Lee
Pamela Reiersen
Charissa Hicks
Paul B. Jacobsen

H. Lee Moffitt Cancer Center
University of South Florida

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Background



- Research suggests that androgen deprivation therapy (ADT) for prostate cancer (PC) is detrimental to quality of life (QoL)
- Cross-sectional studies – adverse effects for:
 - Physical QoL
 - Fatigue
 - Urinary problems
 - Problems with sexual functioning
- Uncontrolled, longitudinal studies suggest effects worsen over time

Background – Longitudinal, controlled studies

- Smith et al., BMJ, 2009
 - Longitudinal study of QoL in ADT+, ADT-, CA-
 - Baseline, 1, 2, 3 (PC only), 5 (CA- only) years
 - Physical QoL declined over time in the ADT+ group only
 - Mental QoL remained stable over time in all groups
 - Urinary bother, Bowel bother and Sexual function worse in PC
- Alibhai et al., JCO, 2010
 - Longitudinal evaluation of QoL in ADT+, ADT-, CA-
 - Baseline, 3, 6, 12 months
 - Physical QoL declined over time in ADT+ group only
 - Mental QoL remained stable over time in all 3 groups

Background

- Limitations of existing longitudinal, controlled studies:
 - No “true” baseline assessment
 - Lack of appropriate control groups
 - Infrequent assessment of urinary and bowel problems
- Replication is important

Study Aims

- Examine changes in QoL over a 6-month period among:
 - PC patients on ADT (ADT+)
 - PC patients treated with surgery only (ADT-)
 - Non-cancer controls (CA-)
- Hypothesis
 - QoL will worsen over time in the ADT+ group only

Methods – Study Design

- Longitudinal
- 3 groups of men:
 - Diagnosed with prostate cancer undergoing ADT (ADT+)
 - Diagnosed with prostate cancer treated with surgery only (ADT-)
 - Non-cancer controls (CA-)
- Matched on:
 - Age (within 3 years)
 - Education (3 levels)
 - Time since diagnosis (ADT+ & ADT-)

Methods - Eligibility

- All participants
 - ≥ 18 years of age
 - $\geq 6^{\text{th}}$ grade education
 - Able to speak/read English
 - Able to provide informed consent
- ADT+
 - Diagnosed with non-metastatic/asymptomatic metastatic prostate cancer
 - Scheduled to be treated with ADT for at least 12 months
 - No previous ADT treatment
- ADT-
 - Diagnosed with non-metastatic prostate cancer
 - No other treatment besides a prostatectomy
 - No testosterone supplementation
- CA-
 - No history of a cancer diagnosis besides non-melanoma skin cancer
 - No testosterone supplementation

Methods – Procedures

- Recruitment:
 - Men in the ADT+ & ADT- groups were recruited at Moffitt Cancer Center and the James A. Haley VA
 - Men in the CA- group were recruited using a list of names obtained from a marketing firm
- Participants were assessed at the following time points:
 - ADT+ group: prior to beginning ADT & 6 months later
 - ADT- & CA- group: at similar 6-month intervals

Methods - Measures

- SF-12
 - Physical Component Summary (PCS)
 - Mental Component Summary (MCS)
 - 8 Subscales
- CES-D
- EPIC (Expanded Prostate Cancer Index Composite)
 - Urinary Summary Domain Score
 - Bowel Summary Domain Score

Methods – Participants

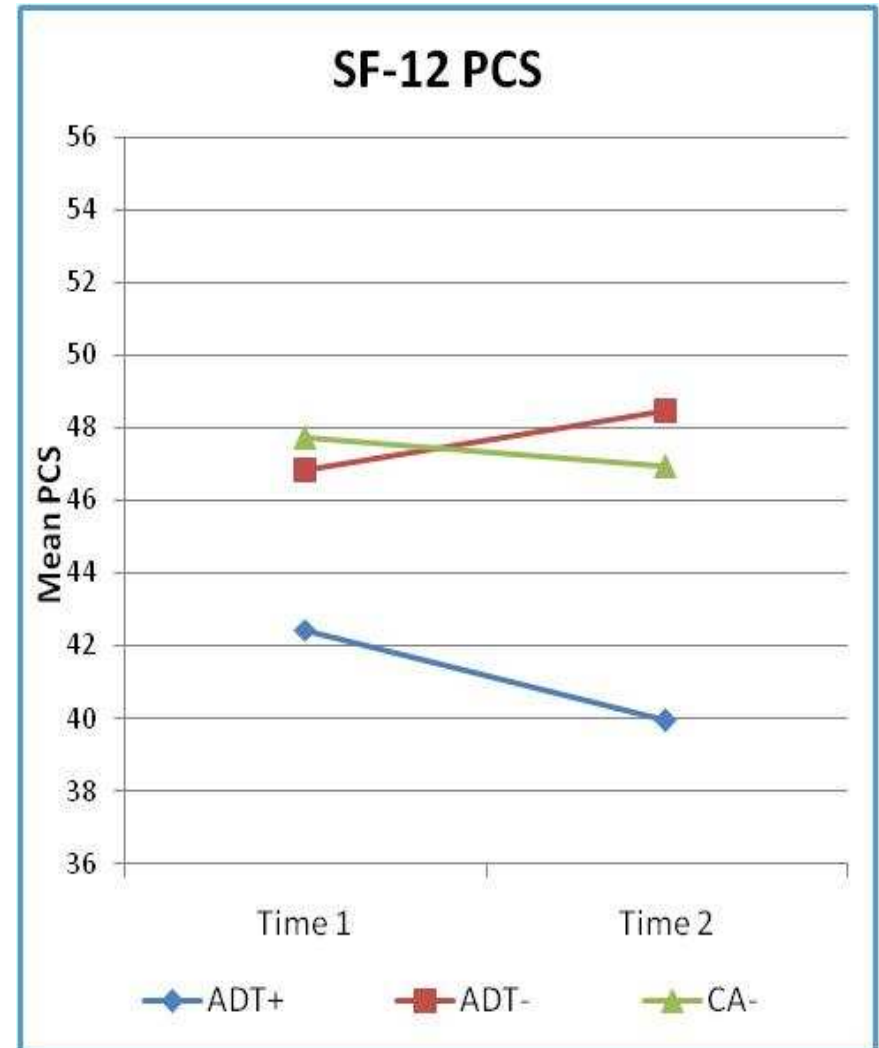
	ADT+ n = 49	ADT- n = 44	CA- n = 33
Age (years)	69	68	71
Caucasian	92%	96%	91%
Married	71%	81%	82%
College graduate	38%	42%	55%
Income \geq 40K	53%	66%	58%
Time since diagnosis (years)	3.9	5.5	n/a

Methods – Statistical Analyses

- Mixed model ANOVAs were conducted to examine changes in QoL over time

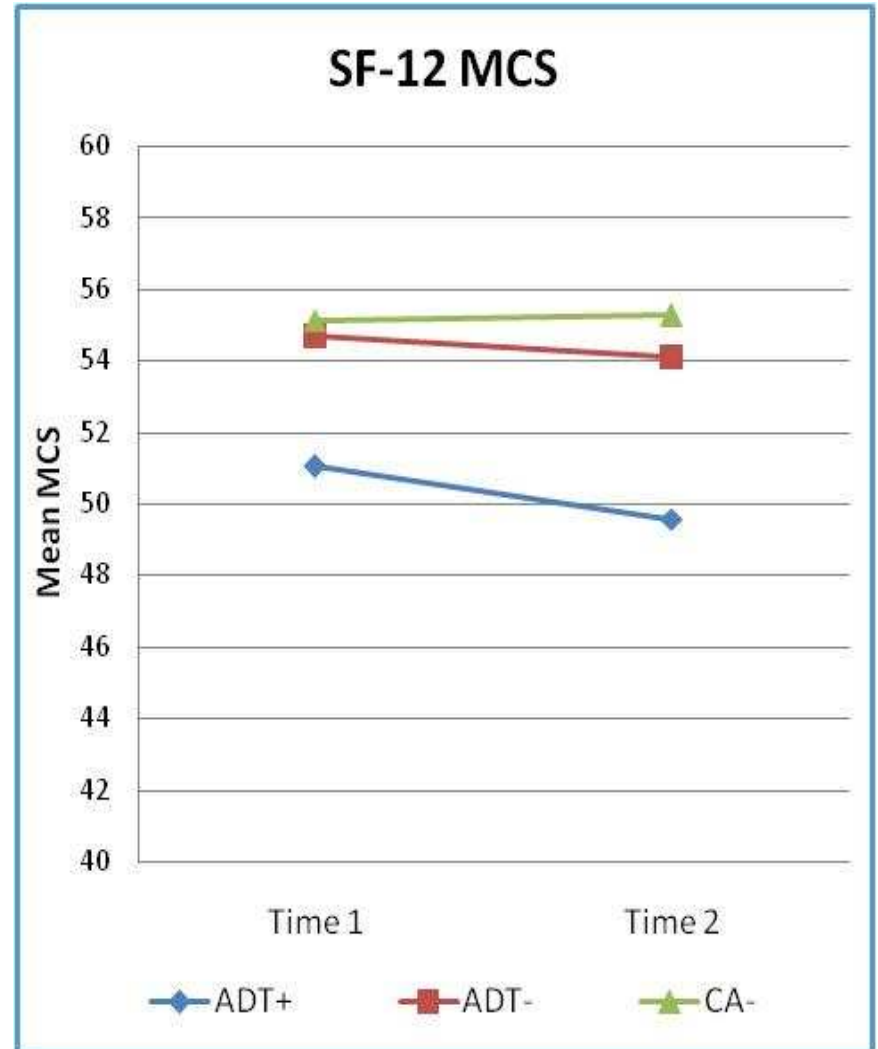
Results – SF-12 PCS

- Group x Time ($p = .03$)
- Time 1
 - ADT+ < ADT- & CA- ($p_s \leq .05$)
- Time 2
 - ADT+ < ADT- & CA- ($p_s < .001$)
- From Time 1 to Time 2
 - PCS worsened for the ADT+ group only ($p = .02$)



Results – SF-12 MCS

- No Group x Time
- Group effect ($p = .04$)
 - ADT+ group reported lower mental health QoL than ADT- ($p = .03$) and CA- ($p = .04$)

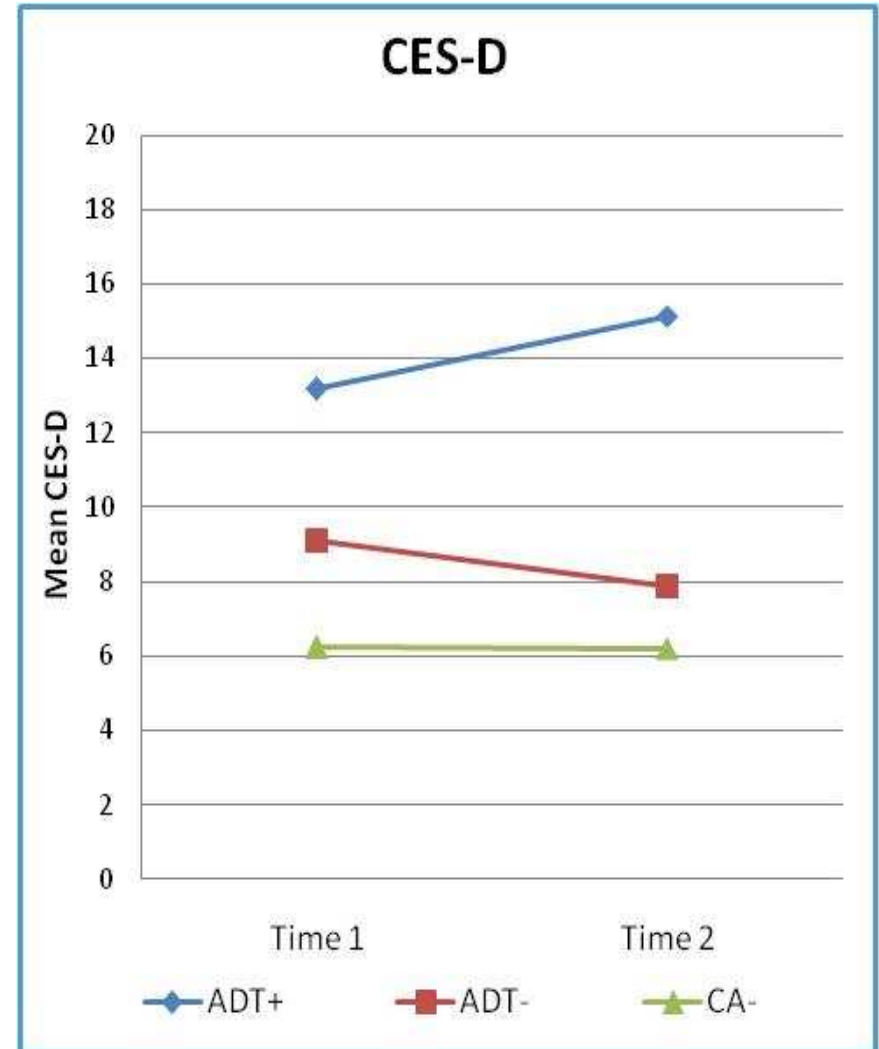


Results – SF-12 Subscales

- Group x Time ($p_s < .05$)
 - Physical Function
 - Vitality
 - Time 1: No differences
 - Time 2: ADT+ < ADT- & CA- ($p_s \leq .01$)
 - Time 1 to Time 2: Worsened for ADT+ only ($p_s \leq .01$)
- No differences
 - Bodily Pain
 - Social Function
- Group effects ($p_s \leq .01$)
 - General Health
 - Role Limitations Physical
 - Role Limitations Emotional
 - ADT+ < ADT- and CA- ($p_s < .05$)
 - Mental Health
 - ADT+ < CA- ($p = .01$)

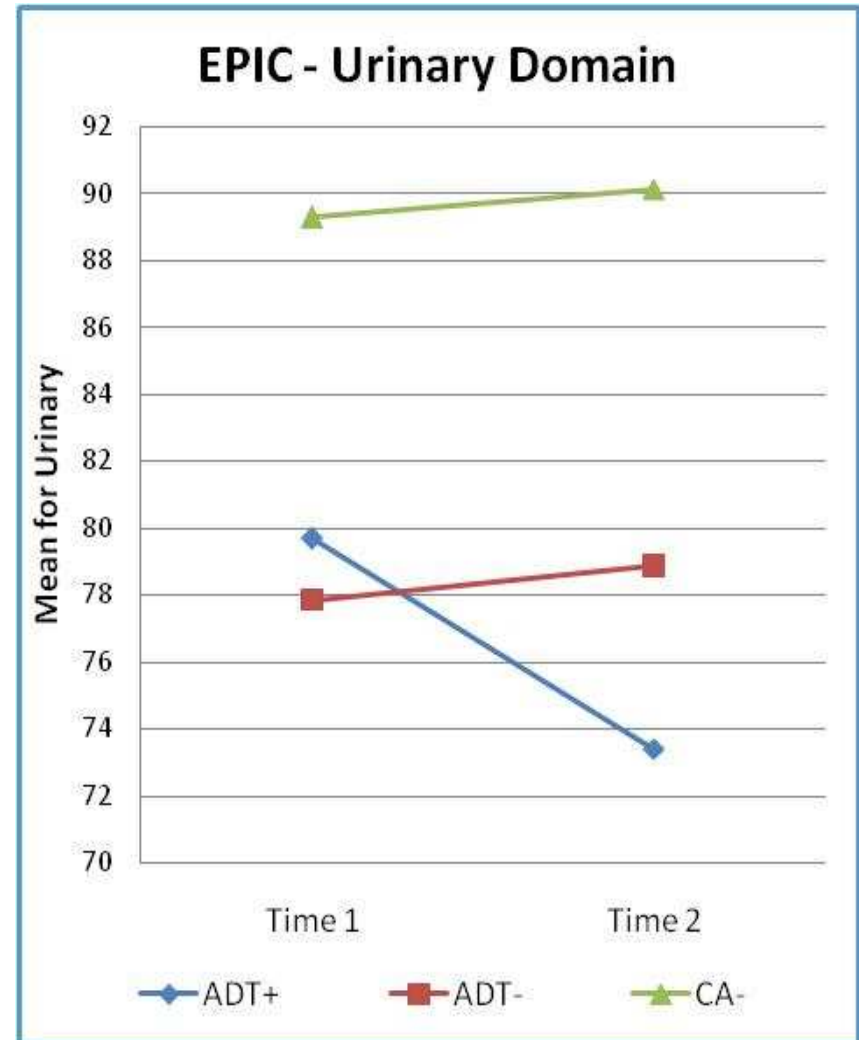
Results – CES-D

- Group x Time ($p = .02$)
- Time 1
 - ADT+ > ADT- & CA- ($p \leq .05$)
- Time 2
 - ADT+ > ADT- & CA- ($p < .01$)
- From Time 1 to Time 2
 - Depressive symptoms worsened for the ADT+ group only ($p = .01$)



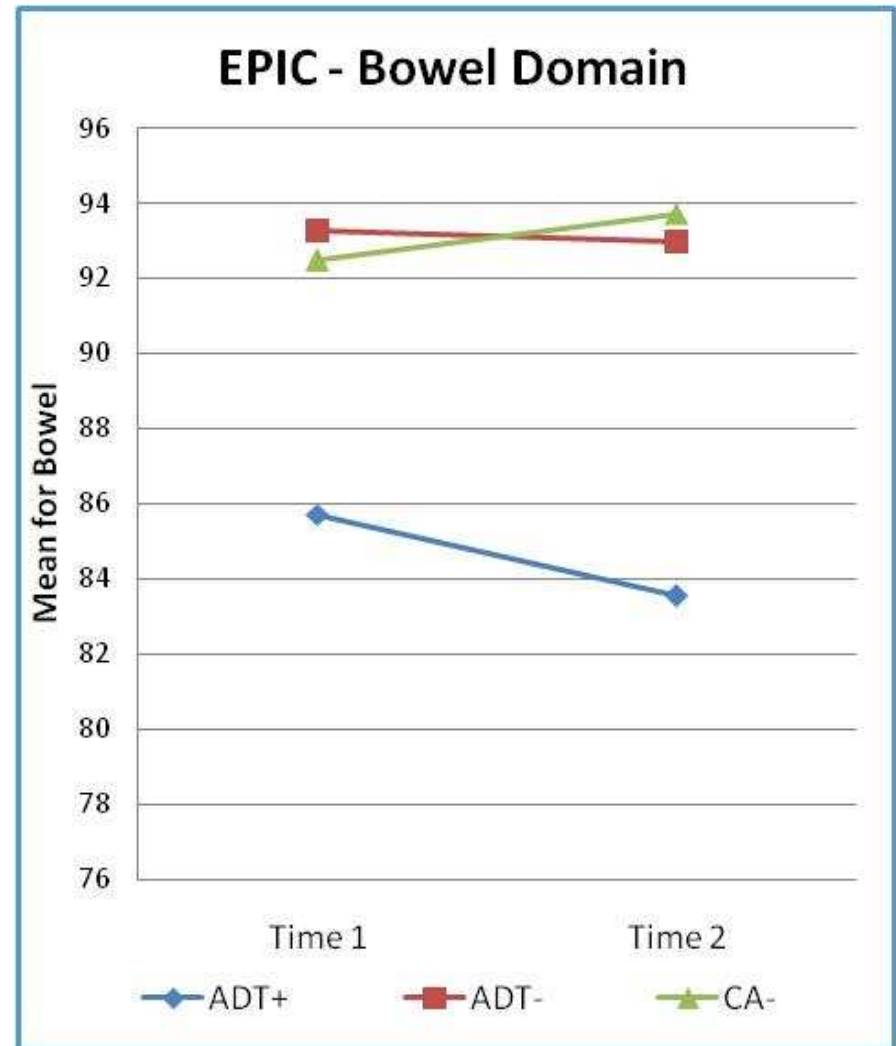
Results – EPIC Urinary Domain

- Group x Time ($p < .002$)
- Time 1
 - ADT+ and ADT- < CA- ($ps < .01$)
- Time 2
 - ADT+ and ADT- < CA- ($ps < .01$)
- From Time 1 to Time 2
 - Deficits in the urinary domain increased for the ADT+ group only ($p < .001$)



Results – EPIC Bowel Domain

- No Group x Time
- Group Effect
 - The ADT+ group reported more deficits in the bowel domain ($p < .001$).



Conclusions

- Findings generally support the hypothesis that QoL would worsen over time in the ADT+ group only
- PC patients initiating ADT are at risk for:
 - Worsening QoL across multiple domains:
 - Physical aspects of QoL
 - Depressive Symptoms
 - Urinary
 - Lower, but not worsening, QoL in terms of:
 - Mental aspects of QoL
 - Bowel

Discussion

- Future research should:
 - Determine whether declines in QoL in ADT+ patients are relatively short-term or long-term concerns
 - Identify strategies for ameliorating the detrimental effects of ADT on QoL

Discussion

- Limitations
 - Small sample size
 - Homogenous sample (race and ethnicity)
 - Limited follow-up period

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Thank you!

- Questions?