ASSOCIATION OF PRE-TREATMENT DEPRESSION WITH QUALITY OF LIFE DURING AND AFTER RADIOTHERAPY FOR PROSTATE CANCER

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November 29, 2017
Radiological Society of North America Annual Meeting
With advances in treatment effectiveness, there is the need and opportunity to focus on issues of QOL and survivorship. Quality of life (QOL) affected by many individual, disease, and treatment characteristics. Age, treatment, time in/from tx, psychosocial support, comorbidities.

Depression and anxiety are common among individuals with cancer, in general, with impact on quality of life (QOL) and mortality.

Issues of intersection among older adults.

In prostate cancer, specifically:
- Depression during treatment associated with:
  - Health-related quality of life
  - Higher health resource utilization and healthcare costs
  - Functional impairment
  - Mortality

Better understanding the longitudinal heterogeneity in psychological adjustment to cancer diagnosis and treatment may help identify valid screening practices for psychosocial intervention/support.

Christensen et al., 2009; Drageset et al., 2013; Harrington et al., 2010; Hartl et al., 2010; Kyrdalen et al., 2010; Pinquart & Duberstein, 2010; Roberts et al., 2005, 2007; Zabora et al., 2001.
Aim of the current study:
- To investigate the role of psychological state prior to treatment on the course of QOL during radiotherapy for localized non-metastatic prostate cancer

Hypotheses:
- Significant association between pre-treatment depression and QOL before, during, and after treatment
- After grouping participants into groups based on depressive symptoms (i.e., Minimal, Mild, Moderate+), we anticipated a significant between-group difference in QOL as measured pre-, mid-, and post-treatment
Methods: Survey-Based

- **Procedures**
  - Approached participants after simulation visit
  - Prospective investigation: standardized questionnaires administered pre-treatment, halfway through treatment, final day of treatment.

- **Participants, n=39**
  - Average age: 68 (SD=5.7; Range=54-81)
  - Average education: 15.5 years (SD=2.5; Range=10-20)
  - Primarily European-American (n=32, 82%) sample at this time
  - 44% (n=17) employed at outset of treatment
  - 62% (n=24) living with a partner

- **Measures**
  - Depression: Patient Health Questionnaire (PHQ-9)
    - 9 items; questions re: the past 2 weeks
  - QOL: Functional Assessment of Cancer Therapy for Prostate Cancer
    - 39 items; questions re: the past 1 week
RESULTS: BASELINE DESCRIPTIVES

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Range</th>
<th>Intercorrelations</th>
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</thead>
<tbody>
<tr>
<td>PHQ-9 (Depression, 0-27)</td>
<td>5.1</td>
<td>4.5</td>
<td>0-17</td>
<td>PWB**, SWB*, EWB**, FWB**, Pros**</td>
</tr>
<tr>
<td>Physical Well-being (0-28)</td>
<td>23.4</td>
<td>4.4</td>
<td>12-28</td>
<td>FWB**, Prostate**, PHQ**</td>
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<tr>
<td>Social Well-being (0-28)</td>
<td>20.2</td>
<td>6.2</td>
<td>6-28</td>
<td>FWB**, Prostate**, PHQ*</td>
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<tr>
<td>Emotional Well-being (0-24)</td>
<td>19.2</td>
<td>3.3</td>
<td>9-23</td>
<td>PHQ**</td>
</tr>
<tr>
<td>Functional Well-being (0-28)</td>
<td>20.6</td>
<td>5.5</td>
<td>9-27</td>
<td>PWB**, SWB*, Prostate*, PHQ**</td>
</tr>
<tr>
<td>Prostate Cancer Scale (0-48)</td>
<td>32.7</td>
<td>8.0</td>
<td>17-45</td>
<td>PWB**, SWB**, FWB*, PHQ**</td>
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<tr>
<td>FACT-P (all scales; 0-156)</td>
<td>116.2</td>
<td>20.4</td>
<td>71-149</td>
<td>EWB**, all others***</td>
</tr>
</tbody>
</table>

* p<.01  ** p<.001

- Several inter-correlations, but not all in expected/uniform ways

- We grouped participants based on PHQ-9 scores:
  - None/Minimal (n=23), w/scores of 0-4
  - Mild (n=10), w/scores of 5-9
  - Moderate or higher (n=6), w/scores 10+

- No between-group differences in age, education, ethnic identity
RESULTS: PRE, MID, POST-TREATMENT

- With all participants taken together, significant inverse correlations between treatment depression and QOL (FACT-P):
  - Pre-treatment ($r = -0.69, p < .001$)
  - Mid-treatment ($r = -0.62, p < .001$)
  - Post-treatment ($r = -0.63, p < .001$)

- QOL (FACT-P) did not significantly change over course of treatment
  - $F (1,33) = 2.55, p = 0.12$

- With participants grouped based on depressive symptoms:
  - Significant between-group difference in QOL, $F (2,33) = 16.49, p < .001$
  - The group with “Moderate or higher” depression had significantly lower QOL than did the other two groups (both $p < .001$)
  - QOL was not significantly different between the Minimal and Mild groups
QOL PRE, MID, POST TREATMENT

Depression Group
- None/Minimal
- Mild
- Moderate+

Significant b/w group difference
- Physical WB
- Social WB
- Emotional WB
- Functional WB

EWB significantly increased over time

PWB significantly decreased over time
CONCLUSIONS

- QOL during and after treatment may be affected by treatment factors, but may also be affected by factors (e.g., depressive symptoms) that existed before treatment began.

- Strong inverse correlations between pre-treatment depressive symptoms and QOL before, during, and after treatment.

- QOL characteristics of the “moderate or higher” depression group were distinct from the other two groups:
  - Other two groups did not significantly differ from one another.

- Consideration of “mild” degree of depression as reflective of preserved insight into inherently distressing circumstances?

- Potentially helpful to consider the use of clinical cut-offs (e.g., >9 on the PHQ-9) to signal a referral for psychosocial or psycho-oncologic support.
LIMITATIONS AND FUTURE DIRECTIONS

Limitations:
- Homogenous sample in ethnic identity, education, region
- Small sample size, particularly in “Moderate or higher” group
- Voluntary participation and potential self-selection bias

Future Directions:
- Investigation into other useful clinical cutoffs for the most effective allocation of resources and provision of support to individuals in this population
- Investigation into effect of perceived illness-related stigma in this and other populations affected by cancer and cancer treatment
- Better understanding of the role of religious/spiritual identity and practices in QOL
- Institutional collaboration with Movember Foundation and the TrueNTH Program
QUESTIONS/CONTACTS

- **OHSU Knight Cancer Institute**
  - [http://www.ohsu.edu/health/cancer](http://www.ohsu.edu/health/cancer)

- **Department of Radiation Medicine**
  - [www.ohsu.edu/radmedicine](http://www.ohsu.edu/radmedicine)

- **Contact for the current study**
  - walkesar@ohsu.edu

“Cure Cancer,” by Caitlyn Sparkman