Fears of Cancer Recurrence (FCR) Trajectory during Radiation Treatment and 2 month follow-up in breast cancer patients

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- Josie Cameron ²
- Carolyn Bedi ²
- Yuan Yang ¹

2nd February 2017
Outline

- Definition (Ottawa)
- How does FCR behave during Rx as well as following?
- Trajectory? Predict outcome?
- FORECAST study as a model
- Does communication influence FCR outcome?
Definition of FCR
Ottawa Colloquium: August 2015

“Fear, worry, or concern relating to the possibility that cancer will come back or progress”

Predictors and Patterns of Fear of Cancer Recurrence in Breast Cancer Survivors

Heather L. McGinty, Brent J. Small, Christine Laronga, and Paul B. Jacobsen
University of South Florida and H. Lee Moffitt Cancer Center & Research Institute

FEAR OF CANCER RECURRENCE OVER TIME

Figure 1. Two-class growth mixture model of worry and anxiety.
How does Treatment influence FCR?
## Meta-Analysis: radiotherapy with FCR

<table>
<thead>
<tr>
<th>Group by Breast vs Other</th>
<th>Author</th>
<th>Statistics for each study</th>
<th>Correlation and 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast</td>
<td>Hartl</td>
<td>Correlation: 0.019</td>
<td>0.318</td>
</tr>
<tr>
<td>Breast</td>
<td>Janz</td>
<td>Correlation: 0.038</td>
<td>3.293</td>
</tr>
<tr>
<td>Breast</td>
<td>Liu</td>
<td>Correlation: 0.007</td>
<td>0.164</td>
</tr>
<tr>
<td>Breast</td>
<td>Koch</td>
<td>Correlation: -0.090</td>
<td>-2.409</td>
</tr>
<tr>
<td>Breast</td>
<td>Tewari</td>
<td>Correlation: 0.104</td>
<td>2.054</td>
</tr>
<tr>
<td>Breast</td>
<td></td>
<td>Correlation: 0.014</td>
<td>0.616</td>
</tr>
<tr>
<td>Other</td>
<td>Humphris</td>
<td>Correlation: 0.080</td>
<td>0.735</td>
</tr>
<tr>
<td>Other</td>
<td>Deimling</td>
<td>Correlation: 0.130</td>
<td>2.331</td>
</tr>
<tr>
<td>Other</td>
<td>Simard</td>
<td>Correlation: 0.120</td>
<td>2.946</td>
</tr>
<tr>
<td>Other</td>
<td>Skaaki</td>
<td>Correlation: 0.011</td>
<td>0.209</td>
</tr>
<tr>
<td>Other</td>
<td>Bergman</td>
<td>Correlation: 0.004</td>
<td>0.037</td>
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<tr>
<td>Other</td>
<td>Rogers 2010</td>
<td>Correlation: 0.016</td>
<td>0.176</td>
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<tr>
<td>Other</td>
<td>Sung</td>
<td>Correlation: 0.043</td>
<td>0.816</td>
</tr>
<tr>
<td>Other</td>
<td>Ghazali</td>
<td>Correlation: 0.105</td>
<td>1.368</td>
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<tr>
<td>Other</td>
<td>Rogers 2015</td>
<td>Correlation: 0.145</td>
<td>3.295</td>
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<tr>
<td>Other</td>
<td>Van de Wal</td>
<td>Correlation: 0.119</td>
<td>2.006</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>Correlation: 0.089</td>
<td>3.959</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td>Correlation: 0.053</td>
<td>3.275</td>
</tr>
</tbody>
</table>

Correlation and 95% CI: -0.25, 0, 0.25
Meta-Analysis: radiotherapy with FCR

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<thead>
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<th>Statistics</th>
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<td></td>
<td>Correlation</td>
</tr>
<tr>
<td>Overall</td>
<td>0.053</td>
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</tbody>
</table>

Yuan, Cameron, Humphris (2016) The relationship between cancer patient's fear of recurrence and radiotherapy: a systematic review and meta-analysis
Psycho-oncology 12th July DOI 10.1002/pon.4224
Investigate dynamics of FCR

Support Care Cancer
DOI 10.1007/s00520-014-2513-8

ORIGINAL ARTICLE

Trajectories of fear of recurrence in women with breast cancer

Laura B. Dunn · Dale J. Langford · Steven M. Paul · Molly B. Berman · Dianne M. Shumay · Kord Kober · John D. Merriman · Claudia West · John M. Neuhaus · Christine Miaskowski

Received: 27 April 2014 / Accepted: 10 November 2014
© Springer-Verlag Berlin Heidelberg 2014
Cancer FoR Trajectories:
10 random LOWESS graphs
Cancer FCR Trajectories:
10 random LOWESS graphs
ForeCast Study

- Dunn *et al.* study over 6 months with 7 assessments of FCR
- They found small negative trajectory but near end found about 6/10 patients increased at the end of the assessment period
- Prediction that trajectory of FCR is positive over time due to increase in symptoms/side effects
Aim

- To investigate the trajectory of Fears of Cancer Recurrence through radiotherapy of breast cancer patients

Objectives

- Is baseline level of FCR associated to clinical or demographic variables or trajectory of FCR?
- Does treatment type relate to trajectory?
- Is communication during review appointments linked to trajectory?
ForeCast Study

- Two, three, four field techniques included plus DCIS
- Different diary log books, 15#, 19# (incl boost), 25#
- Review consultations audio-taped with studio quality recorder
- Scored using VR-CoDES coding system for emotional talk and clinician responding
- Weekly ‘snap-shot’ Questionnaires –
  - PANAS,
  - FCR7,
  - EQ-5D
Exceptions

- Male
- People requiring translators
- Unable to communicate well in English
- Hearing compromised
ForeCast Study

- Data and audio analyses @St Andrews Med School
- RA organised follow up phone call post XRT
<table>
<thead>
<tr>
<th>To (CT scan)</th>
<th>T₁ (1ˢᵗ session)</th>
<th>T₂-T₄ (RT)</th>
<th>T₄ (last session)</th>
<th>T₅ (6-8 weeks after T₄)</th>
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</thead>
<tbody>
<tr>
<td>Initial meeting + info sheet</td>
<td>Consent form</td>
<td>Daily Diary</td>
<td>PANAS</td>
<td>FCR7 EQ-5D-3L (by telephone)</td>
</tr>
<tr>
<td></td>
<td>Demographic Info</td>
<td>FCR7</td>
<td>FCR7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FCR7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PANAS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weekly Audiotape: specialist radiographer-patient review</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Results

- Restricted to trajectory findings
- Detailed results sent to journal for publication and omitted from this general slide presentation
How to study the trajectory of FCR?

- Use the weekly ‘snaps shots’ (7 item scales)
- Design two hypothetical (latent) variables:
  - Intercept
  - Slope
Routine = 0
Booster = 1

Tx

FoR1 → Intercept
FoR2 → Intercept
FoR3 → Intercept
FoR4 → Intercept

1 → Intercept
1 → Intercept
1 → Intercept
1 → Intercept

1 → Slope
1 → Slope
1 → Slope
1 → Slope

2 → Slope
3 → Slope
How does the communication process influence the outcome?
Verona CoDES

- System of coding:
  - patient emotional talk (cues and concerns)
  - & health care provider’s response
- Use specialist software to obtain ‘time stamps’
  - Observer XT™
Acknowledgements

- Participants
- Breast Cancer Now
- MSc Students:
  - Luke Barracliffe,
  - Despina Nikandrou