Symptoms of seasonal affective disorder in women diagnosed with early breast cancer receiving radiotherapy

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Background

- ❖ Seasonal affective disorder (SAD) is characterized by physiological and psychiatric abnormalities in response to changes in seasonal weather patterns and light exposure.
- ❖ Symptoms typically arise in autumn and winter with remission occurring in the spring and summer months¹.
- ❖ Few studies to date have evaluated symptoms of SAD in the context of cancer diagnosis, treatment and survivorship.

Materials and Methods

- ❖ Population: Patients at the Sunnybrook Cancer Center who were diagnosed with non-metastatic breast cancer from 2011-2017 who had >1 Edmonton Symptom Assessment Scale (ESAS) completed pre- and post-RT
- ❖ Available patient databases and chart review yielded data on systemic treatment (chemo/hormone), radiation, disease characteristics and patient demographics
- ❖ Patients receiving chemotherapy were not included

Table 2: Comparisons of ESAS Scores before/during/after RT Group A (Spring/Summer) vs. Group B (Winter/Autumn)

	Coefficient*	p-value
Before RT		
Depression		
Group A vs. Group B	0.117	0.5755
Anxiety		
Group A vs. Group B	-0.108	0.5331
Overall QOL		
Group A vs. Group B	-0.356	0.0301
During RT		
Depression		
Group A vs. Group B	-0.144	0.6223
Anxiety		
Group A vs. Group B	-0.251	0.3625
Overall QOL		
Group A vs. Group B	0.006	0.9747
After RT		
Depression		
Group A vs. Group B	-0.073	0.7243
Anxiety		
Group A vs. Group B	-0.097	0.5924
Overall QOL		
Group A vs. Group B	-0.013	0.9312

*Note: Positive coefficients indicate higher or increased symptom severities with larger magnitudes indicating greater effect sizes.

Results

- ❖ From total population of 1224 patients this study included: Group A (n=84) & Group B (n=102) (table 1)

Table 1: Timelines for ESAS entry and group inclusion

	Group A: Spring and Summer N=84	Group B: Autumn and Winter N=102
Baseline ESAS Entry (prior to RT)	April 1 st - Aug 31 st	Nov 1 st – March 15 th
1 st ESAS Entry post-RT	April 1 st – Oct 31 st	Nov 1 st – May 15 th

- ❖ Patients in Group A more likely to have better overall quality of life (QOL) before RT (p=0.030) (Table 2)
- ❖ Significant differences on absolute score changes (Pre to Post RT) in ESAS depression (p=0.027), anxiety (p=0.008) and overall QOL (p<0.0001) scores between the two groups (Table 3)
- ❖ Group B patients have significantly better improvement on ESAS depression, anxiety and overall QOL scores Pre to Post RT (Table 3)

Discussion/Conclusions

- ❖ Study Limitations
 - Retrospective design
 - Confounding comorbidities/tx factors
 - Small sample size and incomplete data
- ❖ Conclusions
 - Patients receiving RT in the winter had lower QOL at baseline (pre RT)
 - Patients receiving RT in the summer had worse symptom trajectories across all three domains of anxiety, depression and QOL

Table 3: Comparisons of change in ESAS scores between Group A (Summer) vs. Group B (Winter and Autumn)

	Coefficient*	p-value
Depression Changed Score		
Baseline Depression Score	-0.2079	0.0178
Group A vs. Group B	0.5047	0.0267
Anxiety Changed Score		
Baseline Anxiety Score	-0.3848	<.0001
Group A vs. Group B	0.6402	0.0079
Overall QOL Changed Score		
Baseline Overall QOL Score	-0.3529	<.0001
Group A vs. Group B	1.4312	<.0001

References

1. Rohan K, Roecklein K, Haaga D. Biological and Psychological Mechanisms of Seasonal Affective Disorder: A Review and Integration. Curr Psychiatry Rev 2009;5(1):37-47.

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