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Sexual Function In Reproductive-Aged Women Following Radiotherapy: A Cross Sectional Study

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Background

Radiation therapy (RT) is an important treatment modality for many different types of cancer. As cancer survival rates increase with improvements in diagnostic testing, early detection, and innovations in treatment options, there has been increasing focus on quality of life outcomes for patients, including the long-term sexual health consequences of RT[1,2]. Whilst female sexual dysfunction post-RT has been previously described, much of the literature is focused on older, often postmenopausal, women[3]; and neglects the experiences of younger populations. For younger cancer patients, survivorship issues and quality of life can be of particular importance given their potentially longer post-treatment life expectancy. In this context, it is important to differentiate the changes in sexual functioning faced by younger women post-RT, as compared to their older counterparts.

Objective

Our study aims to describe the changes in sexual functioning following radiotherapy among women of a reproductive age.

Materials and Methods

This study was a cross-sectional analysis of reproductive-aged women who underwent either abdomino-pelvic or total body irradiation. Given that RT is relatively uncommon in young women, our inclusion criteria was intentionally broad to maximize our cohort size, with all women eligible to participate regardless of cancer type or time since RT. Exclusion criteria included patients who had not yet experienced their sexual debut. Using Fallowfield's Sexual Activity Questionnaire (FSAQ), a validated and reliable tool for assessing female sexual function[4], information on sexual frequency, and measurements of sexual pleasure, discomfort and habit were collected from eligible participants. These latter measurements were assessed by scoring responses from the questionnaire's Likert scale, then calculating mean, median and standard deviation values for the entire cohort. A higher pleasure score (range 0-18) represented more pleasure from sexual activity, whilst a lower discomfort score (range 0-6) represented more discomfort. A higher habit score (range 0-3) represented increased frequency of sexual activity compared to the month previous. This data was then compared to previously published responses from healthy women of comparable ages. Two sources of healthy controls were used: a Norwegian-based population sample [5] – Control Group A; and an UK-based study [6] – Control Group B. For our analysis, p-values were generated using Student's T-tests for comparison of means, and Chi-square tests for comparison of proportions.

Results

The responses of 24 participants were used in our analysis; however, where indicated (due to individual missing values) only 22 participant responses were used. The mean age of our study population was 33.7 years old (range 22-46). The mean age of our controls were 39.4 years (range 35-44) and 28.31 years (range 18-58) respectively for Control Group A and Control Group B.

Our findings suggest that whilst the frequency of sexual activity for young women after RT is significantly reduced compared to their similarly-aged counterparts, they experience similar levels of pleasure and their habitual sexual activity is comparable. In terms of discomfort during sexual activity, our study population had significantly higher levels compared to their Norwegian counterparts, but similar results to the UK controls. This data represents a crucial first step in understanding the consequences of early RT on female sexual health.

Table 1: Frequency of Sexual Activity

Monthly Frequency of Sexual Activity n (%)	Radiation n = 24	Control Group A (Vistad 2007) n = 170	p-value
≥5	2 (8.3%)	85 (50%)	0.001
3-4	10 (41.7%)	47 (28%)	0.16
1-2	10 (41.7%)	36 (21%)	0.027
0	2 (8.3%)	2 (1%)	0.021

Table 2: Pleasure, Discomfort and Habit Scores

	Radiation	Control Group A (Vistad 2007) n = 170		Control Group B (Hopkins 2014) n = 162	
Pleasure	n = 22*	p-value			p-value
Mean (SD)	13.1 (4.4)	11.9 (4.4)	0.12		
Median	14			16	>0.5
Discomfort	n = 22*				
Mean (SD)	3.4 (2)	2.5 (1.1)	<0.001		
Median	4			6	>0.5
Habit	n = 24				
Mean (SD)	0.7 (0.8)	0.9 (0.6)	0.93		
Median	1			1	>0.5

*Due to missing values; SD = standard deviation

Conclusions

The importance that sexual health plays in post-treatment quality of life for reproductive aged women has been largely unexplored in the literature. At an age when most women perceive that they should be at their sexual peak[7,8], the effect of radiation on their sexual organs can be both physically and psychologically distressing. However, despite some negative changes in terms of discomfort and sexual frequency, our small study illustrates a largely positive outlook with important aspects of sexual function preserved in our study population when compared to healthy controls. This information can assist with counseling patients regarding survivorship issues, within the broader context of management options.

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