FACTORS RELATED WITH FATIGUE IN PATIENTS UNDERGOING RADIOTHERAPY

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Conclusions and Implications

Almost three quarters of patients during cancer-related radiotherapy experienced fatigue. Patients who were younger, were single or widow/widower, had any other disease, and perceived six symptoms or more except for fatigue were more likely to experience fatigue. Patients with fatigue were less physically active and experienced worse quality of life than other patients. The subgroups of patients with greater likelihood to experience fatigue might need special attention and care to reduce symptom burden and improve physical activity level and quality of life.

Introduction and Purpose

Physical activity has been seen to reduce fatigue but little is known regarding if patients with fatigue adhere to physical activity recommendations^a during routine radiotherapy practice. The purpose of this study was to investigate fatigue and explore factors related to fatigue in patients undergoing radiotherapy for cancer.

Methods

Radiotherapy nurses consequently screened patients undergoing radiotherapy at four Swedish oncology departments during one cross-sectional day. In this study 458 patients, 52% women, mean age 65 years, with breast (38%), prostate (32%) or other cancer types (30%) answered a questionnaire after receiving mean 33 ±17 Gy of fractionated radiotherapy (Table 1).

The questionnaire included patient demographic, clinical data regarding the cancer and cancer therapy, current symptoms (the Memorial Symptom Assessment Scale, MSAS), quality of life (QoL) (Functional Assessment of Cancer Therapy-General, FACT-G), level of perceived healthy balance between rest and activity, and physical activity. Fatigue was assessed using an 11-point scale graded 0; never, no fatigue to 10; fatigue present all the time.

Figure 1. Proportion (%) of subgroups of patients experiencing fatigue during cancer-related radiotherapy. RR; relative risk, 95% CI; 95% confidence interval

Figure 2. Physical activity level^a, healthy balance and quality of life in patients with and without fatigue during radiotherapy

Table 1. Demographic and other characteristics of patients with cancer receiving radiotherapy	
Marital status, n=457	
Married or living together	342 (75)
Living alone; have a partner	23 (5)
Living alone; single or widow/widower	93 (20)
Type of Cancer, n=449	
Breast cancer	171 (38)
Prostate cancer	145 (32)
Head/neck or brain cancer	57 (13)
Colon, rectal, anal, or gynecological cancer	43 (10)
Lymphoma or cancer in connective tissues	19 (4)
Lung cancer	15 (3)
Diagnosed with any co-morbidity, Yes (%), n=424	
	187 (44)
Accumulated dose (Gray), mean ± SD, n=450	
	33 ±17
Concomitant cancer therapies during/prior to external radiotherapy¹	
Tumor surgery, n=450	278 (62)
Chemotherapy, n=442	166 (38)
Intracavitary brachytherapy, n=442	52 (12)
Six or more symptoms other than lack of energy (MSAS), n=403	
	270 (66)
Physical activity	
Adhered to recommended physical activity level ^a the year preceding the cancer disease, n=447	331 (74)
Adhered to recommended physical activity level ^a during radiotherapy, n=451	208 (47)

Number (n) and percent (%) is presented unless otherwise stated. ¹All patients received external radiotherapy. MSAS; the Memorial Symptom Assessment Scale

Results

Of 458 patients delivering data, 321 (72%) reported experience of fatigue. Median (25th, 75th percentiles) fatigue score was 4 (3, 7).

Compared to other patients, the patients more likely to experience fatigue (Figure 1):

- were younger, of age <45 years (p<0.01),
- were single or widow/widower (p<0.01),
- received radiotherapy to thorax, mediastinum or lung (p<0.02),
- had an accumulated radiotherapy dose of >44 Gy (p<0.01),
- received concomitant chemotherapy (p<0.04),
- had any other disease beside cancer (p<0.001)
- experienced ≥six symptoms other than lack of energy on MSAS (p<0.001)

Patients with fatigue compared to non-fatigue patients (Figure 2):

- were less likely to adhere to physical activity recommendations^a 39% vs. 67% (p<0.01),
- more seldom perceived a healthy balance between rest and activity 33% vs. 75% (p<0.01),
- reported worse QoL; FACT-G mean total score 78 ±15 vs. 92 ±11 (p<0.001)

^a Summed weekly physical activity of at least 150 minutes of moderate intensity activity or 75 minutes of vigorous activity. The Swedish National Board of Health and Welfare, 2011.