

Determinants of Overall Quality of Life in Cancer Patients Selected for High- Dose Radiotherapy

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Fatigue in cancer

- **78% of cancer patients experience fatigue at some stage (Vogelzang 1997)**
- **Patients feel that fatigue affects their daily lives more adversely than pain (61% vs. 19%)**
- **But: little information about relative contribution of fatigue to overall quality-of-life (QoL), compared to other QoL domains.**



Aim

To investigate the relative impact of four QoL domains on overall QoL in cancer patients preceding radiotherapy

Somatic – Psychological – Social – Fatigue



Patients and Methods

- 64 patients selected for high-dose radiotherapy
- Tumour type: lung and breast cancer (*high resp. low fatigue*)
- WHO score: 0-2
- Demographic profile (age, gender, body mass index, tumour stage, prior treatment)
- EORTC QLQ-C30 questionnaire



Data analysis

Three steps:

- Correlations between individual QLQ-C30 subscales and overall QoL
- Then, for subscales explaining $\geq 20\%$ of overall QoL:
 - Relative contribution of subscales per domain
 - Relative contribution of subscales from all domains combined



Results: Study population

- 29 lung cancer (45% female, age 68.2 ± 10.8 ys)
- 35 breast cancer (100% female, 60.2 ± 12.4 ys)
- WHO score 0-1: lung 70%, breast 100%
- Prior chemotherapy: lung 52%, breast 26%



Study population: QLQ-C30 scores

Impaired QoL (especially lung) on overall QoL and the following subscales:

- **Functional subscales:** Physical, Role and Emotional functioning
- **Symptom subscales:** Fatigue, Dyspnoea, Insomnia and Appetite loss



Subscales significantly correlated with overall QoL

- **Fatigue:** $r = -0.76$ ($p < 0.001$)
- **Somatic domain:**
Physical functioning, Nausea/vomiting, Loss of appetite, Insomnia, Dyspnoea, Pain, Constipation ($r = -0.55$ to -0.31 , $p < 0.01$)
- **Psychological domain:**
Emotional functioning, Cognitive functioning ($r = 0.52$ to 0.44 , $p < 0.001$)
- **Social domain:**
Role functioning, social functioning ($r = 0.52$ to 0.51)



Subscales significantly correlated with overall QoL

Domain	Subscale	Correlation (p-value)
Fatigue	Fatigue	-0.76 (<0.001)
Somatic	Physical functioning	-0.55 (<0.001)
	Nausea and vomiting	-0.45 (<0.001)
	Appetite loss	-0.45 (<0.001)
	Dyspnoea	-0.42 (0.001)
	Pain	-0.36 (0.004)
	Constipation	-0.31 (0.01)
Psychological	Emotional functioning	0.52 (<0.001)
	Cognitive functioning	0.44 (<0.001)
	Insomnia	-0.42 (0.001)
	Financial difficulties	-0.28 (0.03)
Social	Social functioning	0.51 (<0.001)
	Role functioning	0.52 (<0.001)

Contribution of subscales within different domains to overall QoL

Domain	Univariate R ²	Multivariate (R ² = 0.57) Stand. regression coeff.
Fatigue	0.56 (p<0.001)	Rc = 0.57 (p<0.001)
Somatic	0.43 (p<0.001)	<i>Only other subscale contributing to QoL:</i> Nausea and vomiting Rc = 0.22 (p<0.05)
Psychological	0.28 (p<0.001)	
Social	0.32 (p<0.001)	

Conclusion

- Fatigue appears to be **by far the predominant determinant of overall QoL** in lung and breast cancer patients preceding high-dose radiotherapy:
- Fatigue alone explained 56% of the variance (R^2) in overall QoL ($p < 0.001$);
- In addition to fatigue, only Nausea and vomiting contributed independently to overall QoL;
- The explained variance (R^2) in overall QoL by fatigue was not improved by adding subscales from other QoL domains (physical, psychological, social) to the model.

