

Age-Associated Differences in Fatigue Among Patients with Cancer



Butt Z, Rao AV, Lai JS, Abernethy AP, Rosenbloom SK, Cella D. Age-Associated Differences in Fatigue Among Patients with Cancer. *J Pain Symptom Manage*. 2010 Aug;40(2):217-23. Epub 2010 Jun 11.

Clinical Bottom Line

- Older adults, whether or not they had a cancer diagnosis, reported more fatigue than younger adults. These differences may be explained, in part, by hemoglobin level.

Introduction

- Fatigue is a common and prevalent symptom among cancer patients and be due to a variety of causes.
- It has been noted that fatigue has a prevalence of 60-90% among cancer patients.
- However, cancer-related fatigue (CRF) is not well understood.
- One possible cause is anemia, which results in symptoms that can mimic fatigue such as pallor, weakness, dyspnea, etc. Quality of life (QOL) can be improved among these patients with appropriate evaluation and treatment.
- Further, little data is available for assessment and guidance of cancer patients with CRF.

Objectives

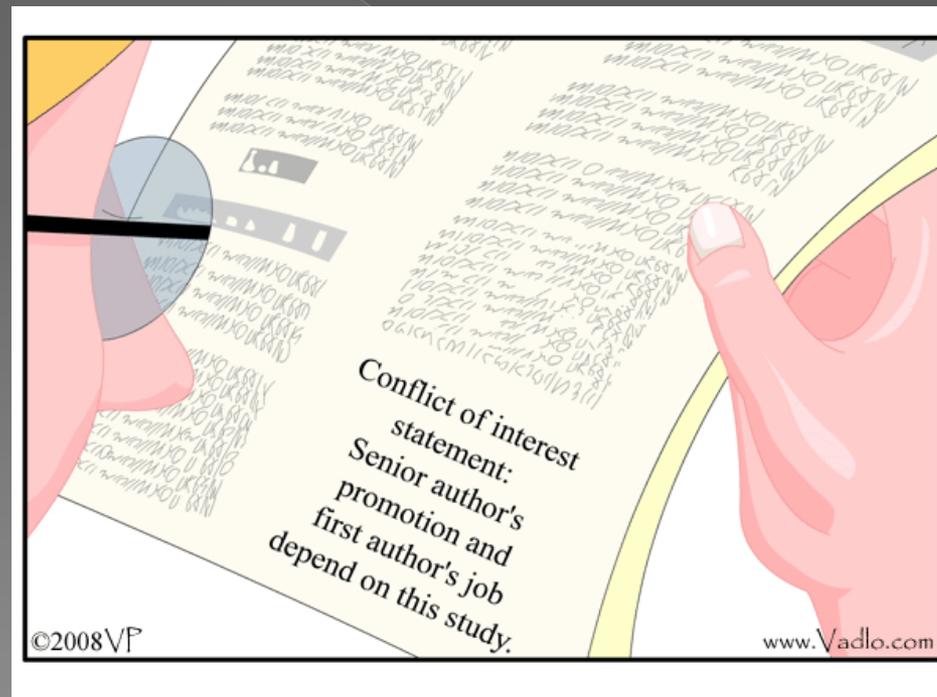
- Cross-sectional data sets used to investigate whether fatigue varied systematically as a function of both age and diagnosis.
- It was thought that cancer patients would report more fatigue than the general population and that this difference would be pronounced for the older sample.
- Hemoglobin values were available for a subset of patients, and it was hypothesized that differences in fatigue may be at least partly explained by this important clinical variable.

Level of Evidence:

- 1 (cross sectional analysis of randomized control trials.)
- Definition: Cross sectional analysis: a class of research methods that involve observation of all of a population, or a representative subset, at a defined time.

Source of Funding

- NIH R01 CA 60068, National Center for Research Resources, NIH grant UL1RR025741



Study Design

- Multiple randomized control trials.
- The first data set consisted of a large sample of individuals from the general population
 - > Patients randomly drawn to complete a series of questionnaires from more than 100,000 individuals enrolled in an Internet-based survey panel.
- Data from several mixed-diagnosis cancer samples comprised the second data set.
 - > In this second data set, patients were recruited from Chicago-area oncology clinics for studies on health-related QOL.
 - > The institutional review board (IRB) at all five clinics had approved the present study before patients were approached

Interventions

- All participants of the studies completed the Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F) subscale.
- The FACIT-F is a 13-item scale that asks respondents to rate statements regarding their fatigue experience and its impact on their daily lives.
 - Sample items include “I feel fatigued,” “I feel weak all over,” and “I feel listless.”

Participants

- 1075 random people from general populations, as well 738 mixed cancer patients, these patients were recruited from Chicago area oncology clinics and received some treatment for their cancer.

Inclusion Criteria

- For the general population there was minimal inclusion criteria
- However for the cancer patients, based on prior articles with the initial data sets some of the inclusion criteria included that patients be
 - > 18 years or older;
 - > At least 1 month post the diagnosis of cancer
 - > Have a current hemoglobin level at or below 11.0 g/dL.
 - > Able to speak and read English
 - > For another they had to have a nonmyeloid malignancy and a Hgb level > 11.0 g/dL, and they had to be receiving concomitant chemotherapy, have a life expectancy > 6 months, and be able to understand and give informed consent.

Exclusion Criteria

- In the general population there was minimal if no exclusion criteria
- For the cancer patients there was a variety of exclusion criteria that the authors noted including:
 - > Receiving cytotoxic chemotherapy or surgery either within the past week or expected within 1 week
 - > Currently receiving radiation therapy
 - > Having received either a blood transfusion or growth factor injection 3 days prior to data collection
 - > Anticipating transfusion or a growth factor injection within one week after baseline data
 - > Brain metastasis
 - > Pregnancy
 - > Patients were not included in the study if they had uncontrolled hypertension, known hypersensitivity to mammalian cell-derived products, anemia due to factors other than cancer/chemotherapy, or prior Epoetin therapy or if they were candidates for bone marrow transplantation who were receiving peripheral blood progenitor cell therapy, and
 - > Patients who had had acute major infection or bleeding within one month,
 - > Radiotherapy or allogeneic blood transfusion within 14 days,
 - > Severe illness or injury within seven days of study entry or who had undergone myeloablative chemotherapy were excluded.

Primary Outcome Measures

- Fatigue; as measured by the Functional Assessment of Chronic Illness Therapy-Fatigue subscale.

Secondary Outcome Measures

- None, all subjects evaluated for fatigue based upon the FACIT survey.

Analysis

- Independent sample t-tests and chi-square tests were used to make comparisons between the general population and patient groups insofar as sociodemographic and clinical comparisons were concerned.
- Statistical significance set to $P < 0.05$

Results

○ Sample Characteristics:

- > General population sample: 45.9 +/- 16.6 years, 51% female, 84% Caucasian
- > Cancer patients: 58.7 +/- 13.7 years, 64% female, 88% Caucasian
- > Breast and colorectal most common tumor types.
- > ***Patients older and more likely to be female in cancer group.

Results

- Fatigue:
 - > Cancer patients reported more fatigue (FACIT-F subscale = 36.9 +/- 11.4) than general population (46.6 +/- 7.2)
 - > A mean comparison of fatigue by age divided by decade was conducted
 - Confirmed association of fatigue with age
 - > Considered independently, diagnosis status and age were associated with fatigue
 - Cancer sample: Statistically significant association (F[6,719] = 2.56, P<.02)
 - General population: Nonsignificant association (F[6,1056] = 2.03, P=0.06)
 - > ***NO support for a sample-age interaction (F[6,1797] = 0.98, P=0.44)***
 - > In a nutshell, this demonstrates that there is no compound effect of a cancer diagnosis on age related fatigue or vice versa.

Results

○ Hemoglobin

- > Study also assessed level of anemia in cancer patients as one possible cause for fatigue in these patients.
- > Hgb values shown to be “modestly” associated with FACIT-F scores
 - (r=0.24, p=0.001)

Adverse Events

- None reported, patients apparently not followed and reassessed past the initial survey.

Limitations

- Limited age range, does not adequately assess fatigue in the very young or patients over age 80 (n = 80).
- No covariant factors other than anemia considered.
- No tracking of changes in fatigue over time, each study participant only surveyed once.
- No accounting for the severity of the cancer treatment regimen employed in the case of each study participant.