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The relationship of self-rated health with functional status, toxicity and mortality: Results of a prospective pilot study of older patients with newly-diagnosed cancer

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ABSTRACT

Objectives: To determine the association between self-rated health (SRH) and functional status, comorbidity, toxicity of treatment and mortality in older patients with newly-diagnosed cancer.

Materials and Methods: Patients aged 65 and over, newly diagnosed were recruited at the Jewish General Hospital, Montreal, Canada. SRH and functional status [instrumental activities of daily living (IADL), basic activities of daily living (ADL), Eastern Cooperative Oncology Group performance status (ECOG PS), frailty markers and number of comorbid conditions] were evaluated prior to the start of treatment, and at 3, 6 and 12 months (SRH only). Treatment toxicity and mortality data were abstracted from the chart. Logistic regression was also used to examine the relationship between functional status, comorbidity and SRH at baseline. Logistic and Cox regression were used to examine the association between baseline SRH and treatment toxicity/time to death.

Results: There were 112 participants enrolled on this study (median age 74.1). At baseline, 74 patients (66.1%) had a good SRH and 38 patients (33.9%) had poor SRH. Only an increasing number of comorbid conditions was associated with poor SRH at baseline in both univariate and multivariable analysis. We found no association between SRH and toxicity or mortality.

Conclusion: A substantial proportion had poor SRH prior to and during cancer treatment. An increasing number of comorbidities was associated with poor SRH at baseline. SRH did not predict toxicity or mortality. Attention to comorbid conditions in older patients with cancer is warranted considering their impact on SRH in this population.

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1. Introduction

In the general older population, self-rated health (SRH) has been shown to be a strong predictor of decline in functioning and of mortality independent of more objective measures of health. The single-item SRH question can provide a clinician with a quick tool to evaluate subjective health status.[1–3]

There have been several studies examining SRH in cancer survivors. In a study of epithelial ovarian cancer survivors, older age was found to be associated with poorer SRH.[4] Most of the variance in SRH was explained by physical health variables, none of the cancer or cancer treatment variables contributed to this variance.[4] In a study among breast cancer survivors, 27% reported poor/fair SRH and women with a comorbid condition were five times more likely to report poor/fair SRH compared to those without.[5] Three recent studies compared cancer survivors (all types) to non-cancer controls and all reported that compared to controls, short-term (1–5 years after diagnosis) and long-term (>5 years) cancer survivors had a poor SRH more often.[6–8] Another study showed that cancer survivors (all disease types, 60% were diagnosed >5 years ago) had more comorbid conditions compared to non-cancer controls and cancer survivors with >1 comorbid condition had a poor SRH more often compared to controls.[9]

A significant proportion of cancer survivors reports poor SRH and this is higher than those older adults who were not diagnosed with cancer and those with comorbid conditions seem to be at highest risk. One recent study showed that in patients with newly-diagnosed cancer including breast, lung, genitourinary and gastrointestinal malignancies, a physical activity intervention improved SRH during and after chemotherapy.[10] Another study examining potential useful interventions to improve SRH as perceived by breast cancer survivors themselves, included management of treatment side-effects, management of comorbid conditions and physical activity interventions.[11] However, the concept of SRH has been less frequently studied in older adults with newly-diagnosed cancer prior to any type of cancer treatment. A better understanding of the relationship between SRH, comorbidity and cancer outcomes in patients with newly-diagnosed cancer could help in the development of interventions to prevent/improve SRH and factors that influence it and thus their well-being.

Furthermore, Mohan et al.[12] have suggested that SRH can be used as a tool for estimating health-adjusted life expectancy in patients newly diagnosed with localized prostate cancer by adjusting life expectancy based on age for SRH. These authors showed that the correlation between age and SRH was very low, but moderate to good for SRH and comorbidity and depression. Compared to other measures of quality of life and functioning, SRH has also been found to be a strong predictor for survival in patients diagnosed with advanced cancer.[13] Clough-Gorr et al.[14] in a large study of patients with newly-diagnosed breast cancer showed that 85% (n = 564) reported good SRH prior to diagnosis (collected retrospectively 3 months after breast cancer surgery), and the correlation between SRH and comorbidity was modest (r = 0.38). Poor/fair SRH was strongly predictive of poor treatment tolerance and mortality seven-years after baseline. Eng et al.[15] using the same study population reported that the combination of baseline SRH and walking ability predicted 10-year mortality. Up until now, there have thus been few studies examining the relationship between SRH, functional status and outcomes of cancer and its treatment.

The aims of the secondary data analyses presented here are to 1) describe SRH in older patients with newly-diagnosed cancer and changes over time, 2) to explore the relationship between SRH and functional status measures used in oncology for older persons such as ECOG performance status, instrumental activities of daily living (IADL), basic activities of daily living (ADL), comorbidity, and frailty markers, and 3) to explore the relationship between baseline SRH and toxicity of treatment and mortality.

2. Material and Methods

2.1. *Study Sample*

Patients were recruited into a pilot study with the aim of assessing health and vulnerability in older patients with newly-diagnosed cancer (for more detail on study methods see Puts et al.[16]). The inclusion criteria were: patients aged 65 years and older, referred to the Segal Cancer Centre of the Jewish General Hospital (JGH), Montreal, Canada, a new diagnosis of solid tumor with or without metastasis (breast, colorectal, or lung cancer) or hematological malignancy (lymphoma and myeloma), and has not received cancer treatment in the previous 5 years. Exclusion criteria were: not able to speak English or French, physician-estimated life expectancy <3 months, and unable to give informed consent.

Recruitment took place between March 1st, 2007 and January 31st, 2008 except for colorectal cancer recruitment which ended on May 1st, 2008. One hundred-fifty-six patients were deemed eligible, and of these, 112 (71.8%) agreed to participate.

The baseline assessment took place before the start of treatment and the patients were followed up with face-to-face interviews at three and six months post baseline. Telephone interviews were conducted at 1.5, 4.5 and 12 months. During the 12 month follow-up period, 21 participants died (18.8%) and 10 were lost to follow-up due to refusal to further participate in the study (8.9%).

2.2. *Measures*

2.2.1. *Sociodemographic Data*

The patient's sex, age, living arrangements, marital status and education were collected at baseline.

2.2.2. *Self-Rated Health*

Self-rated health was asked in each face-to-face interview and in the telephone interview at 12 months with the question "In general, how would you rate your overall health?" and the response categories were very good, good, fair, poor and very poor.[1] The number of respondents answering that their health was very poor was small. Therefore, SRH was dichotomized in