Original Study

Relevance of Geriatric Assessment in Older Patients With Colorectal Cancer

Lore Decoster,[1] Leen Vanacker,[1] Cindy Kenis,[2,3] Hans Prenen,[4] Erik Van Cutsem,[4] Jacques Van Der Auwera,[1,5] Ellen Van Eetvelde,[6] Katrien Van Puyvelde,[7] Johan Flamaing,[3,8] Koen Milisen,[3,9] Jean Pierre Lobelle,[10] Jacques De Grève,[1] Hans Wildiers[2,11]

Abstract

With the aging of the population with colorectal cancer, there is a need for a more personalized approach of these older patients. The present study demonstrates that the performance of a geriatric assessment identifies problems and predicts functional decline during treatment as well as chemotherapy-related toxicity. Geriatric assessments should be integrated in the care of older patients with colorectal cancer.

Introduction: This study aims to evaluate the relevance of geriatric assessment (GA) in older patients with colorectal cancer (CRC) and to study functional status (FS) and chemotherapy-related toxicity during treatment. **Methods:** Patients with CRC aged $\geq$ 70 years were evaluated at baseline using a GA. Results were communicated to the treating physician. At 2 to 3 months follow-up, FS was reassessed, and chemotherapy-related toxicity was recorded. **Results:** A total of 193 patients, with a median age of 77 years, were included. GA was abnormal in 75% and revealed unknown problems in 40%. Treatment was altered in 37% based on clinical assessment. GA led to geriatric interventions in 9 patients (5%) and additionally influenced treatment in 1 patient. At follow-up (n = 164), functional decline was observed in 29 patients (18%) for activities of daily living (ADL) and in 60 patients (37%) for instrumental activities of daily living (IADL). Baseline IADL, depression, fatigue, and cognition were predictors for ADL decline, whereas no predictors for IADL decline could be identified. In the 109 patients receiving chemotherapy, stage and baseline fatigue were predictive for grade 3/4 hematologic toxicity, and baseline ADL, fatigue, and nutrition were predictive for grade 3/4 nonhematologic toxicity. **Conclusion:** Although GA identified previously unknown problems in more than one-third of older CRC patients, the impact on interventions or treatment decisions was limited. Baseline GA parameters may predict functional decline and chemotherapy-related toxicity. Education of physicians treating older patients with CRC is an essential step in the implementation of GA and subsequent interventions.

Clinical Colorectal Cancer, Vol. ■, No. ■, ■-■ © 2016 Published by Elsevier Inc.
Keywords: Biologic age, Chemotherapy-related toxicity, Elderly, Functional decline, Treatment decision

Introduction

The prevalence of colorectal cancer (CRC) increases with age. Over 50% of patients with newly diagnosed CRC are older than 70 years of age.[1] With the aging of the population, it is expected that the incidence of CRC in this older population will rise further. However, these patients are underrepresented in clinical trials[2] and often understaged and undertreated.[3,4]

Older patients with cancer represent a heterogeneous group with discrepancies between chronologic and biologic age owing to differences in functional and cognitive status and the presence of

L.D. and L.V. contributed equally to this work as first authors.

[1]Department of Medical Oncology, Oncologisch Centrum, UZ Brussel, Brussels, Belgium
[2]Department of General Medical Oncology
[3]Department of Geriatric Medicine
[4]Department of Gastroenterology, University Hospitals Leuven, Leuven, Belgium
[5]Department of Gastroenterology, AZ St Monica, Deurne, Belgium
[6]Department of Surgery, UZ Brussel, Brussels, Belgium
[7]Department of Geriatric Medicine, ASZ, Aalst, Belgium
[8]Department of Clinical and Experimental Medicine
[9]Department of Public Health and Primary Care, Academic Centre for Nursing and Midwifery, KU Leuven, Leuven, Belgium
[10]Consultant in Statistics, Beernem, Belgium
[11]Department of Oncology, KU Leuven, Leuven, Belgium

Submitted: May 18, 2016; Revised: Jul 19, 2016; Accepted: Jul 28, 2016

Address for correspondence: Lore Decoster, MD, Department of Medical Oncology, Oncologisch Centrum, UZ Brussel, Laarbeeklaan 101, 1090 Brussels, Belgium
E-mail contact: lore.decoster@uzbrussel.be

1533-0028/$ - see frontmatter © 2016 Published by Elsevier Inc.
http://dx.doi.org/10.1016/j.clcc.2016.07.010

comorbidities and polypharmacy. The Eastern Cooperative Oncology Group (ECOG) performance status (PS) and standard clinical approach fail to evaluate those aspects specifically for older patients with cancer.[5]

Geriatric medicine has developed a multidimensional geriatric assessment (GA)[6] to identify deficits missed by routine examination. It includes social parameters, functional status (FS) and fall history, cognitive and psychological status, nutritional status, comorbidities and polypharmacy, and uses validated geriatric scales to identify frail patients and subsequently set up an individualized geriatric intervention plan.

In older patients with cancer, GA is feasible at large scale and detects unknown geriatric problems.[7,8] In addition, GA and subsequent interventions can improve quality of life and seem to be prognostic and predictive.[8] In older patients with CRC, GA can predict treatment-related toxicity and postoperative morbidity.[9,10]

The aim of the present study was to investigate the value of GA in older patients with CRC as well as its influence on cancer treatment decisions. Secondly, the study evaluated the evolution of FS during treatment and the development of chemotherapy-related severe toxicity.

Methods

Patient Population

We performed a prospective noninterventional cohort study on GA in older patients with cancer in 6 tumor types (breast cancer, CRC, lung cancer, ovarian cancer, prostate cancer, and hematologic malignancies) in 2 Belgian academic hospitals.[7] The ethical committees of both participating centers approved the study (protocol number S51815).

Patients 70 years and older with newly diagnosed cancer or cancer progression/relapse were included when a cancer treatment decision had to be made. Disease progression/relapse was defined as progression during treatment or relapse after a treatment-free interval. A written informed consent was obtained from all patients.

For the present study, we performed a subanalysis on the cohort of patients with CRC.

Geriatric Screening and GA

At baseline, a trained health care worker performed a geriatric screening and GA in all patients, as previously described.[7] Geriatric screening was performed with the Flemish version of the Triage Risk Screening Tool (fTRST) and G8.[11-13] The GA included: pain assessment, social data, FS by the Katz Activities of Daily Living (ADL) and by the Lawton Instrumental Activities of Daily Living (IADL), fall history during the last year, fatigue assessed by the Mobility Tiredness scale (MOB-T), mental status by the Mini Mental State Examination (MMSE) and Geriatric Depression Scale (GDS-15), nutritional status by the Mini Nutritional Assessment-Short Form (MNA-SF), comorbidities by the Charlson Comorbidity Index (CCI), and a polypharmacy assessment.[12]

A geriatric risk profile was defined as having 2 or more of the following criteria: living alone, ADL $>$ 6, IADL $<$ 8 for females or $<$ 5 for males, MMSE $<$ 24/30, GDS $>$ 5/15, MNA-SF $<$ 24/30, and CCI $\geq$ 1.

The GA results were communicated to the treating physician electronically or on paper prior to the final cancer treatment decisions. It was at the physician's discretion to consult this information for the final cancer treatment plan. If deemed necessary, the initial treatment plan could be modified, and specific interventions could be performed.

Geriatric interventions consisted of referrals to the geriatrician, social worker, physiotherapist, psychologist, dietician, geriatric day clinic, fall clinic, and other.

Questionnaires for the Treating Physician

After the final treatment decision, the treating physician was interviewed using a predefined questionnaire. First, the questionnaire contained 3 questions on the GA: (1) Were you aware of GA results at the time of treatment decision? (2) Did the GA reveal any new information? and (3) Was any action undertaken to deal with the problems detected by the GA? Second, the questionnaire included 3 main questions on the impact of age and GA on cancer treatment decisions: (1) What would be your oncologic treatment proposal if the patient was 55 years old without comorbidities? (2) Is this different from your treatment proposal for this older patient according to age and standard clinical assessment without information from the GA? If yes, what was your treatment proposal for this patient and why? and (3) Is this different from your current treatment proposal for this patient according to age and standard clinical approach with the knowledge of GA results? If yes, what is your current treatment proposal for this patient and why?

The treatment proposed for a 55-year old patient without comorbidities (answer to question 1) was considered as standard. If the answer to the second question was affirmative, treatment was considered changed based on clinical assessment including age. Only physicians who consulted the GA results before the final treatment decision could answer the third question on treatment decisions. If the answer to this question was affirmative, treatment was considered modified based on GA results.

Functional Decline

The FS of patients was reassessed 2 to 3 months after the cancer treatment decision by repeating the ADL and IADL. Functional decline on the ADL was defined as an increase of 2 or more points on the total score, and on IADL as a decrease of 1 or more points on the total score.[12]

Chemotherapy-Related Toxicity

For patients treated with chemotherapy, grade 3/4 toxicity, according to the common terminology criteria for adverse events, v4.0, was retrospectively recorded.[14] Hematologic and nonhematologic toxicity were analyzed separately.

Data Analysis

Data were analyzed using SAS v9.3. For continuous data, mean, median, 95% confidence intervals (CIs), and range were assessed. For categorical data, frequency and 95% CI were assessed. Categorical data were compared using the χ^2 test.

Determination of predictors of functional decline on the ADL and IADL and of grade 3/4 hematologic and nonhematologic chemotherapy toxicity was performed separately using logistic regression. Univariate logistic regressions were conducted on the