How Should Patients 80 Years of Age or Older with Colorectal Carcinoma Be Treated?

Long-Term and Short-Term Outcome and Postoperative Cytokine Levels

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PURPOSE: The aim of this study was to determine how extensive resection affects operative morbidity, mortality, and long-term survival in elderly patients with colorectal cancer. METHODS: A total of 119 patients 80 years of age or older were given a diagnosis of colorectal carcinoma at our hospital between 1985 and 1997. Eleven patients who did not undergo surgery were excluded. The remaining 108 patients underwent laparotomy and were reviewed. Serum levels of interleukin-6 were measured perioperatively in 22 patients to assess the degree of operative stress. RESULTS: Potentially curative resection was performed in 64 (88.9 percent) of the 72 patients in the active performance status group and 13 (36.1 percent) of the 36 patients in the sedentary performance status group (P < 0.001). The in-hospital mortality rate was 8.3 percent in group the active performance status group and 38 percent in the sedentary performance status group (P = 0.007). Patients in the sedentary performance status group and those who underwent emergency operations had higher levels of IL-6 than patients in the active performance status group or those who underwent elective operations. CONCLUSIONS: Preoperative performance status, operative curability, and tumor stage have a significant impact on outcome in patients with colorectal cancer who are 80 years of age or older. Knowledge of early postoperative response of IL-6 is useful in predicting postoperative mortality and morbidity in this subgroup of patients. 

[Key words: Colorectal cancer; Geriatric; Interleukin-6; Performance status]


Mean life expectancy in many developed countries ranges from 75 to 80 years. Increased longevity, a higher overall incidence of colorectal cancer worldwide, and environmental risk factors all probably contribute to the high incidence of colorectal carcinoma among elderly patients. Elderly patients may reject potentially efficacious therapies because of misinformation, distrust of physicians, or a sense of fatalism associated with advanced age and concurrent illness. Age probably has been used as a disqualifier for treatment as often by the family and the family physician as by the surgeon. However, treatment bias attributable to age occurs less frequently when managing older patients with colorectal cancer than it does in patients with cancers arising at other sites. This lack of bias may be because symptoms, such as anemia, bowel obstruction, diarrhea, and perforation, usually mandate treatment. Tumors of the colon and rectum are treated best surgically with appropriate lymphadenectomy and adequate surgical margins. The question of how radically cancer of the large bowel in elderly patients should be treated often arises. Minimal resection in elderly patients is sometimes advocated to reduce operative stress. The operative stress can be evaluated by the postoperative response of serum interleukin 6 as an indicator. Colorectal surgeons have not reached a consensus as to the procedure of choice in patients 80 years of age or older who have colorectal cancer. The aim of this study was to determine how extensive resection affects operative morbidity, mortality, and long-term survival in elderly patients with colorectal cancer.

PATIENTS AND METHODS

A total of 119 patients 80 years of age or older were diagnosed with colorectal cancer at our hospital between 1985 and 1997. Eleven patients did not un-
dergo surgery and were excluded. The remaining 108 patients who underwent laparotomy were reviewed. The patients were analyzed with respect to preoperative performance status, operative procedure, histologic variables, modified Dukes classification, and survival. To assess the degree of operative stress, serum levels of interleukin-6 (IL-6) were measured by chemical luminescent enzyme immunoassay by use of an IL-6 analysis kit (Fuji Rebio, Co., Ltd, Tokyo, Japan) preoperatively and postoperatively (Days 0, 1, 3, and 7) in 22 patients with colorectal carcinoma who were 80 years of age or older and in 12 patients with colorectal carcinoma 60 years of age or younger.

Performance status (PS) was graded from 0 (best) to 4 (worst), according to the Eastern Cooperative Oncology Group (USA) criteria. The patients were divided into two groups: Group PSa (active), consisting of patients who had a PS of Grade 0 or 1 (72 patients) on admission; and Group PSs (sedentary), consisting of those who had a PS of Grade 2 or higher (36 patients) on admission.

Definitions

In-hospital mortality was defined as death in the hospital on the first or subsequent admissions while undergoing treatment for the presenting complaint. Operative mortality referred to death within 30 days after surgery on the first or subsequent admissions while undergoing treatment for the presenting complaint.

Potentially curative resection was defined as histologically complete removal of the primary tumor with no evidence of metastases to the peritoneum, liver, or other sites. Palliative resection was defined as histologic evidence of residual tumor at the site of tumor removal or at a distant location.

Performance status was graded according to the criteria of the Eastern Cooperative Oncology Group (USA): PS0, fully active, predisease status; PS1, ambulatory, capable of light work; PS2, capable of self-care, not able to work; PS3, in bed 50 percent of the time, limited self-care; and PS4, completely bed ridden, incapable of self-care.

Histologic Examination

Surgically resected specimens were fixed in 20 percent formalin, embedded in paraffin, and stained with hematoxylin and eosin. The specimens were examined histologically by pathologists in a manner blind to the patients’ outcome.

Follow-Up of Patients

The patients were followed up at three-month intervals for six months to three years after the operation and at one-year intervals after three years. The results of follow-up were updated in June of 1998. Follow-up consisted of physical examination, complete blood counts, serologic liver function tests, abdominal computed tomographic or echographic examinations, and measurement of serum tumor markers, including carcinoembryonic antigen (CEA).

Statistical Analysis

Cytokine levels are presented as means ± standard deviation (means ± SD). Mann-Whitney U test and Fisher’s exact test were used for statistical analysis.

RESULTS

The study group was composed of 46 men (mean age, 84.0; range, 80–96 years) and 62 women (mean age, 84.2; range, 80–94 years). Eighty-three patients had colon cancer, and 25 had rectal cancer. Potentially curative resection was performed in 77 patients (Dukes Stage A, 11; Dukes Stage B, 46; Dukes Stage C, 17; unknown, 3), and noncurative resection was performed in 31 patients; the curative resection rate was 71.2 percent.

Although not included in analysis, 11 patients with colon carcinoma did not undergo laparotomy (7 men; mean age, 86.2; range, 80–89 years). Their diagnoses were confirmed histologically on the basis of specimens obtained at biopsy or autopsy. Three of these 11 patients had PSa (performance status Grade 0–1) and 8 had PSs (performance status Grade 2–4). Eight patients (3 with PSa and 5 with PSs) refused surgery because of their age. Two patients with PSs did not undergo surgery because of general emaciation caused by distant metastasis, including multiple liver metastases. One patient with PSs choked and died before surgery. The seven patients with PSs who did not undergo surgery were initially hospitalized for 3 to 76 days and then died. Two of the three patients with PSa who rejected surgery were rehospitalized a year after initial admission and then died; the other was still alive at the end of the study, 1.5 years after refusing her operation.