Age: a critical factor in cancer management. A prospective comparative study of 400 patients

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Abstract

Background: older people are often excluded from cancer treatments solely on the grounds of age.

Aims: to compare cancer treatment in older and younger patients.

Patients and methods: between June 1992 and September 1994, 400 cancer patients were included in this prospective comparative study. The factors compared between younger and older subjects were performance status, associated chronic diseases, delay in diagnosis, stage of disease and initial treatment.

Results: 54 patients (25.5%) under 70 years of age were asymptomatic at the time of diagnosis, in comparison with 25 (12.5%) of the 200 older patients (P < 0.001). Associated chronic pathologies were more frequent in the older patients (55% vs 18.5%, P < 0.001). There were no statistical differences between both groups in diagnostic delay. Localized disease was found in 127 (63%) of the younger patients and in 109 (54%) of the older patients, the difference not being significant. The percentage of patients who underwent oncological treatment was higher in the younger than the older group (87.5% vs 56%, P < 0.001). The main cause of therapeutic exclusion in both groups was poor performance status; however, in the older group other variables—such as the presence of chronic disease and patients’ or relatives’ wishes and doctors’ opinions—influenced the decision not to give specific treatment.

Conclusions: this study confirms that the clinical characteristics and treatment of aged people with cancer are different from those of younger patients. Nevertheless, there is considerable doubt about whether an arbitrary age limit should continue to be accepted as a discriminatory factor in some diagnostic and therapeutic procedures in cancer patients.

Keywords: cancer treatment, elderly people

Introduction

People over 65 years make up 13% of the population of Europe [1–3]. Age is a risk factor for the development of cancer [4–8]; about 55% of cancers are diagnosed in patients over 65, and 60% of cancer-related deaths occur in this age group [2, 9–10]. Within the European Union, about one million new cancer patients are diagnosed each year, more than half of whom are aged [11].

Poor prognosis, limited life expectancy, decreased quality of life and inadequate social and family support may be more common in older cancer patients [12]. Cancer therapy is often sub-optimal [13–17], and there is a poorer survival rate in older patients [18, 19]. Patients over 70 are often excluded from chemotherapy trials, so there are few data on the effects and toxicity of chemotherapy in this age group [12, 19]. We need prospective, randomized controlled clinical trials of cancer treatments in old age [1, 12, 20–22].

We report a prospective comparative study which has allowed us to compare critically the clinical characteristics and treatment of cancer patients under and over 70 years of age.
University medical oncology clinic were included in a prospective comparative study. About 40% of our cancer patients are over 65 and many have public health service insurance. After diagnosis and local treatment (where indicated) in other departments of the hospital, the cancer patients were sent to the medical oncology department for neoadjuvant, adjuvant or palliative chemotherapy and follow-up. One hundred and fifty-seven patients (66 from the first group and 91 from the second) had radical surgery. The remaining 243 showed signs of advanced or metastatic disease at the time of diagnosis.

The factors evaluated in the comparative analysis were: performance status (PS) according to Zubrod’s scale [23]; associated chronic diseases; interval between first symptom and diagnosis of cancer; stage of disease (according to the TNM system [24]); adjuvant treatment, and palliative therapy.

The $\chi^2$ and Student’s $t$-test were used for statistical evaluation and a probability of $< 0.05$ was considered to be significant. Survival was calculated with the Kaplan–Meier method [25].

**Results**

The patients’ characteristics are shown in Table 1. At the time of initial diagnosis, 54 (25.5%) of the 200 younger patients were asymptomatic (PS 0) compared with 25 (12.5%) of the 200 patients over 70 years of age ($P < 0.001$). The number of patients with poor functional status (PS 2–4) was higher in the older group than in those under 70 (106 versus 54, $P < 0.001$). One or more associated diseases was found in 110 (55%) of the patients over 70 years, in comparison with 37 (18.5%) of the younger patients ($P < 0.001$). The most frequent associated conditions were chronic lung disease, hypertension, diabetes mellitus, coronary heart disease and cardiac dysrhythmia. In patients under 70, the median delay in diagnosis was 116 days (standard deviation (SD) 150 days) while in the over-70 age group, the median was 165 days (SD 320 days; $P = 0.02$). There were no differences in the disease stage between the two groups at the time of the initial diagnosis.

Loco-regional diseases were diagnosed in 63% of the younger patients and in 54% of the older ones. The percentage of patients given cancer treatment was higher in the younger group than in the older group (87.5% versus 56%, $P < 0.001$). When analysing the type of treatment, chemotherapy and radiotherapy were administered to a higher percentage of patients under 70 years (82% and 32%, versus 41% and 8%, respectively). No treatment was given to 9.5% of the younger group or to 36% of the older group. The reasons for no treatment being given were: poor PS [(51 (70%) of the 72 patients over 70); medical criteria (seven patients); patients’ (in six) or relatives’ refusal (in four); and severe chronic disease (four patients). In 19 untreated younger patients, poor PS was the only cause.

**Discussion**

This study confirms that an increase in age is associated with a reduction in the proportion of patients who receive specific cancer treatment. PS is a useful clinical index, correlating well with response to chemotherapy and overall survival. It was the main reason for therapeutic exclusion in both groups.

The prevalence of associated diseases increases with age [2, 9, 11, 26]. In our study, these were significantly higher in patients over 70, occurring in 5% of the no-treatment group. Other factors influencing lack of therapeutic interventions were doctors’ decisions and patients’ or relatives’ refusal. In our series, types of therapy used were different in both groups, aged people receiving less chemotherapy. Recently, others have made similar observations [14, 19, 21, 27].

Clinical characteristics of cancer and the frequency and type of active treatment used in aged people differ from younger patients. There is now considerable doubt about accepting an upper age limit as a unique discriminatory factor for diagnostic and therapeutic procedures. With the increase of cancer in aged people...
in the coming decades, age should not be considered independently, and it is important to determine which subsets of older patients will benefit from specific cancer treatments.

**Key points**

- Elderly cancer patients receive less specific treatment than younger patients.
- Poor functional performance is the main cause for therapeutic exclusion of young and older patients.
- Associated diseases are significantly more common in patients over 70 years.
- Age should not be considered independently in cancer treatment decisions.

**References**


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