RESEARCH COMMUNICATION

Management of Elderly Patients with Advanced Non-Small Cell Lung Cancer in Turkey

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Abstract

Objective: Non-small cell lung cancer is a disease that affects the elderly. However, most patients older than 70 years are less likely to receive standard therapy than their younger counterparts and the aim of the present study was to determine age-dependent variation in efficacy. Subjects and Methods: Between 2004-2008, 40 consecutive patients older than 70 years received treatment for advanced non-small cell lung cancer. All were evaluated for response and toxicity. Chemotherapy was either with cisplatin or carboplatin and double or single agents (vinorelbine, gemcitabine). Docetaxel was used as a second line therapy in selected cases. Patients were grouped according to age: group 1 (70-74 years), group 2 (≥ 75 years). Results: Except for 4 cases, all received chemotherapy, and 61 % were given a cisplatin-containing regimen. Second-line therapy was given to 42.5% and grades 3-4 neutropenia was seen in 17 (42.5%). Only one patient died due to neutropenic fever. Nephrotoxicity was observed in 2 (5%) and one underwent hemodialysis. Overall survival was 10 months, with median survival periods for groups 1 and 2 of 13 and 10 months, respectively (p>.05). No differences were found regarding type of chemotherapy administered or adverse events between the 2 groups. Conclusion: Patients older than 75 years appear to deserve the same standard therapy for non-small cell lung cancer as that given to younger cases.

Key Words: Elderly patients - non-small cell lung cancer - treatment modalities

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Introduction

Non-small cell lung cancer (NSCLC) is one of the most frequent malignancies seen in both in men and women, and the median age of diagnosis is 69 years (Havlik et al., 1994). As the population of older persons grows, the incidence of lung cancer will inevitably increase. Almost half of these patients present with advanced disease and the majority are unable to undergo curative surgical resection, so that systemic, palliative treatment is the only therapeutic option for most cases (Wasil andd Lichtman, 2005). However, age-related decrease in hepatic drug-metabolizing enzyme activity, particularly P450 microsomal enzyme system, and decreases in the glomerular filtration rate may cause alterations in drug elimination, which may result in increased toxic effects of chemotherapeutics in elderly patients. Knowledge about optimal treatment for older NSCLC cases is limited owing to their under-representation in clinical trials.

The most important prognostic factors for NSCLCs are performance status, extent of the disease, and weight loss in the previous 6 months (Havlik et al., 1994). Age is not included. Despite this, many older patients are less likely to receive chemotherapy (Hurria and Kris, 2003). Here, we reviewed our experiences in the management of elderly patients with advanced NSCLC.

Materials and Methods

Between 2004-2008, a total 187 patients with lung cancer were evaluated at Baskent University Medical Oncology Department. Clinical data were obtained from medical records of 40 patients older than 70 years (21%, 5 women and 35 men) with advanced NSCLCs and evaluated for type of chemotherapy administered and adverse results of the therapy.

Patients' characteristics are shown in Table 1. Median age at the diagnosis was 73.5 (70-82) years. Thenumber of patients ≥ 80 years-old was 3. One or more co-morbid

Table 1. Patient Characteristics

Age (years)	<75	28 [70,0]
	>75	12 [30,0]
Sex	Male	35 [87.5]
	Female	5 [12.5]
Stage	IIIA	3 [7.5]
	IIIB	25 [62.5]
	IV	12 [30.0]
Chemotherapy	1st -line Cisplatin+	22 [61.0]
	Carboplatin+	8 [22.5]
	Single agent	6 [16.5]
	2nd line Docetaxel	17 [42.5]
Radiotherapy		15 [37.5]

Cisplatin+: Cisplatin either with vinorelbine or gemcitabine
Carboplatin+: Carboplatin and vinorelbine

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illnesses were found in 12 patients [30%] (Table 2). Patients were grouped into 2, according to age: group 1 [70-74 years, 23 patients] and group 2 [≥75 years, 14 patients]. Tumor response was evaluated by comparison of tumor size on computerized tomography scans before and after three cycles of chemotherapy.

Table 2. Associated Co-morbidities

Coronary Artery Disease	5
Hipertension	5
Diabetes Mellitus	4
Benign Prostate Hypertrophy	3
Chronic Renal Disease	2
Chronic Obstructive Pulmonary Disease	2

Results

Except for 4 patients, all received chemotherapy, and 61 % were given a cisplatin-containing regimen (Table 1). Neutropenic fever was seen 17 patients (42.5%). In these patients dose reduction was made in the following cycles. Prophylactic filgastrim was given to only 2 patients due to frequent neutropenic episodes between cycles. In one case chemotherapy was stopped for this reason. Nephrotoxicity was observed in 2 patients, 1 of whom required dialysis. The median survival of all patients was 10 months and for groups 1 and 2 were 13 and 10 months, respectively (p=0.06). When the 2 groups were compared, no difference was found between type of chemotherapy administered, the number who received radiotherapy and incidences of neutropenia and nephrotoxicity.

Discussion

Although there is no standard chronological age for being ''older'' in most countries, person older than 65 years are considered ''elderly''. Functional and nutritional status, comorbid medical conditions, cognition, psychological state, and social support are the important factor in managing elderly patients with the cancer. In this population, decisions regarding treatment also involve an assessment of life expectancy. Data show that life expectancies of 70 year-old person and a 75 year-old person is approximately 14.4 more years and 11.3 more years respectively (Meriggi and Zaniboni, 2006).

Surgery is the best treatment option for the early stage of NSCLC; however, age-related physiologic changes (eg, decrease in cardiac output or maximal heart rate and prolong recovery periods) are challenges for surgical intervention (Schiller, 2001). Furthermore, most patients present with advanced-stage disease so systemic chemotherapy is the only management option (Rossi and Gridelli, 2006). However, older patients use 3 times more medication than do younger patients and are more prone to adverse effects (Vestal, 1997). Although some guidelines have been formed to reduce the toxicity of chemotherapy in elderly patients, they are often less likely to receive effective chemotherapy (Havlik et al., 1994).

In advanced NSCLCs, cisplatin-based combinations have become a standard treatment option. However, because of age related decreases in glomerular function and bone marrow reserve, most physicians hesitate to use cisplatin in older patients. Recently the efficacy of cisplatin-based chemotherapies was evaluated retrospectively in elderly patients and several analyses showed similar survival and efficacy rates as in their young counterparts [9]. There is no definitive criterion that explains which chemotherapy is best for that particular patient. Comprehensive geriatric assessment is one tool to evaluate the elderly, but may be too lengthy for clinicians in daily practice. In our study, cisplatin-based regimen as a first-line treatment for advanced NSCLC was given more than half of the patients, including those with a good performance status, no marked weight loss and normal renal function. Carboplatin was preferred in patients with decreased renal function but the frequency of nephrotoxicity was low. Close follow-up was required in patients whom oral intake decreased just after the induction of chemotherapy. Single agent cytotoxic drugs were preferred in elderly patients with marked weight loss and decrease oral intake. Concerning the cytotoxicity of the chemotherapy, grade 3-4 neutropenia was the major side effect, and reduction of drug doses was preferred to overcome this problem. Only 2 patients required prophylactic filgrastim due to frequent neutropenic attacks. Even patients older than 75 years, were treated aggressively, regardless of age, achieved a median survival of 10 months. Results of main analyses on phase III trials with platinium-based regimen in elderly presented 6.9 to 9 months of survival (Meriggi and Zaniboni, 2006).

Our data show that patients older than 75 years, treated with standard therapy for NSCLCs, may have good outcomes, with acceptable levels of toxicity. Patients older than 70 years can expect at least 10 more years of life. Although age-related deterioration is seen in the functioning of most organs, standard therapy may thus be given effectively to the patients regardless of age.

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