ORIGINAL ARTICLES

Multidisciplinary Management of Lung Cancer: How to Test Its Efficacy?

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The multidisciplinary management of lung cancer has been universally accepted. In France, the multidisciplinary approach for cancer patients is established by law. However, the efficacy of this approach remains theoretical, given that no evaluation criteria have been made available and no previous reports have been published on the prospective follow-up of these patients. The Groupe d' Oncologie Thoracique Azuréen carried out a 1-year prospective study on patients discussed during its multidisciplinary weekly meetings, to analyze the concordance between the proposed and administered treatment, the delay of treatment, and the 1-year actuarial survival. Of the 344 patients discussed during the period considered, the therapeutic decision was chemotherapy in 183 patients, surgery in 93, radiochemotherapy in 42, radiotherapy in 14, and supportive care 12. Therapeutic discordance between the planned and the administered treatment was recorded in 15 cases (4.4%), mainly for patient's refusal (seven cases) or poor performance status (five cases). The median delay of treatment was 20 days, shorter for chemotherapy (16 days), and longer for radiotherapy (27 days). The overall 1-year survival rate was 51.4%: 80.4% for stage I, 50.3% for stage II, 37.5% for stage III, and 27.2% for stage IV. For patients for whom discordance of treatment was recorded, a lower survival rate was recorded, without reaching statistical significance (0.07). In conclusion, the efficacy of the Groupe d' Oncologie Thoracique Azuréen multidisciplinary management was confirmed, as we believe that a discordant rate of less than 5% and a delay of treatment of 4 weeks can be considered acceptable. Furthermore, a periodic survival evaluation of the population as a whole could provide additional useful information for multidisciplinary groups.

Key Words: Lung cancer, Treatment, Multidisciplinary management, Survival.

(*J Thorac Oncol.* 2007;2: 69–72)

The modern management of lung cancer should be multidisciplinary[1,2] to facilitate precise staging and optimal treatment. In France, this became law in 1998, stating that all patients, no matter where they are treated, should benefit from a diagnostic and therapeutic strategy defined by a multidisciplinary team composed of an oncologist, surgeon, organ specialist, pathologist, radiotherapist, and general practitioner.[3]

The therapeutic strategy decided by the multidisciplinary team must be derived from evidence-based guidelines and ongoing clinical protocol tailored to patient information given during the common clinical presentation of the case.

To verify the theoretical advantages of this approach, follow-up information is needed to assess how many patients did indeed receive the planned treatment and, in case of discordance, to verify the cause. Unfortunately, there is currently no information available in literature regarding the follow-up of these patients after their multidisciplinary evaluation.

For these reasons, the Groupe d'Oncologie Thoracique Azuréen (GOThA), the thoracic oncology group based in Nice, started a 1-year prospective study to verify the follow-up of patients after multidisciplinary discussion, with particular attention given to the concordance between the proposed and administered treatments.

PATIENTS AND METHODS

The main objective of this study was a prospective assessment of the impact of the GOThA multidisciplinary evaluation of lung cancer patients, verifying conformity between the planned and the administered treatments. Secondary objectives of the study were the assessment of the delay of treatment (defined as the time [in days] from the first multidisciplinary discussion to the date of initiating therapy) and the analysis of the actuarial overall 1-year survival rate.

Multidisciplinary Evaluation

In France, all patients with a proven or possible diagnosis of lung cancer must be evaluated in a multidisciplinary discussion during a "RCP" (Reunion de Concertation Pluridisciplinaire, meeting of multidisciplinary discussion). Nice is the county seat of the French Alpes Maritimes Department (4298 km², 971,829 inhabitants), one of the six departments of PACA region (Provence-Alpes-Côte d'Azur). At the time of the study, there were three active thoracic oncology RCP units in Alpes Maritimes Department, two of which were in Nice. The general practitioner or specialist who needed to evaluate a patient with lung cancer decided in which RCP to present the case. Once the decision was made, it was his or

her responsibility to follow the RCP recommendations or to modify them based on the patient's clinical course.

One of the Nice RCP weekly meetings is held by GOThA. It is composed of 24 members representing seven different specialties (thoracic surgery, thoracic oncology, pulmonology, radiotherapy, radiology, pathology, and nuclear medicine).

Study Population

The population was composed of all the patients with a clinical diagnosis of lung cancer presented at the GOThA weekly meeting for a 1-year period starting on July 1, 2003. The reason for multidisciplinary evaluation was recorded for each patient (diagnosis, first treatment, two or more treatments, adjuvant treatment after surgery, follow-up). Lung lesions were classified into four groups: histologically proven lung cancer, high, intermediate, or low risk of lung cancer. The therapeutic decision was classified in five different categories (surgery, chemotherapy, radiotherapy, chemoradiotherapy, best supportive care). Patients receiving chemotherapy and radiotherapy with palliative intent were assigned to the chemotherapy group; those receiving only palliative radiotherapy were assigned to the best supportive care group. Patients entering multimodality protocols were discussed at the GOThA meeting after each therapeutic step.

Staging Procedures

Staging procedures were performed according to FN-CLCC (Fédération Nationale des Centres de Lutte contre le Cancer) guidelines. In patients with clinical stage I–III suitable for curative treatment, bronchoscopy, computed tomography scan of the chest and of the upper abdomen, and positron emission tomography scan were routinely performed. In cases of mediastinal lymph nodes larger than 1 cm in their short axis, histologic confirmation was obtained by mediastinoscopy, anterior mediastinotomy, or video-assisted thoracoscopy, as needed. In patients with clinical stage IV disease, only the presence of overwhelming clinical and radiographic evidence of metastases was considered sufficient for staging. In all the other suspected cases, tissue confirmation of the metastatic site was considered mandatory before chemotherapy. Candidate patients for palliative care had chest and abdomen computed tomography evaluation only.

Follow-up

After the multidisciplinary discussion, the physician who first presented the case was contacted for the first time after 2 months to verify the concordance and the delay of treatment and thereafter every 2 months to check the patient's status and possibly the cause of death. A dedicated data manager working 6 hours per week was needed during the entire period of the study for data collection during the weekly meetings and for patient follow-up.

The last data collection was performed in March 2005. One-year survival curves were obtained using Kaplan-Meier analysis for the whole population of patients with pathologically proven lung cancer and were divided by stage.

RESULTS

Between July 1, 2003, and June 30, 2004, 344 patients were presented at one of the 51 weekly GOThA meetings with a clinical (97 patients) or pathologic (247 patients) diagnosis of lung cancer. Characteristics of the population are listed in Table 1. Therapeutic treatment was classified as follows: surgical resection in 93 cases (27%), chemotherapy in 183 cases (53.2%), chemoradiotherapy in 42 cases (12.2%), radiotherapy in 14 cases (4.1%), and best supportive care in 12 cases (3.5%) Table 2.

Treatment decision was made at the first multidisciplinary discussion for 164 patients (47.6%), at the second presentation for 112 patients (32.6%), at the third presentation for 51 patients (14.8%), and later for 17 patients (5%).

At follow-up, discordance between the planned and administered treatment was recorded in 15 patients (4.4%). Seven patients (2%) refused the proposed treatment. In five cases (1.4%), the clinical status of patients did not permit the administration of treatment. In one case (0.3%), an 82-year-old patient was proposed for supportive care. His physician referred him to a different radiotherapist; he then underwent radiotherapy and subsequently died of cardiac complications due to preexisting aortic stenosis. In two cases (0.6%), the referring physician was not able to contact the patients, and they were considered as discordant cases.

It is of interest to note that the median age of discordant cases was significantly higher than the median age of concordant cases (74 versus 65 years, $p = 0.01$). The rate of discordance was higher for supportive care (2/12, 16.6%) and radiotherapy (1/14, 7.1%) compared chemotherapy (5/183, 2.7%) and surgery (4/93, 4.3%).

The median overall delay from GOThA discussion to treatment was 20 days. For chemotherapy, the median delay

TABLE 1. Clinical Characteristics of the Population: Clinical Stage Defined for Each patient at the Time of the Multidisciplinary Discussion Is Reported

	No.	%
Gender		
Males	251	72.9
Females	93	27.1
Age		
<65	148	43.1
65–75	137	39.8
>75	59	17.1
Proven lung cancer	247	71.8
Clinical stage		
I	48	13.9
II	41	11.9
III	150	43.6
IV	105	30.5
Reason for presentation		
Diagnosis	77	22.4
1 treatment	155	45.1
≥2 treatments	28	8.1
Adjuvant treatment	40	11.6

TABLE 2. Clinical Details from the 13 Patients for Whom a Discordance of Treatment Was Recorded

Sex	Age, y	Decision	Reason for discordance
F	72	Surgery	Poor performance status
M	71	Supportive care	Patient's refusal
M	78	Chemotherapy	Patient's refusal
F	81	Radiotherapy	Poor performance status
M	83	Surgery	Poor performance status
M	78	Radiotherapy	Poor performance status
M	82	Supportive care	Contrary decision of the referring physician
M	88	Surgery	Poor performance status
M	73	Chemotherapy	Patient's refusal
M	75	Chemotherapy	Patient's refusal
F	78	Chemotherapy	Patient's refusal
M	50	Surgery	Patient's refusal
F	57	Chemotherapy	Patient's refusal

The referring physician was not able to further contact the patients in two cases and they were considered as discordant.

was 16 days, 22 days for surgery, 24 days for chemoradiotherapy, and 27 for radiotherapy.

At the last follow-up, 61 deaths were recorded, 57 of them due to cancer-related causes. Mean follow-up time was 152.6 ± 95.2 days. Overall 1-year actuarial survival rate for the entire population was 51.4%: 80.4% for stage I, 50.3% for stage II, 37.5% for stage III, and 27.2% for stage IV (χ^2 = 9.40, df = 3, p = 0.02). For patients who received RCP treatment, a longer survival time was recorded as compared to discordant cases, but the advantage was not statistically significant (p = 0.07).

DISCUSSION

Although multidisciplinary management of lung cancer patients is widely recommended, very little information is available on the actual impact of this approach. Moreover, the complexity of multidisciplinary management makes it difficult to achieve satisfactory comprehensive evaluation. When the study was started, three parameters were arbitrarily chosen to test the efficacy of GOThA activity: the concordance between the proposed and delivered treatment, the delay of treatment, and the long-term survival. The concordance parameter was considered as the most important because multidisciplinary discussion affords the best treatment for each patient based on clinical history, performance status, and tumor stage. In our series, the rate of discordance was about 5%. Even in absence of data for comparison, we estimate this discordance rate as acceptable, considering that discordance was mainly due to patients' refusal of treatment. Furthermore, even if the population is too small for a multivariate analysis, the two factors that seem to increase the risk of discordance are the age of the patient and the choice of supportive care.

It is logical to assume that the more quickly treatment is implemented, the more successful are the results. The British Thoracic Society has stated that time span between the first consultation with pulmonologist and the actual surgical intervention should not exceed 8 weeks[4], when feasible. Keeping in mind these guidelines, the delay of treatment reported in our study (1 month) can be considered acceptable, considering that about 50% of patients needed more than one presentation to receive a treatment decision and that the waste of time due to potential multiple consultations with different specialists was avoided. Even if a clear relationship between an accelerated pathway to diagnosis or resection and a better chance of survival is not supported by direct evidence,[1] in our opinion, the length of time between diagnosis and treatment represents an important quality parameter.

Surprisingly, the 1-year survival was higher than expected.[5] It is probably due to the rate of patients eligible for curative treatment, as thoracic surgeon members of GOThA's RCP represent 90% of the thoracic surgical activity of the region. Although the additional workload required for the collection of survival information was substantial, the continuous active follow-up maximally reduced the typical loss of information, which becomes likely when data are collected 6 to 12 months after the event. Moreover, the multidisciplinary team was able to monitor the prognosis of the population in real time. The scientific impact of such information is limited; however, it represents the results of treatments administered to an unselected population, which provide a more realistic picture than those obtained from patients selected for clinical trials.

Although not the primary objective of the study, the trend toward increased survival in patients treated with the multidisciplinary approach, as reported by other authors,[6] seems to be confirmed and represents a stimulus toward improving the efficacy of the multidisciplinary management of lung cancer. From the practical point of view, the development of a simple alphanumeric code to describe basic patient information (such as age, diagnosis, stage, first treatment, date and status of last follow-up) would help different multidisciplinary groups in a data comparison. Moreover, the use of telemedicine[7] can probably reduce the waste of time due to displacements and increase the frequency of multidisciplinary meetings, which should ideally be held on a weekly basis.

In conclusion, given the fact that the multidisciplinary approach in lung cancer is widely accepted but poorly evaluated, (1) quality parameters should be defined to increase knowledge in this field, (2) the three parameters we tested have proved to be satisfactory for this purpose, (3) furthermore, a discordant rate of less than 5% and a delay of treatment of 4 weeks can be considered acceptable. Finally, a periodic survival evaluation from the overall population represents an opportunity to collect additional useful information.

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