Small cell lung cancer: a Moroccan retrospective study of 70 cases

Abstract

Background: Lung cancer is the main cause of cancer-related death worldwide. Small cell lung cancer (SCLC) represents 15-20% of all lung cancers, it is an aggressive neoplasia, with a 5-year mortality of 90% or more. The aim of this study was to evaluate the epidemiological and clinical features, treatment outcome and survival for patients with SCLC treated in medical oncology department during the period from 2010 to 2018.

Material and methods: It is a retrospective study including Small cell lung cancer (SCLC) treated in the department of Medical Oncology at Hassan II University hospital in Fes, from January 2010 to December 2018. Collection of data was obtained through computerized records of patients. The survival was analyzed by the Kaplan-Meier method.

Results: The mean age was 59 years. Almost all patients were current smokers. The most frequent symptoms on admission were dyspnea, chest pain and hemoptysis. The stages of SCLC were limited disease in 17 (24,3%) and extensive disease in 53 (75,7%) patients. Contra lateral lung was the most common site of metastasis (42.6%) followed by adrenal gland, brain, liver and bone. The median survival was 25.2, 17.2 and 21.3 months for LS, ES and overall patients, respectively.

Conclusion: In conclusion, demographic and clinical features of the patients were similar with the literature. We found a better survival than reported in literature.

Keywords: SCLC, lung cancer, LS-SCLC, ES-SCLC

Volume 11 Issue 2 - 2020

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Received: February 11, 2020 | **Published:** April 21, 2020

Introduction

Small-cell lung cancer (SCLC) is an aggressive histologic subtype of lung cancer that is strongly associated with cigarette smoking and has a tendency for early dissemination, its accounts for approximately 15% to 20% of all lung cancers. It is characterized by highly sensitivity to chemotherapy and radiation. However, prognosis still poor and most patients die from recurrent disease. In this work, we report the experience of a Moroccan unit at Hassan II University Hospital, in Fes, Morocco. The aim of this work is to describe epidemiological, clinical and therapeutic aspects of this disease in Moroccan patients and discuss our results in comparison with literature.

Patients and methods

It is a retrospective study conducted in department of medical Oncology, Hassan II University Hospital from January 2010 to December 2018, including patients with SCLC, all stages, presented to our department. Collection of patient's data was made through software of computerized records of patients. We analyzed demographic features, treatment received, its toxicity, outcome and survival in Moroccan patients and discuss our results in comparison with literature. The survival was analyzed by the Kaplan-Meier method.

Results

Seventy cases of histologically proven small cell lung cancer were included in this retrospective study. Median age of patients was 59 years, 26% of them presenting over age 65 years. The male sex was predominant in 96% (sex ratio=0.9) and 96,7% of them were smoker. 90% of patients were ECOG-PS≤2, the most frequent symptom was dyspnea (52.8%) followed by chest pain (36%), then hemoptysis (32.7%) and cough (29.5%) Table 1.

Table 1 Presenting symptom

Symptoms	N (%)
Dyspnea	37 (52,8)
Chest pain	25 (35,7)
Hemoptysis	23 (32,8)
Cough	20 (28,5)

75.7% of patients were diagnosed with extensive disease (ED) while 24,3% presented with limited disease (LD). The most frequent metastatic sites were contra lateral lung (38.6%), adrenal gland (26.4%), brain (18,8%), liver(18,8%) and bone (15%) Table 2. Patients with LD-SCLC received concurrent chemo radiotherapy in 9patients (52,9%), response rate was 33.3% with complete response in 11% while disease progression found in 66,7%.

Table 2 Metastatic sites

Site	N (%)
Contra lateral lung	15 (38,6)
Adrenal gland	14 (26,4)
Brain	10 (18,8)
Liver	10 (18,8)
Bone	8 (15)

Patients with ED-SCLC,EP chemotherapy regimen was used in 41 patients (77,3%), consisted of platinum compounds (cisplatin 75mg/m² or carboplatin AUC5) day1 IV and 100mg/m² of etoposide days 1-3 IV, cycle was repeated every 3 weeks. while 12 patients (22,6%) with poor general condition, received supportive care without chemotherapy. 4 patients have received prophylactic cerebral

radiotherapy: two in complete response after chemotherapy and 2 others in partial response with good performance status.

The median number of cycles of chemotherapy was three (range, 1–6), response rate was 51.2% with complete response in 7.3% while disease progression found in 48.7% Table 3. After failure of EP, 4 patients needed a second line that consisted of irinotecan (2 patients) and docetaxel (2 patients). All four patients progressed after 3. hematological toxicity was predominant in all regimens with 5.4% grade IV toxicity. The median survival was 25.2, 17.2 and 21.3 months for LS, ES and overall patients, respectively Figure 1.

Table 3 Response rate of first-line chemotherapy

Response rate	N (%)
Complete response (CR)	3 (7,3)
Partial response (PR)	10 (24,4)
Stable disease (SD)	8 (19,5)
Progressive disease (PD)	20 (48,7)

Figure 1 Overall survival of patients in months.

Discussion

Our work focused on a descriptive retrospective study of small cell lung cancer treated in the medical oncology department at Hassan II University hospital in Fes, Morocco. Our study showed that the average age of our patients was 59 years, with 26% of them aged over 65 years, which is consistent with worldwide.^{1,2}

Smoking remains the most established cause of lung cancer.^{3,4} In our series, all males (96,7%) were smokers, the only two women in our study had a history of second hand smoke exposure, which is related to the fact that males are more smoker than females in our country. Patients with lung cancer often suffer from multiple symptoms which could be features of local disease (shortness of breath, chest pain, cough, hemoptysis), locally advanced disease (hoarseness of voice, facial swelling, dysphagia), extrathoracic spread (seizures, focal neurological deficits, bone pain) and weight loss and anorexia.⁵ In our study dyspnea and chest pain were the most frequent symptoms. Patients with small-cell lung cancer rarely present with limited stage

disease confined to the chest. Most (60–70%) patients present with clinically obvious extensive-stage disease.

The work-up in our series showed 75.4% extensive-stage disease which is consistent with the literature. In extensive stage small cell lung cancer, main metastatic sites were liver, brain, bone, adrenal glands and pleura.^{6,7} In our patients, the most frequent metastatic sites were contra lateral lung, followed by adrenal gland, brain, liver and bone. Brain metastases are common in patients with SCLC, they are present in approximately 25% of patients at initial diagnosis. Of the patients who achieve a complete response to initial treatment, approximately 45% will present with CNS metastases as the only site of recurrence at 2 years.⁸

Two separate meta-analyses concluded that prophylactic cranial irradiation (PCI) reduces the incidence of CNS metastases between 52–54% and improves survival from 16% to 18% in those patients who achieved a complete response.^{9,10} In our study, 7% of patients received PCI after complete or partial response. Combination chemotherapy remains the standard of treatment for both limited-stage and extensive-stage small-cell lung cancer. In general, the doublet Etoposide plus either cisplatin or carboplatin and chest radiotherapy for patients with good performance status and limited-stage disease should produce a complete-response rate of 80% or higher, median survival in excess of 17 months, and 5-year cancer-free survival of 12–25%.^{11,12} Patients with extensive-stage disease given combination chemotherapy should have a complete-response rate of more than 20% and median survival longer than 7 months, in addition, 2% of patients will be alive and without cancer at 5 years.¹³

In our population study, patients with ED-SCLC, EP chemotherapy regimen was used in 32 patients (52,4%), response rate was 51.2% with complete response in 7.3% while disease progression found in 48.7%. The median duration of survival of patients with limited and extensive disease was 21,3 months (17,2 months and 25,2 months respectively), which was better to previous studies.¹⁴

Conclusion

In conclusion, small cell lung cancer remains a therapeutic challenge despite high initial responses to chemotherapy and radiotherapy. Demographic and clinical features of our study were similar with previous studies, but survival was better.

Acknowledgments

None.

Conflicts of interest

The authors declare there are no conflicts of interest.

Funding

None.

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