

ORIGINAL ARTICLE

PATTERN OF PRESENTATION OF LUNG CANCER IN SUDAN WITHIN YEARS (2000-2006)

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Background: *In the developed world lung cancer is the most common form of cancer in men and is the leading cause of cancer mortality. The incidence of lung cancer is low in most African countries, but emerging statistics indicate that its incidence is increasing in these countries. Early detection of lung cancer results in favorable outcome and knowledge of patterns of presentation may help physicians to make prompt diagnosis and thereby improve outcome. This study was designed to achieve this goal by identifying patterns of lung cancer presentation.*

Methods: *This is a cross-sectional study that included 100 consecutive patients with histologically proven lung cancer on biopsies obtained bronchoscopically. Demographic and clinical data were collected using a structured questionnaire and physical signs were recorded. All patients had computed tomography of the chest and upper abdomen for staging.*

Results: *The mean age of the patients studied \pm SD was 56 years \pm 8.9. Sixty four percent of patients with lung cancer were male and 60% had no co-morbidity. The commonest presenting symptoms were persistent cough (88.3%) and shortness of breath (71.3%) whereas fever was a rare presenting symptom (6.5%). On physical examination pleural effusion occurred in 39.4% of patients whereas lymphadenopathy and hepatomegaly were the least encountered physical signs occurring in 9.6% and 7.4% of patients respectively. In this cohort 76.6% of patients with non small cell lung cancer had stage 3 or 4 disease.*

Conclusion: *In this cohort more than 4 in 5 patients presented with cough and fever was a rare presenting symptom. Pleural effusion signs were most prevalent but this may reflect the fact that the great majority of patients in this cohort had advanced disease.*

INTRODUCTION

In industrialised countries, Lung cancer is the most common form of cancer among males and is increasing among females.⁽¹⁾ Lung cancer is the leading cause of cancer death in the world accounting for 17% of all cancer mortality.⁽¹⁾ There are, however, considerable regional variations in incidence and mortality from lung cancer and in most African countries the incidence of lung cancer is low.^(1,2) The reason for these regional variations is not known and genetic or environmental factors have been

postulated as possible causes. Incomplete records and lack of accurate statistics may be important causes especially that many studies have shown that there is increased genetic susceptibility to lung cancer among individuals of African descent in North America.^(3,4)

In African countries, respiratory infections especially tuberculosis account for the majority of patients presenting to pulmonary clinics.⁽⁵⁾ With increasing cigarette consumption in many African countries it is

likely that the incidence of lung cancer will increase and emerging statistics very much support this.^(6,7)

In lung cancer the most important factor for a favourable outcome is early diagnosis.⁽⁸⁾ A description of patterns of presentations of lung cancer in such countries may help making an early diagnosis. The present study was designed to identify these patterns of presentations in patients with histologically proven lung cancer.

PATIENTS AND METHOD

This is a cross-sectional study that included 100 consecutive patients with histologically proven lung cancer presenting to two tertiary referral hospitals in Khartoum: Elshaab Teaching Hospital and Sudan Heart Centre. Ethical approval for the study was obtained from the administrative and ethical committee of Sudan Heart centre and all patients gave informed consent to take part in the study. All patients had chest radiographs done prior to their referral and they were referred because of abnormalities found on these radiographs. Data on age, sex, smoking history and the presence of co-morbidity was collected using a structured questionnaire. All patients underwent a full clinical examination and physical signs were recorded using a specially designed clinical sheet. All patients underwent fibreoptic bronchoscopy under conscious sedation by one operator and endobronchial lesions were identified, biopsied, sent to the laboratory in formalin and examined histologically. In addition pleural aspirate were taken from all patients who had pleural effusions and a fresh sample was examined cytologically for the presence of cancer cells. Patients had computed tomographic (CT) examination of the chest and upper abdomen; CT examination of different other body systems was also done as indicated by abnormal findings on clinical examination. Staging was based on The International System for Staging Lung Cancer.⁽⁹⁾

RESULTS

A total of 100 consecutive patients with histologically proven lung cancer patients were included in this study. Table 1 shows the baseline characteristics of the 100 patients with lung cancer. About two thirds were males, more than 6 in ten were smokers and the majority had no co-morbidity. (Fig. 1) shows the frequency of symptoms, expressed as percentages, among the 100 patients with lung cancer. The commonest presenting symptoms were persistent cough for six weeks or more and shortness of breath (SOB); haemoptysis occurred in about 1 in 10 of the patients and fever was a rare presenting symptom. (Fig. 2) shows the frequency of signs, expressed as percentages, among the patients studied. The commonest physical signs were those of pleural effusion which occurred in 2 of every five patients whereas hepatomegaly was the least

encountered physical sign. Table 2 shows the histological types and staging of non-small cell lung cancer patients among the studied cohort. A total of 88 patients had non-small cell lung cancer and of these patients 87.6% had advanced disease – stage 3 or 4.

Table 1. Baseline characteristics of the 100 patients with lung cancer.

Characteristic	Number (percentage)
Age years: mean (SD)	58 (8.9)
28 to 40 years	4 (4%)
41 to 50 years	24 (24%)
51 to 60 years	42 (42%)
61 to 70 years	2 (26%)
71 years or more	4 (4%)
Sex	
Male	66 (66%)
Female	34 (34%)
Smoker	
Current or previous	62 (62%)
Never	38 (38%)
Co-morbidity	
Yes	40 (40%)
No	60 (60%)

Table 2. Histological types and staging of non-small cell lung cancer patients among the patients studied.

	Small cell	Non-small cell
Number (percentage)	12 (12%)	88 (88%)
Stage: number (percentage)		1 3 (3.4)
		2 8 (9)
		3 32 (36.4)
		4 45 (51.2)

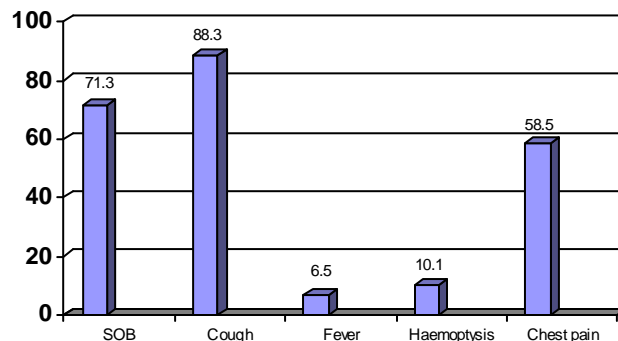


Fig 1. Frequency of symptoms, expressed as percentages, among the 100 patients with lung cancer (symptoms are not mutually exclusive). SOB = Shortness of Breath.

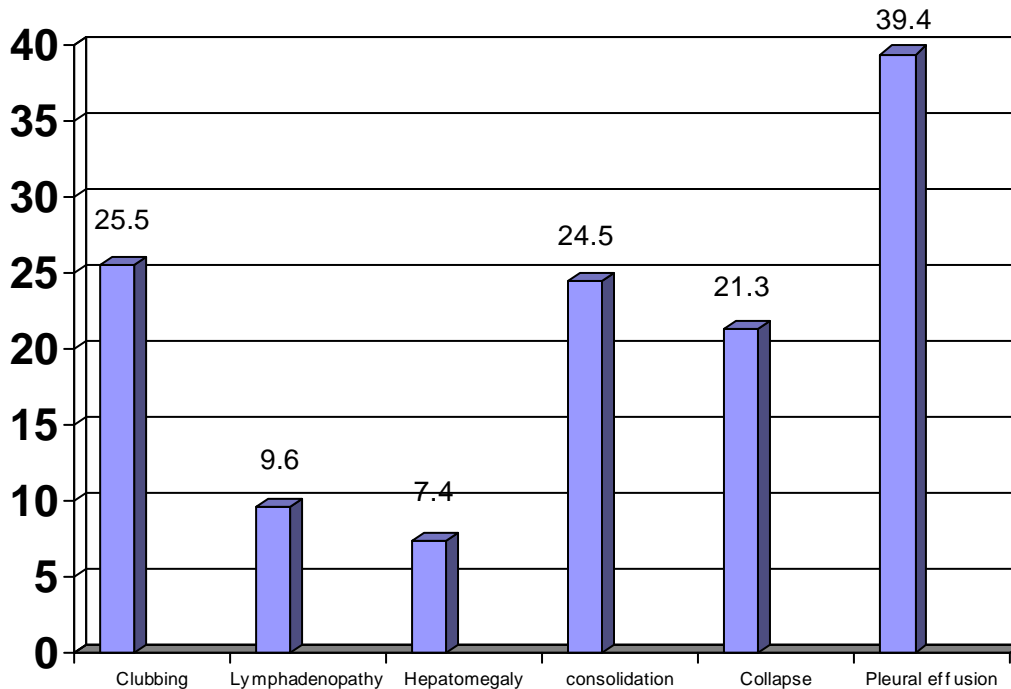


Fig 2. Frequency of signs, expressed as percentages, among the 100 patients with lung cancer (Signs are not mutually exclusive).

DISCUSSION

The present study has shown that the most common presenting symptom in lung cancer is persistent cough. This is in agreement with other studies that assessed symptoms of lung cancer.⁽¹⁰⁻¹³⁾ A rather unusual symptom in this cohort of patients is fever. Although fever is not a symptom of lung cancer per say, it can be a manifestation of an obstructive pneumonia caused by lung cancer. Fever, however, was a rare symptom in this group of patients. The importance of fever in the settings where this study was conducted probably comes from the fact that most patients presenting to respiratory clinics come with an infectious cause where fever is a predominant symptom.⁽⁵⁾ As the prevalence of other lung cancer symptoms in this study are similar to those recorded in other studies,⁽¹⁰⁻¹³⁾ the absence of fever in a patient presenting with a respiratory symptom should alert the physician to lung cancer as a possible cause.

Another remarkable finding in this study is the high percentage of patients with advanced disease. Generally in lung cancer, patients who have symptoms on presentation have a less favorable prognosis because the disease will have advanced by the time patients develop symptoms.⁽¹⁴⁾ Nevertheless, the percentage of those

presenting with advanced disease in our study exceeds those recorded in the literature.⁽¹⁴⁾ A possible explanation is delayed detection of lung cancer in these patients because the index of suspicion was not high and a proportion may have been thought to have chronic pulmonary infection like tuberculosis. Certainly, another differently designed study is needed to explore the cause of advanced disease on presentation. However, had lung cancer been detected early in this cohort, the prognosis would have been much better as they were generally younger patients,⁽¹⁵⁾ the majority of whom did not have co-morbidity that would have precluded tumour surgical resection or affected longevity.

The percentage of smokers in lung cancer patients in this study fall short of figures recorded in other epidemiological surveys.^(13,16,17) Smoking is a well-established cause of lung cancer.⁽¹⁶⁻¹⁸⁾ We believe that the likely explanation for these differences is cultural denial of smoking in our community. This is supported by epidemiological studies of smoking conducted in communities similar to ours using questionnaires which showed wide variation in prevalence and concluded that social, cultural, and religious inhibitions may have prevented smokers from providing accurate information about their smoking habits.⁽¹⁹⁻²¹⁾ We, therefore, consider

that the actual numbers of smokers among the population we studied is higher and may reach more than 90% as recorded in international surveys.^(16,17) There are, however, two further alternative possible explanations for the low prevalence of smoking among the present study population that we ought to consider: firstly, we have not assessed the role of passive smoking which increases the risk of lung cancer.⁽²²⁾ Hence, we cannot rule out the possible contribution of passive smoking to causing lung cancer in our subjects. Secondly, it is possible that risk factors other than smoking for lung cancer were important etiological factors in this study population.⁽²³⁾

The symptoms of lung cancer in this cohort of patients are similar to those recorded in other similar studies. A minority of patients presented with fever, but because the greatest proportion of patients presenting to respiratory clinics in our settings will have an infectious respiratory illness the absence of fever in a patient presenting with chronic respiratory symptoms should alert the physician to the lung cancer been a possible diagnosis. Most patients in this cohort have advanced disease on presentation although they were generally young and had no co-morbidity and therefore had the diagnosis been made early in these patients –for example by prompt investigation of patients who have persistent cough- their prognosis would have been much better.

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