Analysis of Lung Cancer Cases Presenting in Outpatient Department of University Hospital of Nepal

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ABSTRACT

Background

Lung cancer is one of the leading cause of cancer related death. Most common histopathology of lung cancer is non-small cell carcinoma of which adenocarcinoma is the most common. There are limited number of studies done in Nepal to know different aspects of lung cancer.

Objective

To know demographic parameters of patients diagnosed as lung cancer in a university hospital. The study also aims to know the different histopathological diagnosis of lung cancer.

Method

All the patients presenting to outpatient department (Cardio Thoracic and Vascular unit) of Dhulikhel Hospital, if are diagnosed as cancer of lung/bronchus will be included in the study. The duration of the study was January 2017 to December 2021. The details on age, gender, presenting symptoms, histopathology of lung cancer, operability will be included in database and will be analyzed.

Result

There were total of 127 patients diagnosed as lung cancer. Male:female ratio was 1.7:1. Overall mean age was 63.23 years (SD 13.5 years, Range 19-89 years). Non small cell carcinoma was the most common type of lung cancer with 83.7%. In non small cell carcinoma, most common type was Squamous cell carcinoma followed by undifferentiated and Adenocarcinoma. Only five (3.93%) cases were in operable stage.

Conclusion

Despite the fact that lung cancer is one of the most common cancer, patients usually present late and moslty are not in operable stage. This study shows that squamous cell carcinoma is the most common histopathology in lung cancer cases.

KEY WORDS

Lung Cancer, Smoker, Thoracotomy

INTRODUCTION

Lung cancer (including the cancer involving bronchus) is the most common cancer in male and third most common cancer in female.[1] It is also the leading cause of cancer related death in both male and female.[2] Overall incidence of lung cancer in Nepal was 4.4-4.6 per 100,000 population.[1,3] Smoker is the major risk factor for lung cancer.[2] A study done at Nepal found 85% of the lung cancer patient as male and 80% of lung cancer patient were smoker.[4]

The eight edition of TNM staging for non-small cell lung cancer was introduced in January 2017.[5-7] Lung cancer of stage up to IIIA has some role by surgical resection.[8-10] Most common histopathological diagnosis of lung cancer is non small cell lung cancer which comprises of about 84% of lung cancer followed by small cell lung cancer which is about 13% of all lung cancer.[11] Surgical intervention is usually preferred in early stage (Stage I and II) non small cell lung cancer and is rarely considered for small cell lung cancer.[12]

There are limited number of studies done in Nepal to know the various aspects of lung cancer patients. The study aims to know demographic parameters of patients diagnosed as lung cancer in a university hospital. The study also aims to know the different histopathological diagnosis of lung cancer diagnosed by Fine Needle Aspiration Cytology (FNAC) or bronchoscopy biopsy or histopathology report.

METHODS

This study is prospective observational study. All the patients presenting to outpatient department (Cardio Thoracic and Vascular unit) of Dhulikhel Hospital, if are diagnosed as cancer of lung/ bronchus will be included in the study. The duration of the study was January 2017 to December 2021. As all the eligible cases are included, the sampling is census sampling. For diagnosis of lung cancer histopathological diagnosis in the form of FNAC report or bronchoscopy biopsy or histopathology report will be compulsory. If more than one such investigation is sent and malignancy is found only in one report that report will be taken for diagnosing cancer.

This study has been approved by institutional review committee for ethical clearance. The details on age, gender, presenting symptoms, histopathology of lung cancer, operability will be included in database in excel and will be analyzed using SPSS 19.0. The nominal variables will be expressed in terms of percentage. The scalar variables will be expressed in terms of mean, standard deviation and range.

RESULTS

There were total of 127 patients diagnosed as lung cancer. Of them 80 (63%) were male patients and 47 (37%) were female patients. Male:female ratio was 1.7:1. Overall mean age was 63.23 years (SD 13.5 years, Range 19-89 years). Mean age in male was 63.21 years while that in female was 63.13 years (p=0.976). In terms of percentage of cases in different sides, it was highest in right side (55.91%) followed by left side (43.31%). There was only one case (0.79%) where the lesion was in both the sides. The number of investigation done was highest as FNAC which was 73 as shown in figure 1. This was followed by histopathology which was 42. In 12 patients diagnosis was done by fluid analysis.

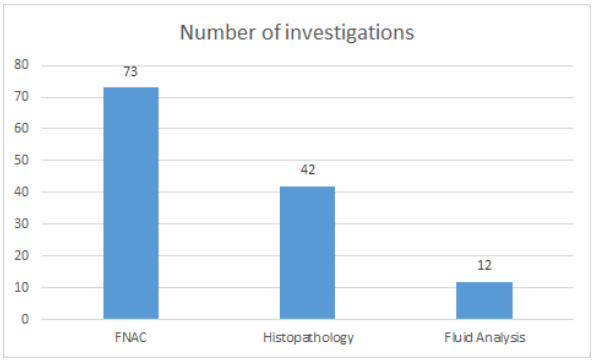

Figure 1. Number of cases detected by different investigations

Table 1 shows number and percentage of various lung cancer types. Non small cell carcinoma was the most common type of lung cancer with 83.7%. In non small cell carcinoma, most common type was Squamous cell carcinoma followed by undifferentiated and Adenocarcinoma. Percentage of small cell carcinoma was 13.3%. There were two cases of carcinoid tumor (%) and a case of metastatic tumor.

Table 1. Percentage of different lung cancer

Types	Subtype	Percentage
Non small cell carcinoma (Total 83.7%)	Squamous cell carcinoma	35.7
	Adenocarcinoma	23.5
	Undifferentiated	24.5
Small cell carcinoma		13.3
Other	Carcinoid tumor	2.0
	Metastatic tumor	1.0

Of the cases, only five (3.93%) were in operable stage. All the five cases underwent surgical intervention. Two cases underwent bilobectomy, two cases underwent lobectomy and a case underwent pneumonectomy.

DISCUSSION

There are very few studies regarding lung cancer in Nepal. In a study to know the epidemiological profile of lung cancer in Nepalese population, it was found that 85.6% of lung cancer cases were male and 80% of the patients were smoker.[4] Incidence of lung cancer has been found to be more in male compared to female. In our study, male:female ratio was 1.7:1. In a study done at China, male:female ratio was 2.03.[13] In a study done at Austria, male:female ratio was 1.5:1.[14] Difference in incidence of

smoking in male and female can be a reason for higher incidence in male. In some countries where the incidence of smoking is increasing in female and decreasing in male such as Spain, the incidence of lung cancer in female is increasing while that is decreasing in male.[15]

Mean age in male and female in our study was almost same. In a study done at Brazil, mean age in male was 64.6 years and in female it was 62.2 years which is very similar to our study.[16] In a study, fifty percent of men lung cancer cases and 30% of women lung cancer cases were smoker.[4] The incidence of lung cancer was highest in age 61-80 years.[4] Squamous cell carcinoma (51.2%) was the most common followed by adenocarcinoma (26.8%) and small cell carcinoma (22%).[4] In our study too, squamous cell carcinoma was the highest. In another study done at Nepal, most common histopathological variant was adenocarcinoma (37.7%) followed by squamous cell carcinoma (35.9%) and small cell carcinoma (24.5%).[17]

A study involving 678 patients found that squamous cell carcinoma was the most common histological type seen in 33% of the patients followed by adenocarcinoma seen in 30% of the patients. A study was done at Tribhuvan Teaching hospital in Nepal about histological types of lung cancer and its relation with smoking. The study found that squamous cell carcinoma was the most common type (73.3%).[18] All the patients with bronchogenic cancer were smoker.[18] In the same study 70% of lung cancer was found in right side while 30% was found in left side.[18] In a large scale study done at BP Koirala Memorial Cancer Hospital, Chitawan, Nepal involving 1000 patients with the pathological diagnosis of lung cancer, there were 41.3% of cases of squamous cell carcinoma.[19] The study had rate of curative resection of 6.7%.[19] With the treatment modality the five year survival was only 18%.[19]

Lung cancer has been divided in non small cell lung cancer (84% of cases), small cell lung cancer (13% of cases) and other types (3% of cases).[11] This is very similar to our finding. In subcategory of non small cell lung cancer, most common sub type is adenocarcinoma (40% of cases) followed by squamous cell carcinoma (35% of cases).[11] In our study however, most common subtype was squamous cell carcinoma.

Our study showed that lung cancer is more common in right side (55.91%) similar to previous studies done by Mohan et al. (52.3%) and Fatemeh et al. (53.2%).[20,21] Increased volume of right lung and presence of one more lobe in right lung can be a reason for lung cancer to be more in right side.[22]

Few distinction in outcome in right and left side lung cancer has been studied but only the side cannot be taken as a prognostic factor.[23] Since right lung has more functional significance due to more lobes and segments, long term survival after right sided pneumonectomy is less than on left side.[23] Resectability rate of lung cancer is very low. In our study this was found to be 3.93% similar to other studies. Higher resection rates parallel with better survival.[24,25] One reason for low resectability for lung cancer is late presentation of the patients. One study done in Nepal found that mean time taken for assessment at tertiary hospital from the onset of symptoms is 4.2 months.[26]

Details on the survival of the cases are not studied which is a main limitation of the study. Also staging of lung cancer was not studied.

CONCLUSION

Despite the fact that lung cancer is one of the most common cancer, patients usually present late and moslty are not in operable stage. This study shows that squamous cell carcinoma is the most common histopathology in lung cancer cases. Screening program to detect cases in early stage is an urgent need in our country.

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