J. Dhaka National Med. Coll. Hos. 2023;29 (01): 12-19

Original Article

Correlation of Clinical, Radiological and Histopathological Pattern of Bronchial Carcinoma

Md.Shahen[1], Ashraful Alam Khan[2], Mohammad Asaduzzaman Khan[3], Md. Mashukur Rahaman Chisty[4],Md.Faysal Khan[5], Nasrin Alam[6]

[1]Associate Professor(c.c), Department of Respiratory Medicine, Dhaka National Medical College,[2]Medical Officer, National Institute of Diseases of the Chest and Hospital, [3]Assistant Professor(c.c), Department of Medicine, Dhaka National Medical College, [4]Assistant Professor ,Department of Thoracic Surgery, Enam Medical College,[5] Assistant Professor(c.c), Department of Medicine, Dhaka National Medical College, [6] Register, Department of Obstetrics & Gynaecology, Dhaka National Medical College

Abstract

Background: Lung cancer was the most commonly diagnosed cancer as well as the leading cause of cancer death in males in 2008 globally Lung cancer is one of the most deadly tumours known. It is accurately found by many radiographic testing methods occasionally initiated for an unrelated ailment. In light of new histology guided therapeutic modalities and lung cancer genetic categorization, histological characterisation of lung cancer has risen in prominence. The study was carried out to evaluate the correlation of clinical, radiological and histopatholgical pattern of bronchial carcinoma.

Methods: This observational cross sectional study was carried out in the Department of medicine (Respiratory wing) Bangabandhu Sheikh Mujib Medical University (BSMMU) and National Institute of chest disease (NIDCH) during the period of September 2011 to February 2012. A total of 60 admitted patients with a clinical, radiological and histological diagnosis of bronchial carcinoma were enrolled in the study. Complete sociodemographic characteristics, smoking status, radiological, and histopathological characteristics of the tumor were recorded in the study. CT scan of the chest was done in the majority of the patient. CT-guided FNAC and US guided FNAC tissue sampling from lung lesions followed by histopathological examination was done to diagnose the appropriate tumor type. After collecting the data, the statistical analyses were performed using the licensed version of Statistical Package for the Social Science Version 23 (SPSS-23). The p value <0.05 was considered as statistically significant.

Results: Out of 60 cases, majority 27 (45.0%) patients were belonged to age 51 to 60 years with mean age was 58.4±10.2 years Male: female ratio was 4.1. Three fourth (75.0%) of the patients were smoker. Almost three fourth (73.3%) were right sided lesion and 26.7% were left sided lesion. In x-ray findings, 35.0% was found effusion followed by 31.7% consolidation, 15.0% consolidation & effusion (15%), 10.0% collapse & consolidation and 8.3% collapse. Squamous cell carcinoma (50.0%) was the most common histological pattern of bronchial carcinoma followed by adenocarcinoma (45.0%) and small cell carcinoma (5.0%). Diagnostic procedure of bronchial carcinoma was bronchoscopy & biopsy (15.0%), followed by CT guided FNAC (50.0%), US guided FNAC (5.0%), pleural biopsy (5.0%), lymph node biopsy (20.0%) and pleural fluid (5%). Significant association was found between cough, chest pain, face & neck swelling and histological type ($p<0.05$). Physical findings such as anaemia, clubbing, palpable lymph node, features of SVC obstruction, feature of consolidation, features of pleural effusion, features of collapse and hepatomegaly were significantly associated with histological type ($p<0.05$). Regarding X-ray findings, consolidation, fffusion and collapse & consolidation were significantly associated with histological type ($p<0.05$).

Conclusion: The results of this study showed that some correlation of clinical presentation with radiological and histopathological pattern of bronchial carcinoma. In this study found association found between histological type with cough, chest pain, face and neck swelling, anaemia, clubbing, palpable

lymph node, features of SVC obstruction, consolidation, feature of pleural effusion and collapse and hepatomegaly. This study also found association between histological type with following radiological findings such as consolidation, effusion and collapse & consolidation.

Key words: Bronchial carcinoma, clinical presentation, radiological, histopatholgoical findings.

Introduction

Lung cancer is most common and serious health problem worldwide. All over world it accounts for 13% of all new cancer cases and 19% of cancer related deaths.[1] At the end of the 20th century, Bronchogenic Carcinoma had become one of the leading causes of preventable death. It was a rare disease at the start of that century, but exposures to new etiologic agents and an increasing life span combined to make lung cancer a scourge of the 20th century. Lung cancer is the most common malignancy worldwide and is the leading cause of cancer deaths in men and women.[2] Lung cancer was the most commonly diagnosed cancer as well as the leading cause of cancer death in males in 2008 globally. Among females, it was the fourth most common diagnosed cancer and the second leading cause of cancer death. Lung cancer accounted for 13% (1.6 million) of the total cases and 18% (1.4 million) of the death in 2008.[3]

In Bangladesh, a new study suggests that lung cancer cases have been on the rise, experts attributing this to an increase in smoking and air pollution. According to the latest Hospital Cancer Registry Study, there is a reportedly near 200% rise in the country's lung cancer cases in just three years. A total of 5,887 people with lung cancer were admitted to the National Institute of Cancer Research and Hospital (NICRH) from January 2015 to December 2017. In 2014, the figure was 1983, which indicates a nearly 200% rise in cases in just three years.[4]

Majority of patients having lung cancer had direct exposure to smoking. Squamous cell carcinomas and small cell carcinomas shows significant association with smoking.[5] Occupational exposures and air pollution approximately accounts for 2% to 9% of lung cancers. Approximately 85% patients with lung cancer are symptomatic at presentation. In remaining patients, lung cancer is diagnosed by various radiological methods initiated for an unrelated health problem and histopathological examination.[6]

Lung cancer is caused by mutations, causes abnormal proliferation of the mutated cells, and the formation of a tumor. Previously, lung cancer was broadly classified into non-small cell lung cancer (NSCLC) and small cell lung cancer (SCLC). The availability of newer histology-guided targeted molecular therapies for lung cancer has made this classification inadequate. So, histopathological and genomic characterization of lung cancer has now become the topic of interest.[7] Targeted therapy or immunotherapy is mainly based on subtype analysis for mutation. Another changing trend has been observed in the morphological variety, with adenocarcinoma becoming equal to or even overtaking squamous cell carcinoma sometimes in some Asian and most Western countries.[8]

Bronchial carcinoma fall into four major histological types: Viz. Squamous -cell carcinoma, small cell carcinoma, large-cell carcinoma and adenocarcinoma. These four types account for about 95% of all cases of primary lung cancer.[9] Common cell types of bronchial carcinoma are small cell lung carcinoma (SCLC) – (20%) and non small cell lung carcinoma (NSCLC)- (8%). Among NSCLC, Squamous -cell carcinoma (35%), large-cell carcinoma (15%) and adenocarcinoma (20%).[10] Although squamous-cell carcinoma has for many years been the most common histological type, adenocarcinoma has been increasing in incidence over last 20 years.[10]

In patients with metastatic disease the diagnosis can often be confirmed by needle aspiration or biopsy of affected lymph nodes, skin lesion, liver or marrow. CT scan of brain, radio nuclide bone scanning, liver ultrasound. Bone marrow biopsy can be reserved for patients with clinical, hematological or biochemical evidence of tmours spead to such site.[11] Our observation is to expertise about correlation of clinical presentation and different radiological and histopathological pattern of bronchial carcinoma. So that we can optimally manage the cases of bronchial carcinoma associated with high mortality and morbidity.

Materials and methods

This observational cross sectional study was carried out in the Department of medicine (Respiratory wing) Bangabandhu Sheikh Mujib Medical University (BSMMU) and National Institute of chest disease

(NIDCH) during the period of September 2011 to February 2012. A total of 60 admitted patients with a clinical, radiological and histological diagnosis of bronchial carcinoma were enrolled in the study. Patients age >20 years both gender and clinical and histological findings of bronchial carcinoma were enrolled in the study. Age <20 years, patients present with typical features of pneumonia like abrupt onset, duration <7 days, high fever, rusty sputum , neutrofhillic leucocytosis, gm(+)ve, or gm(-) ve, organisms, on sputum examination, patients presented with clinical features of tuberculosis like low grade fever, night sweating , cough with sputum , chest X-ray P/A view – patchy opacities with or without cavitations ,sputum – acid fast bacilli (+)ve, tuberculin test(+)ve and when detailed history, clinical examination and roentgenographic findings and histology raised the possibility that the lung cancer is a secondary one as opposed to primary tumor were excluded from the study. Complete sociodemographic characteristics, smoking status, radiological, and histopathological characteristics of the tumor were recorded in the study. The performance status of patients was documented using the Eastern Cooperative Oncology Group scale (ECOG). CT scan of the chest was done in the majority of the patient. CT-guided FNAC and US guided FNAC tissue sampling from lung lesions followed by histopathological examination was done to diagnose the appropriate tumor type. After collecting the data, the statistical analyses were performed using the licensed version of Statistical Package for the Social Science Version 23 (SPSS-23).Chi square test was used for categorical variables as shown cross tabulation. The p value <0.05 was considered as statistically significant.

Results

Out of 60 cases, majority 27 (45.0%) patients were belonged to age 51 to 60 years. The mean age was 58.4±10.2 years with ranging from 38 to 82 years. Male patients were predominant 48(80.0%) and 12(20.0%) patients were female. Male: female ratio was 4.1. Half (50.0%) of the patients were cultivator and 30(50.0%) were come from middle class family (Table-I). 75.0% patients were smoker & ex-smoker and 25.0% were non-smoker (Figure-I). Almost three fourth (73.3%) were right sided lesion and 26.7% were left sided lesion.

In x-ray findings, 35.0% was found effusion followed by 31.7% consolidation, 15.0% consolidation & effusion (15%), 10.0% collapse & consolidation and 8.3% collapse (Table-II). Regarding histopathological findings, squamous cell carcinoma (50.0%) was the most common histological pattern of bronchial carcinoma followed by adenocarcinoma (45.0%) and small cell carcinoma (5.0%) (Table -III). All (100.0%) patients was found cough in squamous cell carcinoma, 21(77.8%) in adenocarcinoma and 3(100.0%) in small cell carcinoma. Three (10.0%) patients was found chest pain in squamous cell carcinoma, 6(22.2%) in adenocarcinoma and 3(100.0%) in small cell carcinoma. Six (22.2%) patients was found face & neck swelling in adenocarcinoma and not found in squamous cell carcinoma & small cell carcinoma respectively. Which were statistically significant (p<0.05) among three groups (Table-IV). In relation to anaemia (p=0.0.04), clubbing (p=0.001), feature of consolidation (p= 0.025) and features of collapse (p=0.036) in squamous cell carcinoma and not found in small cell carcinoma. Palpable lymph node (p=0.017), features of SVC obstruction (p=0.017) in relation to adenocaricnoma. Features of pleural effusion (p=0.001) in relation to adenocarcinoma and small cell carcinoma. Hepatomegaly (p=0.001) in relation to small cell carcinoma (Table-V). 16(53.3%) patients was found consolidation in squamous cell carcinoma, 3(11.1%) in adenocarcinoma and not found in small cell carcinoma. Eighteen (66.7%) patients was found effusion in adenocarcinoma, 3(100.0%) in small cell carcinoma and not found in squamous cell carcinoma. Six (20.0%) patients was found collapse & consolidation in squamous cell carcinoma and not found in adenocarcinoma & small cell carcinoma respectively. Which were statistically significant (p<0.05) among three groups (Table-VI).

Table I: Demographic characteristics of the study population (n=60)

	Frequency	Percentage
Age (years)		
30-40	3	5.0
41-50	15	25.0
51-60	27	45.0
61-70	9	15.0
>70	6	10.0
Mean±SD	58.4±10.2	

Sex		
Male	48	80.0
Female	12	20.0
Occupational status		
Service	10	16.7
Business	8	13.3
Cultivator	30	50.0
Housewife	12	20.0
Socio-economic status		
Lower	27	45.0
Middle	30	50.0
Higher	3	5.0

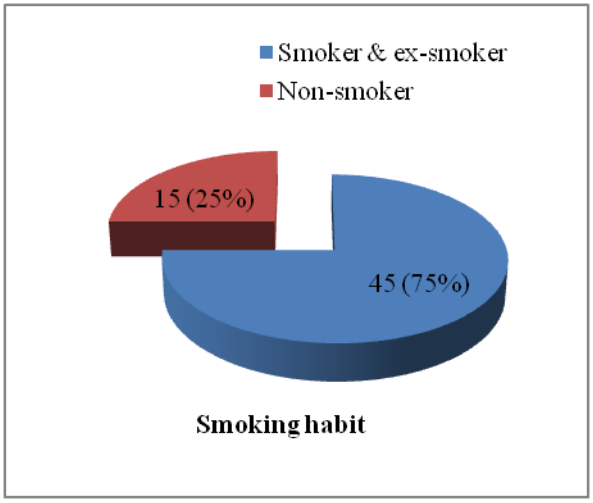

Figure I: Smoking habit of the study population

Table II: Radiological findings of the study population (n=60)

	Frequency	Percentage
Site of lesion		
Right	44	73.3
Left	16	26.7
X-ray findings		
Consolidation	19	31.7
Collapse	5	8.3
Effusion	21	35.0
Collapse & consolidation	6	10.0
Consolidation & effusion	9	15.0

Table III: Histological type of the study population (n=60)

	Frequency	Percentage
Squamous cell carcinoma	30	50.0
Adenocaricnoma	27	45.0
Small cell carcinoma	3	5.0

Table IV: Association of pulmonary symptoms and histological type of bronchial carcinoma (n=60)

Pulmonary symptoms	Histological type			p value
	Squamous cell carcinoma (n=30)	Adenocaricnoma (n=27)	Small cell carcinoma (n=3)	
Cough	30 (100.0%)	21 (77.8%)	3 (100.0%)	0.017[s]
Dyspnoea	15 (50.0%)	15 (55.6%)	3 (100.0%)	0.251[ns]
Wheeze	12 (40.0%)	12 (44.4%)	0 (0.0%)	0.329[ns]
Chest pain	3 (10.0%)	6 (22.2%)	3 (100.0%)	0.001[s]
Haemoptysis	6 (20.0%)	3 (11.1%)	0 (0.0%)	0.487[ns]
Fever	18 (60.0%)	21 (77.8%)	3 (100.0%)	0.174[ns]
Loss of weight	27 (90.0%)	24 (88.9%)	3 (100.0%)	0.831[ns]
Loss of appetite	27 (90.0%)	21 (77.8%)	3 (100.0%)	0.329[ns]
Horseness	3 (10.0%)	0 (0.0%)	0 (0.0%)	0.206[ns]
Face & neck swelling	0 (0.0%)	6 (22.2%)	0 (0.0%)	0.017[s]

s= significant, ns= not significant

p value reached from chi square test

Table V: Association of physical findings and histological type of bronchial carcinoma (n=60)

Physical findings	Histological type			p value
	Squamous cell carcinoma (n=30)	Adenocaricnoma (n=27)	Small cell carcinoma	
Anaemia	15 (50.0%)	6 (22.2%)	0 (0.0%)	0.038[s]
Clubbing	27 (90.0%)	15 (55.6%)	0 (0.0%)	0.001[s]
Palpable lymph node	0 (0.0%)	6 (22.2%)	0 (0.0%)	0.017[s]
Features of SVC obstruction	0 (0.0%)	6 (22.2%)	0 (0.0%)	0.017[s]
Feature of consolidation	12 (40.0%)	3 (11.1%)	0 (0.0%)	0.025[s]
Features of pleural effusion	3 (10.0%)	24 (88.9%)	3 (100.0%)	0.001[s]
Features of collapse	6 (20.0%)	0 (0.0%)	0 (0.0%)	0.036[s]
Hepatomegaly	0 (0.0%)	0 (0.0%)	3 (100.0%)	0.001[s]

s = significant

p value reached from chi square test

Table VI: Association of X-ray findings and histological type of bronchial carcinoma (n=60)

X-ray findings	Histological type			p value
	Squamous cell carcinoma	Adenocaricnoma (n=27)	Small cell carcinoma	
Consolidation	16 (53.3%)	3 (11.1%)	0 (0.0%)	0.001[s]
Collapse	5 (16.7%)	0 (0.0%)	0 (0.0%)	0.065[ns]
Effusion	0 (0.0%)	18 (66.7%)	3 (100.0%)	0.001[s]
Collapse & consolidation	6 (20.0%)	0 (0.0%)	0 (0.0%)	0.036[s]
Consolidation & effusion	3 (10.0%)	6 (22.2%)	0 (0.0%)	0.329[ns]

s= significant, ns= not significant

p value reached from chi square test

Discussion

Now a days, majority of cancer deaths are due to lung cancer.[12] Endobronchial lung biopsy is an effective and less invasive procedure useful for diagnosis of lung cancer. Lung cancer is a serious health problem and the leading cause of cancer-related deaths worldwide. This reflects disparities in demographic variables, socioeconomic status, and geographic variations. That's why it is very much required to correlate epidemiology and clinicopathological profile for a better understanding of tumor biology, prevention, and control.

The age of the patients was ranging from 38 to 82 years with means age of 58.40(±10.20) years (mean ±standard deviation) table shows the distribution of age group., Forty -five percent of the patients were in the age group of 51 to 60 years, 25.0% were in the age group of 41 to 50 years, 15.0% were in 61-70 years, 10.0% were >70 years and 5.0% were in the age group of 30 to 40 years. Akl et al.[13] described that the incidence declined before the age of 40 with 5.9% of cases and after the age of 70 with 7.7% of cases, and no cases were found before age of 26 years, indicating that bronchogenic carcinoma was less common in these age groups. In a study done by Sarfraz et al.[5] reported that the majority of the cases, 67 (83.75%) were between 50 to 80 years with mean age of lung carcinoma patients were 59.9 years. This showed that lung cancer mostly occur in older age. Age group in the present study is comparable to the study conducted by Mandal et al.[14] which show that age ranged between 39 to 85 years

In this study out of 60 patients 48 (80.0%) patients were male and 12(20.0%) patients were female. Male: female ratio was 4.1: Similarly, Sarfraz et al.[5] revealed that 67 (83.7%) were males and 13 (16.3%) were females. Male to female ratio was 5.15:1. Akl et al.[13] obtained that male patients were predominant 82.2% and female was 17.8%. The sex ratio reported in various Indian studies ranged from 4.2:1 to 7:1.[15-17]

In this study 75.0% percents of the patients were smoker and ex-smoker and 25.0% were non-smoker. Thirty – five percent of the patients used 05 to 10 sticks/day, 25.0% of the patients used 11 to 20 sticks/day, 05.0% of the patients used 21 to 30 sticks/day, 10.0% of the patients used 30 to 40 sticks/day and another 25.0% were non smoker. Sixty percents of the patients used to smoke 31-30 yrs, 20% of the patients used to smoke 11-20 yrs, 13.3% of the patients used to up to 10 years and 6.7% of the patients used 31-40 yrs. Sarfraz et al.[5]

described that seventy one (88.75%) patients were smokers. The smoker to non-smoker ratio was 7.8:1. The smoker to non-smoker ratio in the study was 7.8:1 which is comparable with the study by Rawat et al.[17] and Khan et al.[19] the risk of lung cancer development is 20-40 times higher in lifelong smokers compared to non-smokers.[20]

In this series cough (90.0%) was the most frequent pulmonary symptoms of bronchial carcinoma, followed by dyspnoea (55.0%), wheeze (40.0%), chest pain (20.0%) and haemoptysis (15.0%). This finding was similar to the study of Spiro et al.[21] that 60.0% patients of bronchial carcinaoma were presented as dyspnoea. Sarfraz et al.[5] study showed that the commonest symptom was cough present in 87.5% patients. This is comparable to various other studies.[17,22,23] Chest pain was present in 46.25% patients in over study. This is also comparable to various studies.[23,23] Various studies have reported haemoptysis in 11% to 24% lung cancer patients.[18,24] Akl et al.[13] reported that cough was the most common symptom (347 patients; 85.9%) and was followed by dyspnea (276 patients; 68.3%), expectoration (270 patients; 66.8%), chest pain (241 patients; 59.7%), hemoptysis (142 patients; 35.1%).

In this study observed that 73.3% were right sided lesion and 26.7% were left sided lesion. In x-ray findings, 35.0% was found effusion followed by 31.7% consolidation, 15.0% consolidation & effusion (15%), 10.0% collapse & consolidation and 8.3% collapse. Sarfraz et al.[5] reported that right lung was most commonly involved 37 (67.3%) cases. Mass lesion was the most common radiological finding in 37 (67.3%) cases followed by collapse in 11 (20%) cases. Albasri[25] also observed that the right lung was involved in 53.9% of the cases, whereas the left lung was the most common site in 21.2% of the cases. In 24.9% of the cases, the side was not recorded.

In this study squamous cell carcinoma (50.0%) was the most common histological pattern of bronchial carcinoma, followed by adenocarcinoma (45.0%), small cell carcinoma (5.0%) and no any large cell carcinoma was found. Sarfraz et al.[5] revealed that squamous cell carcinoma was found to be the most common type of

carcinoma lung and was found in 40 (50%) patients, followed by small cell carcinoma which was present in 12 (15%) patient. Gupta et al.[17] also found that most common location of small cell carcinoma was central (50%). Adenocarcioma most commonly manifests as peripheral mass or a malignant pleural effusion. In present study adenocarcinoma constituted 5.45% of lung cancer, mostly present in upper zone (66.7%) and most commonly associated with pleural effusion. This is comparable with the study conducted by Rawat et al.[18] which observed that adenocarcinoma commonly manifested as peripheral mass or a malignant pleural effusion. In the cell type distribution reported by Radzikowska et al.[26] squamous cell carcinoma had the highest cell type incidence (52.1%) followed by small cell carcinoma (20.8%) while adenocarcinoma represented only 11.3% of the cases. According to Shetty et al.[27] study, squamous cell carcinoma also presented 44.5% of cases followed by adenocarcinoma (18.5%) and small cell carcinoma (17.2%). Albasri[25] reported that there were 66 (47.8%) cases of adenocarcinoma (AC), 35 (25.3%) cases of squamous cell carcinoma (SCC), 12 (8.7%) cases of neuroendocrine tumor (NET), 11 (8%) cases of metastatic carcinoma, 5 (3.6%) cases of lymphoma, 3 (2.2%) cases of sarcomatoid carcinoma, 3 (2.2%) cases of adenosquamous carcinoma, and 3 (2.2%) cases of large cell carcinoma. Another study done by Akl et al.[13] showed that most common histopathological cell type was squamous cell carcinoma (37.4%), followed by adenocarcinoma (29.5%), small cell carcinoma (14.9%), large cell carcinoma (7.2%) and undifferentiated carcinoma (11.1%).

Diagnostic procedure of bronchial carcinoma was bronchoscopy & biopsy (15.0%), followed by CT guided FNAC (50.0%), US guided FNAC (5.0%), pleural biopsy (5.0%), lymph node biopsy (20.0%) and pleural fluid (5%). Akl et al.[13] reported that bronchoscopic biopsy was positive in 107 of 151 patients (70.9%) of the squamous cell carcinoma cases. The cases of bronchogenic carcinoma that was diagnosed by CT guided biopsy were 86 cases (21.3% of all cases).

This study observed that all (100.0%) patients was found cough in squamous cell carcinoma, 21(77.8%) in adenocarcinoma and 3(100.0%) in small cell carcinoma. Three (10.0%) patients was found chest pain in squamous cell carcinoma, 6(22.2%) in adenocarcinoma and 3(100.0%) in small cell carcinoma. Six (22.2%) patients was found face & neck swelling in adenocarcinoma and not found in squamous cell carcinoma & small cell carcinoma respectively. Which were statistically significant ($p<0.05$) among three groups.

Present study observed that relation to anaemia ($p=0.0.04$), clubbing ($p=0.001$), feature of consolidation ($p= 0.025$) and features of collapse ($p=0.036$) in squamous cell carcinoma and not found in small cell carcinoma. Palpable lymph node ($p=0.017$), features of SVC obstruction ($p=0.017$) in relation to adenocaricnoma. Features of pleural effusion ($p=0.001$) in relation to adenocarcinoma and small cell carcinoma. Hepatomegaly ($p=0.001$) in relation to small cell carcinoma. Sarfraz et al.[5] reported that pleural effusion was observed in 12 (21.8%) cases, most of them having squamous cell carcinoma.

In this study observed that 16(53.3%) patients was found consolidation in squamous cell carcinoma, 3(11.1%) in adenocarcinoma and not found in small cell carcinoma. Eighteen (66.7%) patients was found effusion in adenocarcinoma, 3(100.0%) in small cell carcinoma and not found in squamous cell carcinoma. Six (20.0%) patients was found collapse & consolidation in squamous cell carcinoma and not found in adenocarcinoma & small cell carcinoma respectively. Which were statistically significant ($p<0.05$) among three groups. Sarfraz et al.[5] also noted that adenocarcinoma was most commonly associated with pleural effusion. Akl et al.[13] reported that pleural effusion was more frequent with adenocarcinoma, as 51% of cases that presented with pleural effusion were adenocarcinoma and this may be due to that most of adenocarcinoma located peripherally and it can cause pleural invasion. The cases of bronchogenic carcinoma that was diagnosed by CT guided biopsy were 86 cases (21.3% of all cases). Most cases that were diagnosed by FNAB (FNAB done under CT) was adenocarcinoma (38 patients; 44.2%), followed by squamous cell carcinoma (36 patients; 41.9%), while only 5 cases (5.8%) of the small cell carcinoma, 3 cases (3.5%) of the large cell

carcinoma and 4 cases (4.7%) of the undifferentiated carcinoma were diagnosed by CT guided biopsy.This study was conducted in a tertiary hospital only and may not reflect the actual situation of the country. This was a observational cross sectional study and sample size was small, may not give the actual conclusion.

Conclusion:

The results of this study showed that some correlation of clinical presentation with radiological and histopathological pattern of bronchial carcinoma. In this study found association found between histological type with cough, chest pain, face and neck swelling, anaemia, clubbing, palpable lymph node, features of SVC obstruction, consolidation, feature of pleural effusion and collapse and hepatomegaly. This study also found association between histological type with following radiological findings such as consolidation, effusion and collapse & consolidation. Early detection and early treatment to reduce the morbidity and mortality associated with lung cancer in addition to imparting awareness on harmful effects of smoking and how to prevent the disease in general population is the need of this region. Furthermore, a longitudinal study using large sample size should be conducted to find out the magnitude of the lung cancer in our country.

References

1. Siegel R, Naishadham D, Jemal A. Cancer statistics, 2012. Cancer J Clin 2012; 62:10-29.
2. Alberg AJ, Ford JG, Samet JM. Epidemiology of lung cancer: ACCP evidence-based clinical practice guidelines. Chest. 2007;132(3):29S-55S.
3. Jemal A, Bray F, Center MM, Ferlay J, Ward E, Forman D. Global cancer statistics. CA: a cancer journal for clinicians. 2011;61(2):69-90.
4. https:// www. dhakatribune. com/health/ 2021 /01/25/reportlung - cancer-on-the-rise-in-Bangladesh.
5. Sarfraz S, Gupta R, Bhardwaj S. Histopathological patterns of endobronchial lung biopsy specimen in lung cancer along with clinico - radiological correlation. International Journal of Contemporary Medical Research 2018;5(11):K1-K5.
6. Gould MK, Maclean CC, Kuschner WG. Accuracy of Positron Emission Tomography for Diagnosis of Pulmonary Nodules and Mass Lesions: A Meta Analysis. JAMA 2001; 285: 914-924.
7. Standfield L, Weston AR, Barraclough H, Van Kooten M, Pavlakis N. Histology as a treatment effect modifier in advanced non-small cell lung cancer: a systematic review of the evidence. Respirology 2011;16:1210–20.
8. Mohan A, Latifi AN, Guleria R. Increasing incidence of adenocarcinoma lung in India: Following the global trend? Indian J Cancer 2016;53:92–5.
9. Huq S, Maghfoor I, Perry M. Lung Cancer, Non-Small Cell. *eMedicine Oncology* [online]. Available at: http:/ /www. emedicine. medscape.com /article/279960. Accessed on 20 May 2011.
10. Minna J.D. Neoplasms of the Lung. *In:* Fauci AS, Kasper DL, Longo DL, Braunwald E, Hauser SL, Jameson JL, et al. eds. *Harrison's Principlesod Internal Medicine* . 17th edition. New York: McGraw-Hill Companies: 2008; 506-515.
11. Innes JA, Reid PT. Respiratory disease. *In:* Boon NA, Colledge NR, Walker BR, eds. *Davidson's Principles and practice of Medicine.* 21st edition. Churchill Livingstone: London : 2010; 698-703.
12. Jemal A, Thomas A, Murray T. Cancer statistics 2002. CA Cancer J Clin 2002; 52: 23-47.
13. Akl YM, Emam RH, Sabry IM, Ali AA. Clinico-pathological profile of bronchogenic carcinoma cases presented to Chest Department, Cairo University in the last 10 years. Egyptian Journal of Chest Diseases and Tuberculosis. 2013;62(4):705-12.
14. Mandal SK, Singh TT, Sharma TD, Amrithalingam V. Clinico-pathology of lung cancer in a regional cancer center in Northeastern India. Asian Pacific journal of cancer prevention. 2013;14(12):7277-81.
15. Dubey N, Arti J, Varudkar H. A clinico-pathological profile of primary lung cancer patients presenting in a rural medical College of central India. Panacea Journal of Medical Sciences. 2016;5:124-9.
16. Malik PS, Sharma MC, Mohanti BK, Shukla NK, Deo SV, Mohan A, Kumar G, Raina V. Clinico-pathological profile of lung cancer at AIIMS: A changing paradigm in India. Asian pacific journal of cancer prevention. 2013;14(1):489-94.

17. Gupta R, chowdhary I, Singh P. Clinical, radiological and histological profile of primary lung carcinomas. JK Science 2015; 17: 146-151.

18. Rawat J, Sindhwani G, Gaur D, Dua R, Saini S. Clinico-pathological profile of lung cancer in Uttarakhand. Lung India: official organ of Indian Chest Society. 2009;26(3):74.

19. Khan NA, Afroz F, Lone MM, Teli MA, Muzaffar M, Jan N. Profile of lung cancer in Kashmir, India: a five-year study. The Indian Journal of Chest Diseases & Allied Sciences. 2006;48(3):187-90.

20. Ozlu T, Bulbul Y. Smoking and lung cancer. Tuberk Toraks 2005;53:200–9.

21. Spiro SG, Gould MK, Colice GL. Initial evaluation of the patient with lung cancer: symptoms, signs, laboratory tests, and paraneoplastic syndromes: ACCP evidenced-based clinical practice guidelines (2nd edition). Chest, 2007;132(3 Suppl):149S-160S.

22. Agarwala A, Roy PP, Sarkar SK, Das SK, Banerjee A. Clinico-pathological profile of diagnosed patients of lung cancer with its relation to smoking habit and educational status in a medical college of Paschim Medinipore West Bengal, India- A Tribal area prospective. Asian Pac.J.Health Sci. 2014; 1: 479-485.

23. Kumar M, Sharma DK, Garg M, Jain P. Clinicopathological Profile of Lung Cancer–Changing Trends in India. Int J Res Med. 2016;5(2):57-62.

24. Pandhi N, Malhotra B, Kajal N, Prabhudesai RR, Nagaraja CL, Mahajan N. Clinicopathological profile of patients with lung cancer visiting Chest and TB Hospital Amritsar. Sch J App Med Sci. 2015;3(2D):802-9.

25. Albasri AM. A histopathological analysis of lung cancers. An 11-year retrospective study from Al-Madinah Al-Munawwarah, Saudi Arabia. Saudi Medical Journal. 2019;40(5):503.

26. Radzikowska E, Głaz P, Roszkowski K. Lung cancer in women: age, smoking, histology, performance status, stage, initial treatment and survival. Population-based study of 20 561 cases. Annals of oncology. 2002;13(7):1087-93.

27. Shetty CM, Lakhkar BN, Gangadhar VS, Ramachandran NR. Changing pattern of bronchogenic carcinoma: A statistical variation or a reality?. Indian Journal of radiology and imaging. 2005;15(02):233-8.