

SURVEY OF LUNG CANCER OCCURRING AFTER CHRONIC LUNG DISEASES AT PHAM NGOC THACH HOSPITAL DURING TWO YEARS 2022 – 2023

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INTRODUCTION

There are many chronic lung diseases, especially those with fibrosis and calcification, are going to progressing to lung cancer, including: old pulmonary tuberculosis, chronic obstructive pulmonary disease (COPD), bronchial asthma, interstitial fibrosis, and more recently, post-COVID-19 pulmonary fibrosis.

Our study investigates the occurrence of lung cancer after old pulmonary tuberculosis, COPD, bronchial asthma, interstitial fibrosis, and post-COVID-19 pulmonary fibrosis.

METHODS

Study subjects: All lung cancer patients admitted to Pham Ngoc Thach Hospital during the two years from January 1, 2022 to December 31, 2023, with a history of previous pulmonary tuberculosis, chronic obstructive pulmonary disease, bronchial asthma, interstitial lung fibrosis, and post-COVID-19 pulmonary fibrosis.

Research methods: The study employed a retrospective, descriptive cross-sectional statistical method, describing a series of clinical cases. SPSS 20.0 software was used, employing a two-sided test with T-test and χ^2 . Statistical significance was < 0.05 . Data collected included: the incidence of lung cancer per disease type, age, sex, histological type, treatment history, and recorded DFS (Disease-Free Survival).

RESULTS

General Data. Total number of UTP cases with a history of chronic lung diseases: 393 cases on 3106 lung cancer cases (12.65%). Gender: Male: 238 cases (60.56%) - Female: 155 cases (39.44%). Male:Female ratio: 3:2. Average age in patients with lung cancer: 59.13 ± 5.54 years. Smoking status: 274 cases, 69.72%.

Imaging studies. In most cases, besides lung tumors, the most common findings are pulmonary fibrosis and may be have calcification.

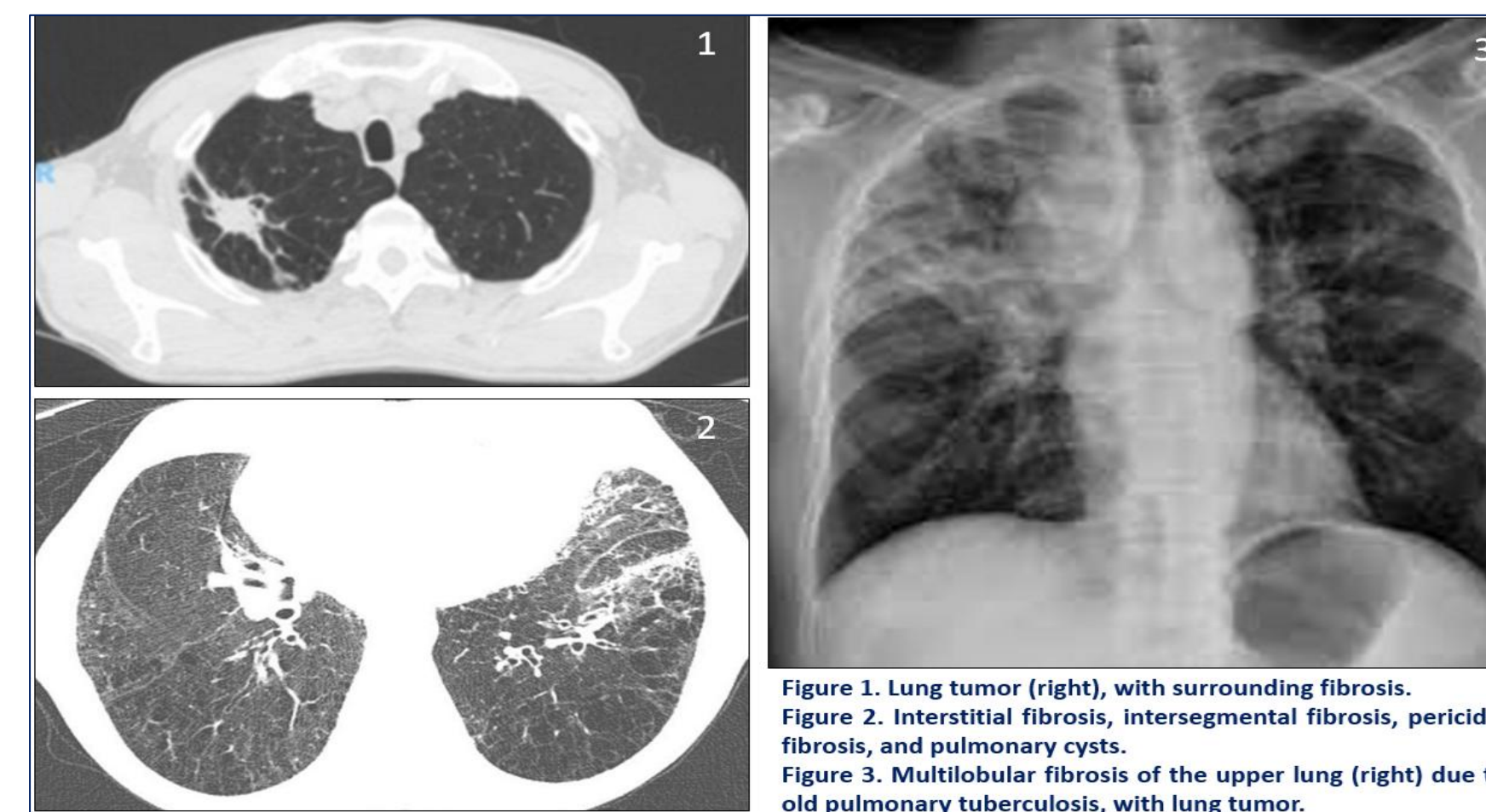


Table 1. Distribution of chronic lung disease cases and time to onset of lung cancer

Chronic lung diseases	Case No.	Percent	Total number of hospitalized cases of CLDs	Percentage of each type of CLDs	The average time for lung cancer to develop after a diagnosis of CLDs
Old pulmonary tuberculosis	106	26,97	3083	3,44	$38,67 \pm 4,81$ mths
COPD	135	34,35	2866	4,71	$43,52 \pm 5,64$ mths
Bronchial asthma	33	8,39	1876	1,76	$56,8 \pm 6,93$ mths
ILDs (27 cases IPF, 4 cases FNSIP, 3 cases COP và 7 cases progressive fibrosing ILD)	41	10,43	263	15,59	$15,6 \pm 3,77$ mths
Post COVID-19 pulmonary fibrosis	78	19,83	1378	5,66	$9,5 \pm 2,25$ mths

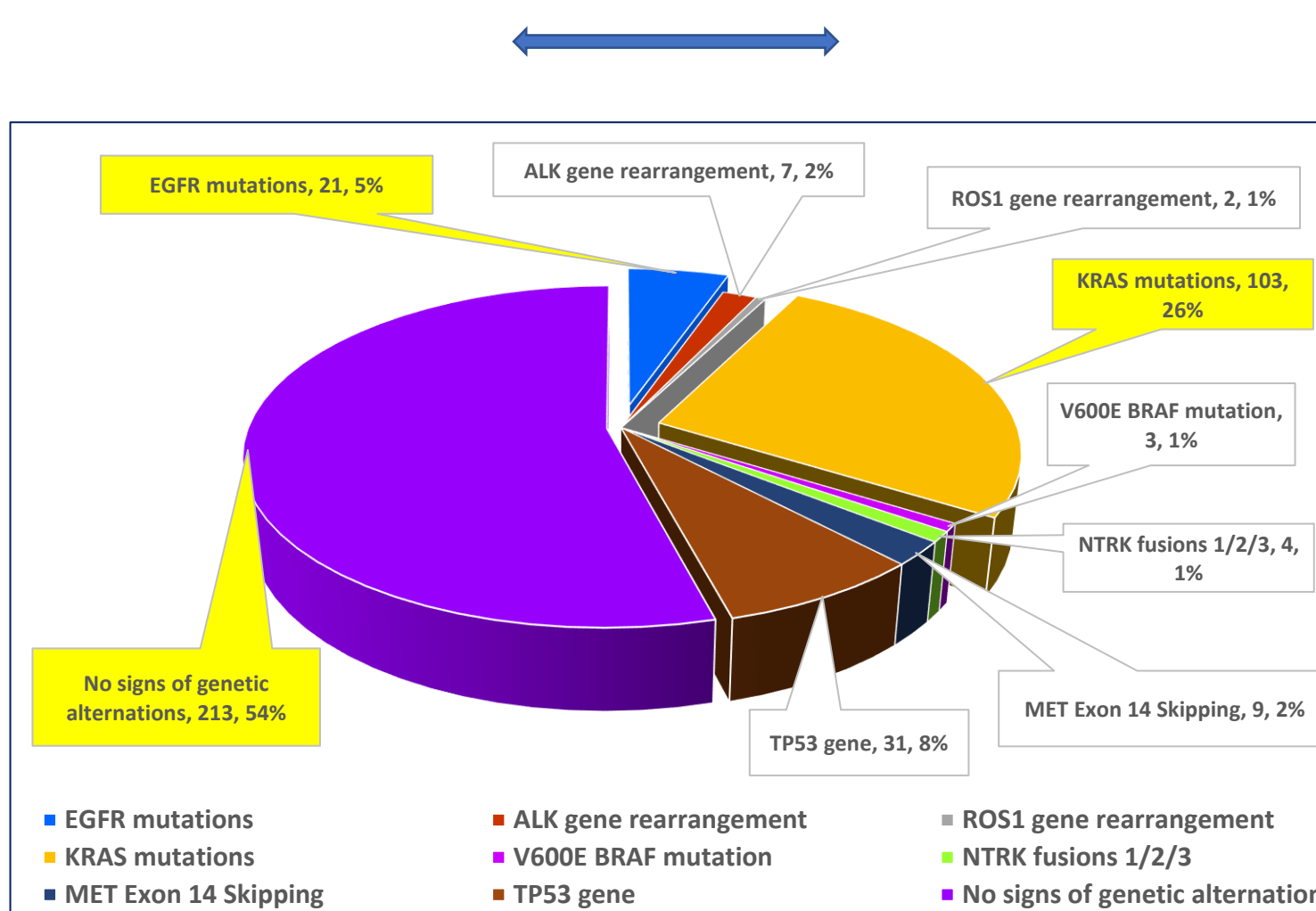


Chart 2. Distribution of genetic mutations in lung cancer occurring after chronic lung disease

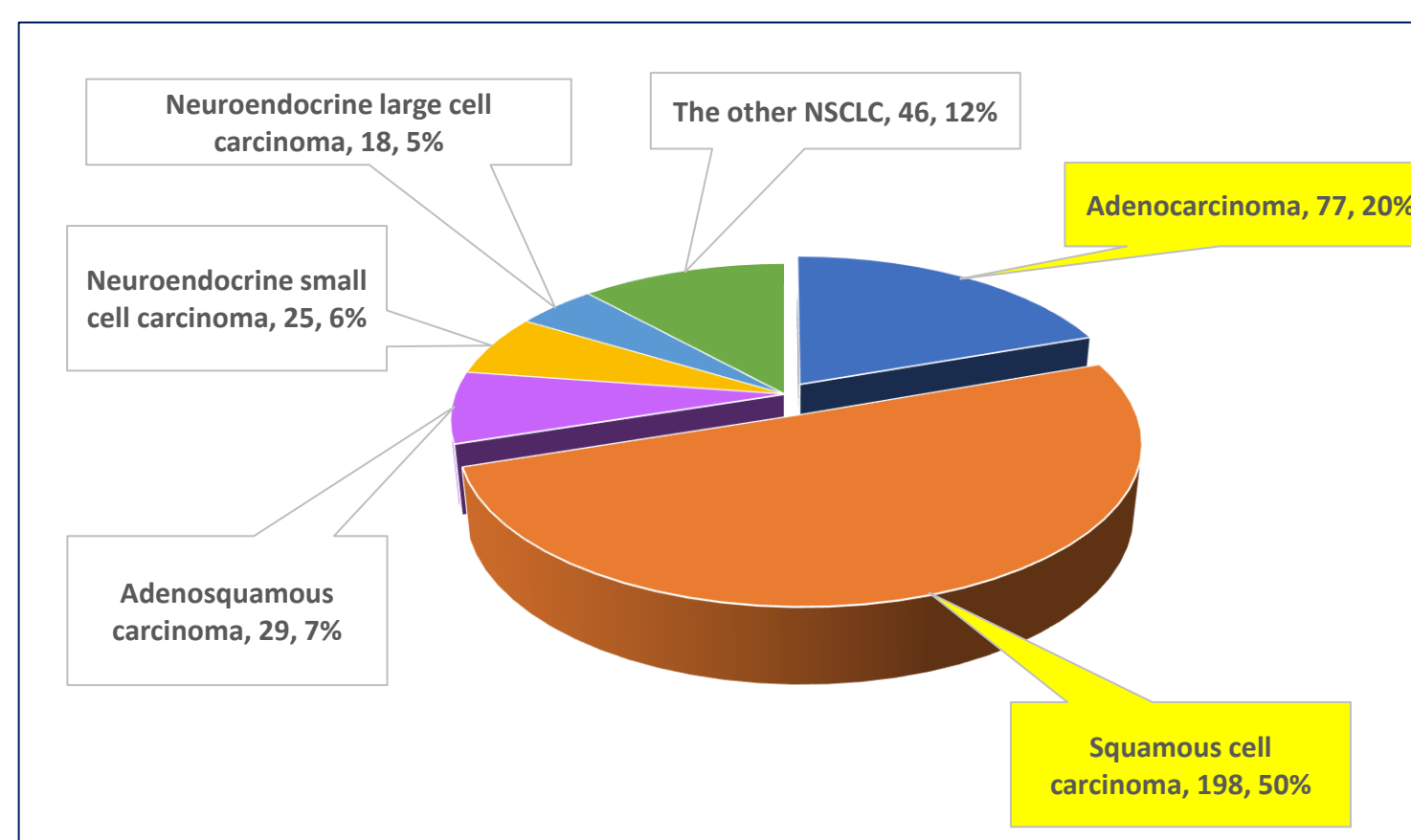


Chart 1. Distribution of lung cancer histological types developing in patients with chronic lung diseases

Table 2. Comparison of disease-free survival time in treatment regimens

Therapeutics	Cases No.	DFS Time	P-Value
Platinum-epotides chemotherapy	334	$9,5 \pm 1,8$ months	0,03781 $< 0,05$
EGFR TKIs (gefitinib, erlotinib, afatinib, osimertinib)	21	$14,5 \pm 4,87$ months	0,01932 $< 0,05$
ALK TKIs (alectinib, ceritinib và crizotinib)	4	$10,6 \pm 1,56$ months	0,02663 $< 0,05$
ROS1 TKIs (crizotinib và entrectinib)	1	11,2 months	0,06334 $> 0,05$
KRAS G12C Inhibitors (sotorasib và adagrasib)	21	$11,8 \pm 1,85$ months	0,07164 $> 0,05$
Immunotherapy (pembrolizumab, atezolizumab)	12	$13,4 \pm 2,8$ tháng	0,02784 $< 0,05$
General data for all therapies	393	$12,65 \pm 3,55$ tháng	

DISCUSSION AND CONCLUSION

- Lung cancer developing after chronic lung disease accounted for approximately 12.65% of all lung cancer cases.
- Patients were predominantly male, with an average age of 59 years, and most were smokers.
- ILDs showed the highest incidence of subsequent lung cancer.
- Squamous cell carcinoma was the most common histological subtype.
- KRAS and EGFR were the most frequently identified molecular alterations.
- Patients treated with EGFR TKIs and immunotherapy achieved the most favorable outcomes.

→ *Careful monitoring and optimal management of chronic lung diseases, especially fibrotic lung diseases, may facilitate earlier detection and improve outcomes of lung cancer.*

REFERENCES & ACKNOWLEDGEMENTS

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