ORIGINAL RESEARCH PAPER

Oncology

DESCRIPTIVE ANALYSIS OF LUNG CANCER LATERALITY AND EGFR MUTATION IN QUITO-ECUADOR

KEY WORDS:

Llerena Jurado María Ruth	General Practitioner
Peñafiel Erazo Adrián Rodrigo*	General Practitioner *Corresponding Author
Mayorga Poveda Johanna Paulina	General Practitioner
Núñez Peñaloza Soraya Marianela	General Practitioner
Ramos Veintimilla Wendy Yadira	General Practitioner
Albán Intriago José Daniel	General Practitioner
Molina Pinto Janine Alejandra	General Practitioner
Chango Tituaña María de los Ángeles	General Practitioner

ABSTRACT

Introduction: In Ecuador, lung cancer ranks eighth in men and ninth in women.
The objective of the present investigation is to determine in a descriptive analysis a relationship between EGFR mutation and laterality.
Methods: 37 histopathological samples were analyzed during the years 2015-2016 using descriptive analysis of frequency as well as crossing of variables.
Results: Of the 37 patients, EGFR mutation could be determined in 18 samples (48.6%) while 19 did not present a mutation (51.4%) with a distribution of pulmonary lobes with a certain predisposition to be found in the upper lobes and in the right lung.
Conclusion: The distribution of lung cancer in our research is similar to that demonstrated in international studies in which right lung cancer occurs more frequently than the left one, as well as the upper lobe above the lower one, having to recommend that we should start prospective studies and evaluate survival according to laterality.

INTRODUCTION

Lung cancer is a devastating disease with a poor prognosis and survival, however the advent of tyrosine kinase inhibitors against epidermal growth factor receptors (EGFR) is changing this perspective with increased survival in patients who consume this medication over Observation group or the group that received chemotherapy (1–4)

In Ecuador, lung cancer has a low incidence in this country, ranking eighth in men and ninth in women according to the Hospital Registry (5).

Little has been studied regarding the laterality of lung cancer McWilliam et al, indicates that tumors on the right side show lower overall survival than tumors on the left side 15 versus 18 months (6).

The objective of the present investigation is to describe in a descriptive way a relationship between the location of lung cancer and laterality in patients treated in an oncological institution of Quito-Ecuador.

METHODS

37 histopathological samples of patients treated during the years 2012-2016 of the registry of institutional electronic medical records were analyzed, which were divided into: smokers, smokers in the past, non-smokers and unknown, using descriptive analysis of frequency as well as crossing of variables, for the statistical analysis, the IBM-SPSS program was used.

RESULTS

37 samples were analyzed of which, 7.3% correspond to non-smokers from whom EGFR mutation was determined and its histopathological distribution is shown in

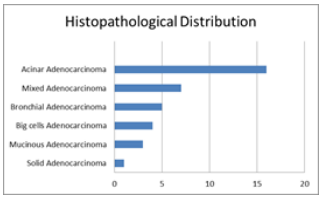

Figure 1.

Regarding the EGFR mutation, it was possible to determine of the 37 samples 18 presented mutation (48.6%) while 19 did not present mutation (51.4%) with a distribution of pulmonary lobes with a certain predisposition to be in the upper lobes as shown in

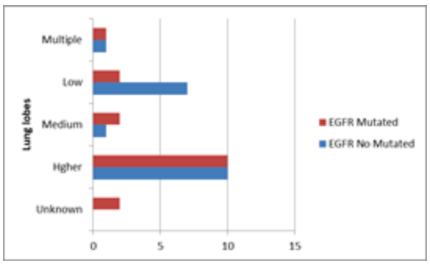

Figure 2.

Regarding the smoking habit we can see that EGFR mutation expression is found in a greater predisposition in those non-smoking patients in relation to smokers, however there was a small number of smoking patients who presented EGFR mutation as shown in

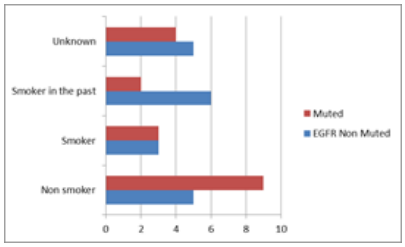

Figure 3.

DISCUSSION

By Bo Jia, the EGFR mutation was found more frequently in tumors located in the right lung over the left, concluding that although this phenomenon is uncertain, much consideration should be taken to analyze this mutation when it occurs in this location. (7)

Bo Jia in his study of survival in terms of laterality in lung cancer describes 53496 tumors in the right lung and 36911 in the left lung without differences in survival in terms of laterality but if more predisposition to be located in the right lung. (7)

Perhaps the only article that talks about laterality and EGFR is the one presented by Bo Jia, indicating a certain predilection for the right lung, instead we have seen in our research a predilection for the upper lobe, perhaps because more oxygen is concentrated in this area and there is a greater predisposition for free radical formation.

In conclusion we can say that the distribution of lung cancer in our research is similar to that demonstrated in international studies in which right lung cancer occurs more frequently than the left one, as well as the upper lobe above the lower one, having to recommend that we should start prospective studies and evaluate survival according to laterality to have our own data.

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