To define the mutational profiling of a Brazilian series of NSCLC and to correlate with clinicopathological features and tobacco exposure.

Background

Lung cancer patients usually present very low survival rates.

Patients diagnosed at initial stages of NSCLC present higher survival rates (Figure 1).

Non-Small Cell Lung Cancer (NSCLC) is the most common histologic type of lung cancer.

NSCLC is divided in 3 histologic subtypes: adenocarcinoma, squamous cell carcinoma (SCC) and large cells.

Mutational profiling of adenocarcinoma and SCC are distinctive worldwide (Figure 2).

NSCLC patients harboring EGFR mutations are benefited by targeted therapy with tyrosine kinase inhibitors.

The mutational profiling and the knowledge about recurrent mutations in Brazilian NSCLC is limited.

Therefore, the detection of the mutational landscape of Brazilian NSCLC tumors is crucial for tailored therapy.

Aim

The main objectives are to:

1. Define the mutational landscape of Brazilian non-small cell lung cancer.
2. Describe the mutational profiling of NSCLC and to correlate with clinicopathological features and tobacco exposure.

Material and Methods

NSCLC cases

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<th>NSCLC cases</th>
<th>n=40</th>
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<td>Barretos Cancer Hospital</td>
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Histology, clinical staging and tobacco exposure data were retrieved from all patients.

Results

NSCLC cases

- Adenocarcinoma n=29
- Squamous Cell Carcinoma n=11

Initial stages (I/II) n=21

Advanced stages (III/IV) n=8

Tobacco exposure

Never smokers n=7

Current / former smokers n=33

Conclusions

- The mutational landscape of lung adenocarcinoma and SCC are clearly different.
- A noteworthy number of pathogenic mutations was identified in this initial stages-enriched series. Our results may contribute to improve the knowledge about the molecular pathogenesis of NSCLC to better guide the clinical management with targeted therapies.