**DETECTION OF PREINVASIVE AND PRENEOPLASTIC LESIONS USING BIOLOGICAL AND GENOMIC LUNG CANCER BIOMARKERS IN A RISK CHILEAN POPULATION**

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**ABSTRACT**

Background: Lung cancer (LC) is the leading cause of cancer mortality worldwide and the leading cause of cancer mortality in Chile and other Latin American countries. The identification of LC biomarkers has been considered for decades as the most promising strategy for the early detection of LC, a cancer with a poor prognosis and a high mortality rate. To improve the early detection and diagnosis of LC, biomarkers have been focused on the detection of preinvasive and preneoplastic lesions, which are currently identified as the best options for early detection of LC. In this context, the aim of this project is to identify new biomarkers for the detection of LC in a risk Chilean population.

Methods: A total of 217 high-risk subjects were enrolled in interventional Santiago and Antofagasta regions (Chile). High-risk subjects were enrolled in these regions based on a Risk Survey of the Health Ministry of the country. In total, 178 (81.9%) were male and 39 (18.1%) were female, with a mean age of 60.4 ± 9.5 years. The age range was between 40 and 80 years. All subjects were followed for a mean of 2 years, with a range of 1-4 years.

Results: A total of 217 high-risk subjects were enrolled in interventional Santiago and Antofagasta regions. Eighty-four (38.8%) of these subjects were male and 133 (61.2%) were female, with a mean age of 60.4 ± 9.5 years. The age range was between 40 and 80 years. For the first time, the association between LC risk factors and specific biomarkers was identified. The association between the presence of specific biomarkers and the presence of LC risk factors was statistically significant (p < 0.05).

Conclusions: The results obtained in this study suggest that biomarkers for the early detection of LC, including preinvasive and preneoplastic lesions, can be identified in a risk Chilean population. These biomarkers may be useful for the early detection and prevention of LC, improving the outcomes of patients with this disease.