Research Article

Impact of Histopathological Diagnosis with Ancillary Immunohistochemical Studies on Lung Cancer Subtypes Incidence and Survival: A Population-Based Study

Bordoni Andrea, Bongiovanni Massimo, Mazzucchelli Luca, and Spitalé Alessandra

1 Ticino Cancer Registry, Institute of Pathology, 6600 Locarno, Switzerland
2 Division of Clinical Pathology, Institute of Pathology, 6600 Locarno, Switzerland

Correspondence should be addressed to Bordoni Andrea, andrea.bordoni@ti.ch

Received 26 September 2011; Accepted 7 November 2011

1. Introduction

Lung cancer is one of the most common cancers in the world, representing 17.1% of all cancers in men, 6.7% in women, and 12.2% in both sexes [1]. Of the histological types, adenocarcinoma (AC) has remained the most prevalent among women over the past three decades, with incidence rates increasing slowly over time in many countries. In contrast, squamous cell carcinoma (SqCC) has historically been the predominant tumour type in men, but the incidence has declined and converged with the corresponding incidence in women, which has remained fairly stable [2].

Traditionally, lung carcinoma was classified into histological types using standard histological techniques. The most critical step in histopathological diagnosis was to distinguish small cell carcinoma (SmCC) from the other lung carcinomas, which were collectively called the non-small cell lung carcinomas (NSCLCs); patients with the former were referred to chemotherapy, whereas patients with the latter were potentially eligible for surgery or different chemotherapies. Over the past few years, the emergence of targeted or combination treatment strategies has created new demands on histopathological diagnostics, as it is now recognised that the efficacy and toxicity of some new drugs are related to the histological type [3]. Consequently, the exact determination of histological type by a pathologist has become essential to making clinical decisions [4].

In this context, the integration of conventional histomorphological analysis with an immunohistochemical (IHC) panel that includes markers of squamous (i.e., p63, cytokeratin (CK) 5/6) and glandular (TTF-1, CK7) cell differentiation allows more accurate identification of the histotype [5–12]. Moreover, recent studies have demonstrated that the antibody panel approach may help to refine lung cancer...