Trends in net survival lung cancer in six European Latin countries: results from the SUDCAN population-based study

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Survival is a key measure of the effectiveness of a healthcare system. European Latin countries have some similarities in their health systems; it is thus interesting to examine their differences in survival from cancer, here, lung cancer. The aim of the SUDCAN collaborative study was to compare the trends in the 1- and 5-year net survival from lung cancer and the trends in the excess mortality rates between six European Latin countries (Belgium, France, Italy, Portugal, Spain and Switzerland). The data were extracted from the EUROCAN-5 database. First, the net survival was studied over the 2000–2004 period using Pohar-Perme estimator. For trend analyses, the study period was specific to each country. The results are reported from 1992 to 2004 in France, Italy, Spain and Switzerland and from 2000 to 2004 in Belgium and Portugal. The analyses were carried out using a flexible excess rate modelling. Overall, the 1-year net survival from lung cancer ranged between 36% (Spain) and 43% (Belgium and Switzerland) and the 5-year net survival ranged between 11% (Spain) and 15% (Belgium and Switzerland). Between 1992 and 2004, the age-standardized survival increased considerably at 1 year, but increased less at 5 years after diagnosis. This increase was observed at ages 60 and 70, but was less obvious at age 80. There was little difference in net survival from lung cancer between European Latin countries, particularly in the more recent years. However, survival was slightly lower in Spain and Portugal than in France, Italy, Belgium and Switzerland. High-resolution studies with data on treatment, stage at diagnosis and comorbidities are needed to understand the reasons for these differences. European Journal of Cancer Prevention 25: S70–S76 Copyright © 2016 Wolters Kluwer Health, Inc. All rights reserved.

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Introduction
The SUDCAN study aims to compare cancer net survivals between Belgium, France, Italy, Portugal, Spain and Switzerland. In Europe, lung cancer is the fourth most frequent cancer in both sexes and the first cause of death from cancer. In 2012, lung cancer accounted for 16% of all cancers in men and 7.4% in women (http://eco.iarc.fr/eucan).

In 2012, in the six countries under study, the age-standardized (world) incidence rates ranged from 34.2 (Portugal) to 56.6 (Belgium) per 100 000 person-years in men and from 8.3 (Portugal) to 20.7 (Switzerland) per 100 000 person-years in women (Ferlay et al., 2013). The European mean age-standardized 5-year net survival from lung cancer was 13.0% in the EUROCAN-5 study (De Angelis et al., 2014).

Worldwide, lung cancer is often diagnosed at late stages, is one of the most difficult cancers to cure and has one of the lowest survivals worldwide. This is mainly because of, in the majority of patients, the lack of signs and symptoms during the early phases of the neoplastic growth, which reduces the possibility of curative surgical treatment (Boyle and Levin, 2008).

For meaningful survival comparisons between countries or time periods, a reliable indicator is needed. Net survival from cancer is the survival that would be observed if cancer were the only cause of death. This major epidemiological indicator thus enables comparisons between countries without interference from other causes of death. The mortality rate associated with net survival is called the excess mortality rate (EMR); it corresponds to the mortality because of cancer that adds to the expected mortality because of other causes. Thus, it is very interesting to provide, in addition to the net survival, a detailed description of the dynamics of the EMR over the time elapsed since diagnosis.