

Trends in incidence and mortality of lung cancer in Switzerland: possible explanations and open questions

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Background

Based on US population-level data, it has been suggested that novel treatment advances, particularly targeted therapies, have contributed to a sharp fall in NSCLC mortality. Switzerland is a high-income country, with a universal, highly performant health care system and easy access to novel drugs but with different dynamics concerning the smoking epidemic than the US (25.3% in 2016 in CH vs 13.7% in 2018 in US).

Figure 1

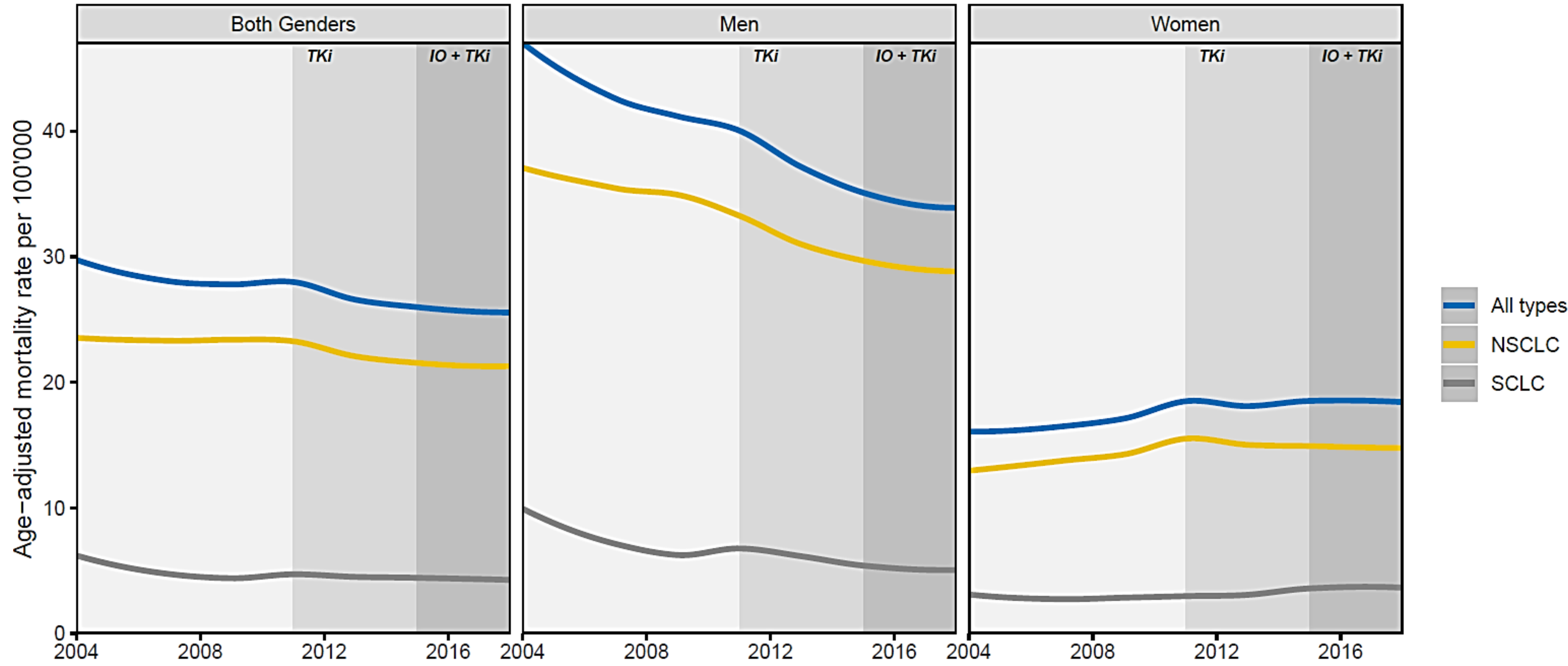
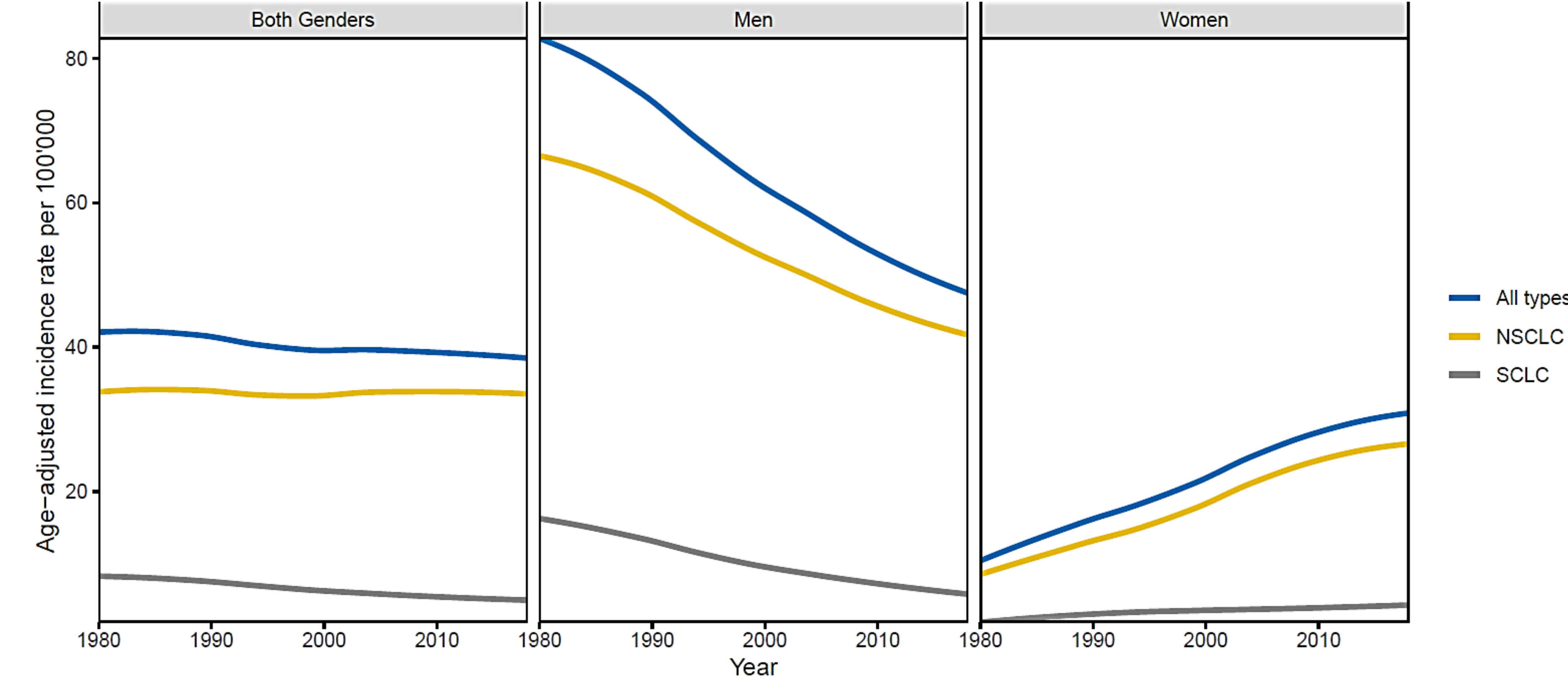


Figure 2



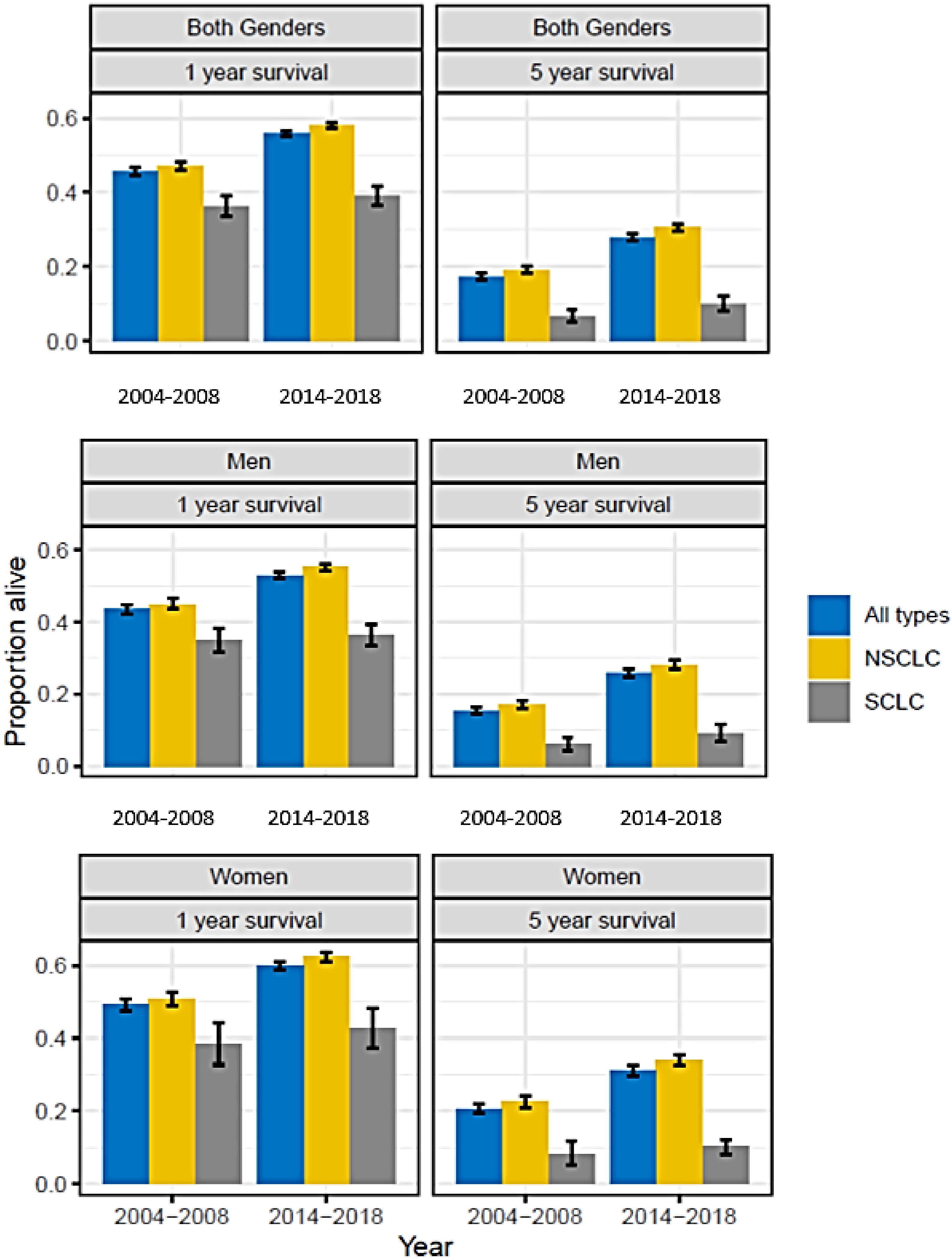
Material and methods

We used population-based data from Swiss cancer registries to analyze the trends in incidence, mortality and survival of NSCLC and SCLC. Data on incidence were available between 1980 and 2018. As the tumor registry infrastructure developed regionally and gradually, the percentage of the represented population increased from a minimum of 41% in 1980 up to 94% in 2017. Mortality rates were incidence-based, selecting deaths not from official vital statistics but from the National Cancer Incidence dataset (coverage 22%). Survival rates were calculated for two five-year periods over a ten year-gap: 2004-2008 and 2014-18

Results

Overall incidence for NSCLC and SCLC was stable from 1980 to 2018. We noted an important gender-related difference, with a decrease in men and increase in women, especially for NSCLC. (Figure 1) Decreases in lung cancer incidence-based mortality rates were observed from 2004 to 2018 (29.3 [26.7;32.2] vs 24.7 [22.7;26.9]), again with important differences between genders. (Figure 2) Survival rates in Switzerland for NSCLC between 2004-2008 and 2014-2018 were: 1-y: 47.2% vs 58.1%, 5-y: 19.1% vs 30.5% (Figure 3) Survival rates in Switzerland for SCLC between 2004-2008 and 2014-2018 were: 1-y: 36.3% vs 39%, 5-y: 6.7% vs 10% (Figure 3)

Figure 3



Conclusions

These findings should be regarded as the result of a multifactorial improvement in care, probably driven by early disease detection and improved multidisciplinary care, including more accurate staging, surgery, radiotherapy, systemic treatments, and supportive care. A single type of treatment is unlikely to have driven the improved mortality and survival outcomes in NSCLC in Switzerland within the time frame considered.