

Lung cancer trends by sex, age, histology, and stage:
a 1994-2020 population-based study of Girona, a province of Spain

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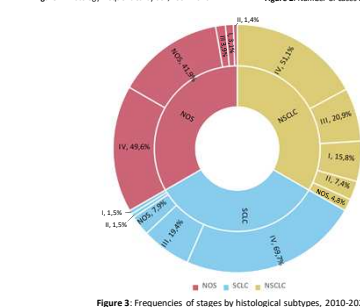
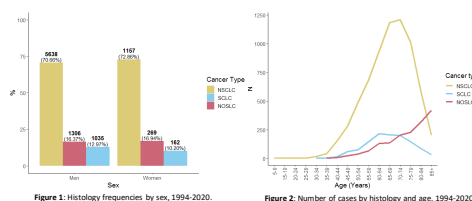
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OBJECTIVE

- Lung cancer (LC) is strongly associated with modifiable exposures, mainly tobacco.
- Efforts to change collective habits and develop better diagnostic techniques have been made for last decades.
- It could have had an impact on LC characteristics.
- The aim of this study is to analyze incidence and trends by sex, histology, and stage of LC in a population-based study over 27 years in Girona.

RESULTS

- From 1994 to 2020, 9,567 LC cases were recorded.
- Between 2010-2020, stages were available (n= 4,564 cases). (Figure 3)
- Mean (\pm SD) age was 68 \pm 11 yrs.
- LC patients were predominantly men (83%) (Figure 1) and diagnosed at an advanced stage (stage IV: 53.1%).
- The most frequent histology was NSCLC (71%). (Figure 2)
- The overall ASR was 58.7 new cases per 100,000 p-y (95%CI: 57.5; 59.9).
- The highest ASR was 230.0 in the 75-79 years group.



METHODS

- Data on new LC cases between 1994-2020 was collected from the population-based Girona Cancer Registry.
- Stages were available from 2010-2020.
- Age-adjusted incidence rates (ASR) using 2013 European standard population were calculated per 100,000 person-years (p-y).
- There were stratified by age, sex, histology (non-small-cell lung cancer [NSCLC]/ small-cell-lung cancer [SCLC]) and stage at diagnosis.
- Poisson regression models were used for trend analysis to find annual percentage change (APC).

- Trend analyses showed no statistically significant changes in overall period incidence (APC: -0.15%, 95%CI: -0.41; 0.12); however, there were statistically significant changes by subgroups.
- There was a significant increase in women (APC: 4.4%, 95%CI: 3.7; 5.0) and a decrease in men (APC: -1.15%, 95%CI: -1.44; -0.87). (Figure 4)

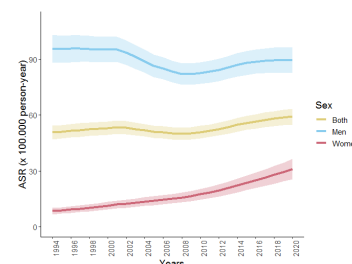


Figure 4: Annual ASR incidence trends incidence by sex, 1994-2020 period

- By histology, trend changes were observed in SCLC which had a -1.43% APC (95%CI: -2.04; -0.82) during the 1997–2020, and in NSCLC which had an increase of 0.5% during all period. (Figure 5)

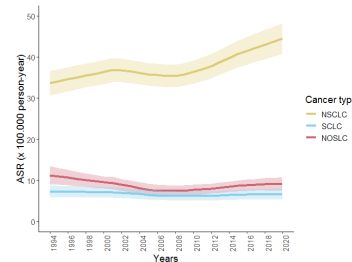


Figure 5: Annual ASR incidence trends by histological subtypes, 1994-2020

ANALYSIS BY STAGE (2010-2020)

- By stage, we observed statistically significant trend changes; an increase during 2015-2020 for stage I (APC: 9.74%, 95%CI: 5.29; 14.19) and during 2010-2020 for stage IV (APC: 1.27%, 95%CI: 0.37;2.16). (Figure 6)

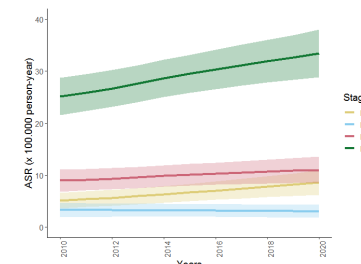


Figure 6: Annual ASR incidence trends by stage, 2010-2019 period

CONCLUSIONS

- The incidence of LC is not negligible, especially in men of advanced age.
- Global trends are not changing; however, in men are decreasing while in woman are not.
- Significant changes in incidence trends by stage and histology were also observed.