

TREND OF THE BURDEN OF LARYNX CANCER IN BRAZIL, 1990 TO 2019

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Introdução

Larynx cancer is one of the most common head and neck cancers, whose main risk factors are smoking and alcohol use, and its occurrence and prognosis depend on adequate and timely preventive measures¹⁻².

Symptoms in the initial stage of laryngeal cancer are mild, which makes early diagnosis difficult. The disease's progression can cause sequelae and disabilities, affecting important functions such as swallowing and speech, and resulting in poor survival and quality of life³⁻⁴.

The majority of the patients are diagnosed in advanced stages of larynx cancer, especially supraglottic tumors, when the therapeutic options have a notably lower impact on the prognosis⁴.

This study uses the estimates of the Global Burden Disease (GBD) Study to evaluate the trend of the burden of larynx cancer in Brazil, its states, and the Federal District between 1990 and 2019.

Resultados

All estimates for larynx cancer showed substantially higher values for men.

In 2019, the ASIR was higher in the state of Rio Grande do Sul; 3.83 (95%UI: 3.30;4.45) new cases per 100,000. Meanwhile, the lowest rate was found in the state of Piauí with 1.56 (95%UI: 1.34; 1.82) new cases per 100,000. The highest rate of larynx cancer deaths and DALYs in 2019 was verified in the state of Amazonas (2.87 and 73.67 per 100,000, respectively). Again, the lowest rates were found in the state of Piauí (1.21 and 31.12 per 100,000)

The highest decrease in incidence, death, and DALYs rates of larynx cancer from 1990 to 2019 were found in the state of São Paulo: AAPC of -1.1%, -1.8% and -1.9%, respectively. On the other hand, the highest increases in these estimates were observed in the state of Bahia: AAPC of 1.1%, 0.6% and 0.6%, respectively.

Interestingly we found an increase in the incidence rate between 1990 and 2019 among men aged 20 to 24 years (24.3%, 95%UI:2.31;49.0).

Casística e Métodos

This study counted on estimates from the GBD 2019, from the Global Health Data Exchange (GHDx), which includes data about 369 diseases from 204 countries and territories, from 1990 to 2019.

Estimates per 100,000 inhabitants considered: age-standardized incidence rate (ASIR), age-standardized mortality rate (ASMR), and disability-adjusted life years (DALYs), a composite indicator that expresses the total burden of diseases by combining in one measure the time lived with disability, Years Lived with Disability (YLD) and the time lost due to premature mortality, Years of Life Lost (YLL).

To explore regional inequalities, we calculated the mortality-to-incidence ratio (MIR), which was analyzed in relation to the sociodemographic index (SDI) for these regions in the same years.

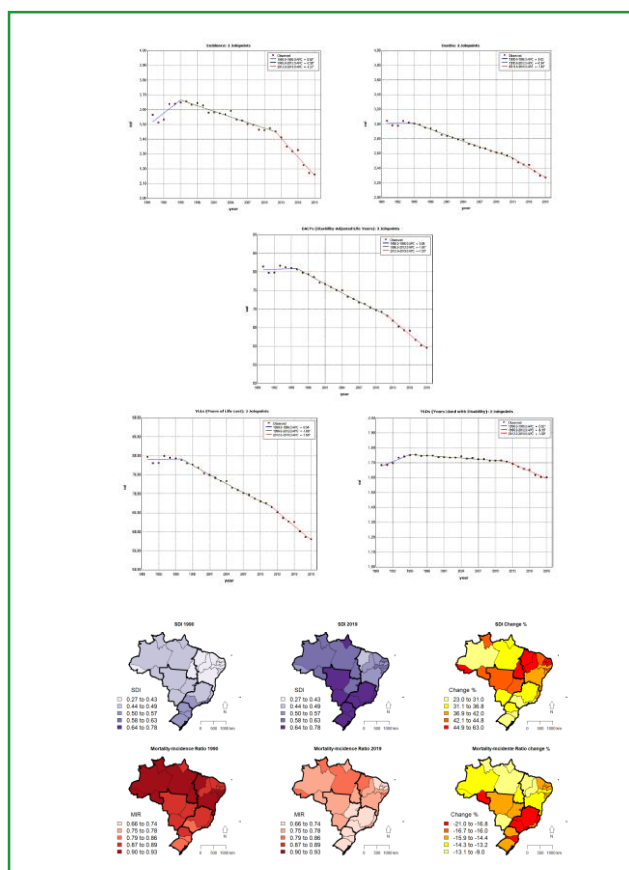
The annual percent changes (APC) and average annual percent changes (AAPC) in incidence and mortality rates in Brazil - with respective 95% confidence intervals - were calculated, as well as in DALYs and its fractions, using joinpoint regression analysis and the year as the independent variable.

Resultados

In Brazil, the ASIR in 1990 and 2019 were respectively 3.57 (95%UI: 3.45;3.70) and 3.16 (95%UI: 2.98;3.33) new cases per 100,000. Considering the entire period (1990 to 2019), the incidence showed a tendency of decline for both sexes: AAPC of -0.4% (95%CI: -0.6;-0.2) for women and of -0.3% (95%CI: -0.4;-0.2) for men.

The ASMRs in 1990 and 2019 were, respectively, 3.05 (95%UI: 2.93;3.16) and 2.27 (95%UI: 2.14;2.39) deaths per 100,000. The mortality showed a tendency of decline for both sexes: AAPC of -0.1% (95%CI: -1.1;-0.9), being -1.0% (95%CI: -1.2;-0.8) for women and -1.1% (95%CI: -1.2;-0.9) for men.

A reduction was identified in DALYs from 81.44 (95%UI: 78.51;84.52) years in 1990 to 59.62 (95%UI: 56.43;62.62) years in 2019. The DALYs showed a tendency of decline for both sexes: AAPC of -1.0% (95%CI: -1.1;-1.0); -1.1% (95%CI: -1.2;-0.9) for women and -1.0% (95%CI: -1.1;-0.8) for men, which mainly due to the YLL fraction (premature death).



Conclusões

In Brazil, a tendency of decline was verified in ASIR, ASMR, and DALYs for the larynx cancer between 1990 and 2019. These estimates are much higher in men than in women, which is consistent with studies conducted in other countries, and may be attributable to greater occupational exposure and greater long-term exposure to tobacco in males⁵. Moreover, MIR of larynx cancer showed a reduction in Brazil during the studied period (-15%). However, an important geographic variation was observed in the incidence and mortality of larynx cancer.

Considering that consumption of tobacco is one of the main risk factors for laryngeal cancer, the reduction in incidence may be related to successful measures developed by the National Tobacco Control Program in Brazil. The reduction in mortality can be explained by improvements in early diagnosis, and especially in therapeutic care for larynx cancer. Rio Grande do Sul is still the Brazilian state with the highest rates of larynx cancer, while in Piauí the disease burden remains low. It is worth noting that smoking and daily alcohol consumption are responsible for nearly 90% of larynx cancer mortality, and Rio Grande do Sul stands out in the country in terms of tobacco consumption⁶.

As far as distribution by age groups is concerned, larynx cancer is a neoplasm whose incidence and mortality rates increase with age, which was also verified in this study. However, we found an increase in incidence rate between 1990 and 2019 among men aged 20 to 24 years. This finding might be related to an increase in alcohol abuse among young people in Brazil in recent years.

This study also highlights the importance of maintaining and strengthening all measures developed by the National Tobacco Control Program in Brazil as well as urgent regulatory measures aimed at limiting the exposure of the Brazilian population to alcohol, both important potential carcinogens for larynx cancer.

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