

## Mortality In Malignant Brain Tumors in A European Country According to Area of Residence

Almudena Moreno<sup>1</sup>; Jose Pulido<sup>2</sup>; Lucía Cea-Soriano<sup>2</sup>; Enrique Regidor<sup>2</sup>

Public University of Navarra; 2 Complutense University of Madrid

### Abstract

The objective of this study is to estimate the trend in mortality from malignant brain tumors according to the area of residence in Spain between the years 2003 and 2019.

We selected all deaths assigned to the International Classification of Diseases (ICD-10) for total malignant brain tumors (C71). The population, the number of deaths and the population according to the age, sex and population size of the municipality of residence have been obtained from the National Institute of Statistics. The size of the municipality of residence has been grouped into three categories: less than 10,000 inhabitants (rural areas), between 10,000 and 100,000 inhabitants (small urban areas) and more than 100,000 inhabitants (large urban areas). In each area we have calculated the average annual percentage change in mortality rate (APC). Between 2003 and 2019 the APC in the mortality rate from malignant brain tumors in large urban, small urban and rural areas was respectively -0.05, 0.2 and 0.7 in men, and 0.1, 0.2, and 1.4 in women.

Rural areas showed the greatest increase in mortality from malignant brain tumors. Mortality increased twice as much for women as for men in rural areas.

**Keywords:** size of municipality, rural, Spain, trend, urban