

Rise of ALS Incidence in North East Tuscany: an Isolated Anomaly or a Sneak Peek into Future Trends?

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Background

Amyotrophic Lateral Sclerosis (ALS) is a neurodegenerative disorder that, although still relatively uncommon, imposes a considerable socio-economic burden. In the past year (2024) an increasing number of new cases have been recorded in our reference centers.

Objectives

This study aimed to evaluate ALS incidence rates in 2024 within the Florence and Prato districts and to compare these findings with historical data from the same region as well as with incidence rates reported in other Italian regions.

Materials and methods

We conducted a retrospective analysis including all newly diagnosed cases of ALS in 2024, ascertained across three referral centers serving the Florence/Prato area (North-East Tuscany). Crude incidence rates were calculated and subsequently standardized by age and sex according to the Italian population. The standardized rates were then compared with data observed in the same area in the 2018-2021 period, and with incidence estimates from other Italian regions.

Results

A total of 54 new ALS cases were identified in 2024 (median age: 67.6 years). The crude incidence rate was 4.32 per 100,000 inhabitants, with a standardized value of 4.28 per 100,000 (95% CI: 4.1-4.4). This represents an increase compared to the mean value of the 2018-2021 period (2.72/100,000) in the same territory. The male-to-female ratio remained essentially unchanged (1.1 vs. 1.2). Stratified analyses revealed a marked increase among males in the 60-69 and 80-89 age groups, whereas females demonstrated a more generalized rise across all age categories (Fig1). No significant differences were observed in terms of mean age at disease onset and onset type or DPR when comparing 2018-2021 and 2024.

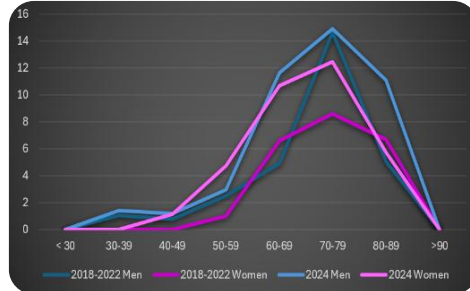


Fig1: ALS incidence (1/100000) by age and sex in Central Tuscany in 2018-2021 and 2024

Analyzing the ALS incidence in the North East Tuscany area year by year, we observed a mild but clear progressive increase over the 2019-2024 period (Fig.2). The incidence and prevalence values observed in 2024 in the North East Tuscany were both higher as compared with the same values reported in other Italy territories (Fig. 3).

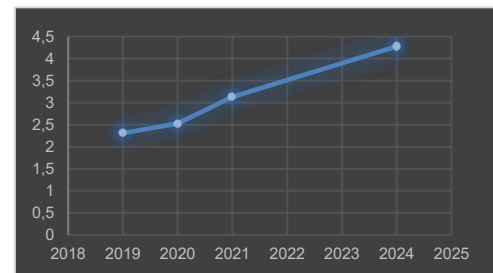


Fig2: Incidence of ALS over the 2019-2024 period in the North-East Tuscany area

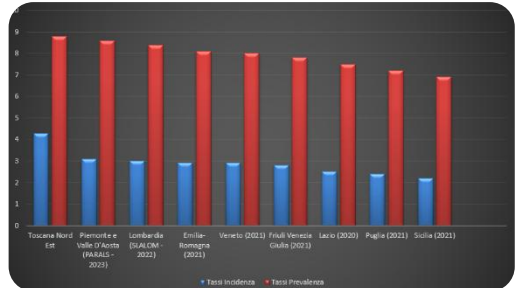


Fig3: Comparison between incidence and prevalence rates in various Italian regions.

Conclusions

We observed a clear increase of ALS incidence in the North East Tuscany area over the last 5 year period, with final values higher as compared to other Italy regions. Whether this finding represents an isolated anomaly, reflects improved case ascertainment, or instead signals the emergence of a true upward trend in ALS incidence remains to be clarified. Further multicenter and longitudinal investigations will be required to establish the underlying causes and potential epidemiological implications of this observation.

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