Population density and risk of Amyotrophic Lateral Sclerosis: an Italian population-based study

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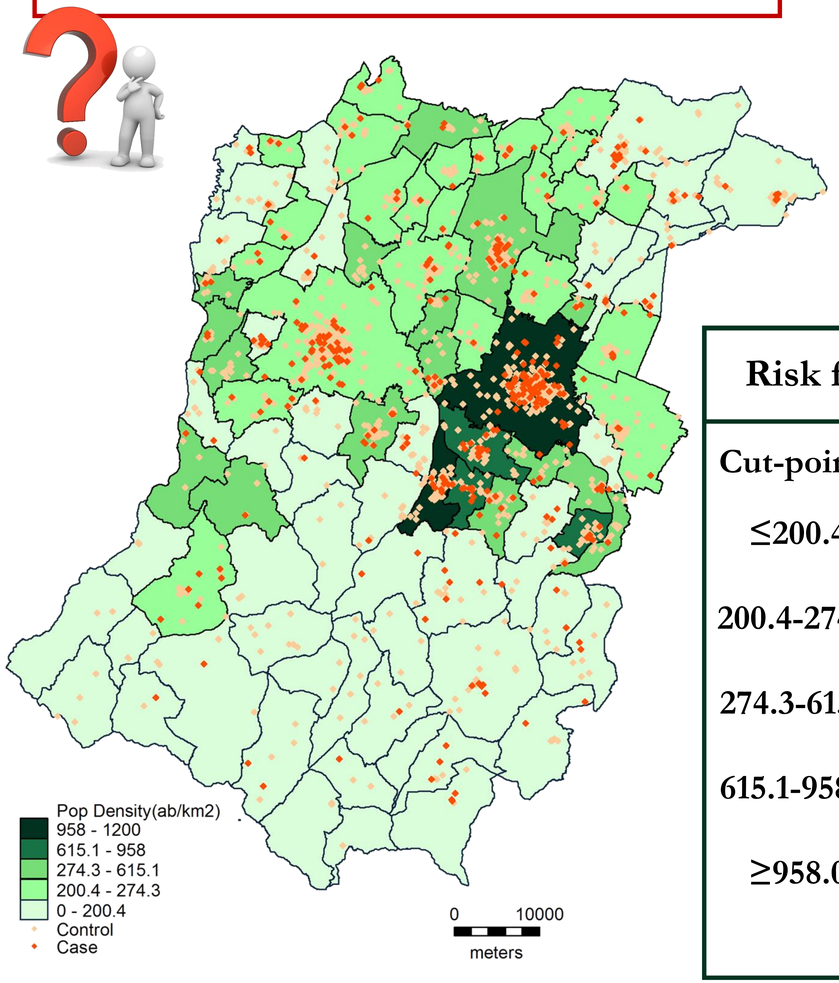
Background and aims

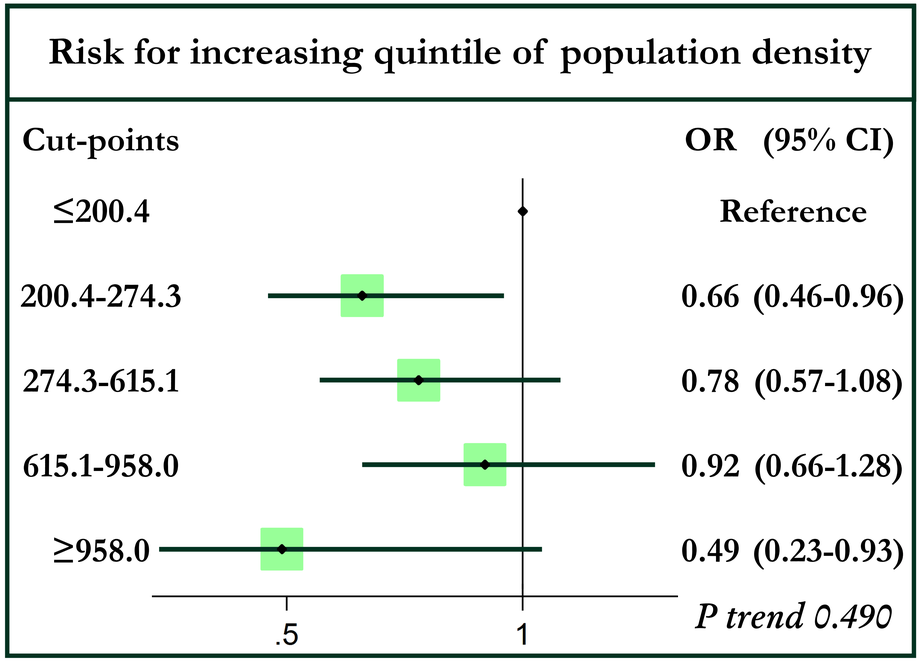
Amyotrophic lateral sclerosis (ALS) is a neuro-degenerative disorder with still unknown aetiology.
As an increased risk of ALS has been reported in areas with high population density, the aim of the study was to test this hypothesis in our population.



Methods

Study performed in two Italian provinces, Modena and Reggio Emilia, using a case-control population-based design.
All newly-diagnosed ALS cases identified in this area using the Emilia-Romagna Region ALS Registry.
Randomly selection of four controls matched for: sex, age and province of residence.
Municipal population density assessed through the 2001 National Census data, available at the National Institute of Statistic (ISTAT).
Risk estimated using logistic regression analysis.

Risk for increasing quintile of population density

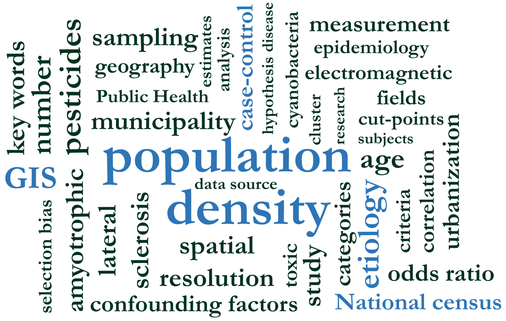


Results

Decreasing risk of ALS for living in municipalities with higher population density in ab/km$_2$ (see figure).
Regional average as cut-point shown OR of 0.68 (95% CI 0.49-0.93) $P = 0.016$

Conclusions and Future Perspectives

- ❑ Contrasting results with previous studies.
- ❑ Living in municipalities with high population density seems to be associated to a lower risk of ALS.
- ❑ Perspective to repeat analysis with greater spatial resolution (electoral ward, land use).
- ❑ Adjusting for potential confounding factors as electromagnetic fields, pesticides exposure, etc.



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