

Saturday

Loneliness is associated with behavioral dysfunctions and thinning of the frontoparietal cortex in amyotrophic lateral sclerosis.

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State of the art

Loneliness, also termed perceived social isolation, impacts on neurobiological architecture, ensuing significant consequences on mental and physical health. In elderly people, it represents a risk factor for dementia. The impact of loneliness on frontotemporal dysfunctions of patients with amyotrophic lateral sclerosis (ALS) has not been investigated. The study aimed to explore the association of loneliness with behavioral and cognitive symptoms of ALS, verifying the underpinning cortical signatures.

Methodology

Loneliness was measured using the 3-item UCLA Scale (UCLA-3L) in 200 consecutive ALS patients. Cognitive efficiency, behavioral changes, mood, emotional regulation, and quality of life were also assessed. Seventy-seven ALS patients performed also 3T MRI scans for the measurement of cortical thickness. Spearman rho and Jonckheere-Terpstra tests examined neuropsychological profiles and cortical signatures of loneliness.

Results

One-hundred twenty-five patients reported no loneliness, 65 were classified as low/moderately lonely, and; 10 felt highly lonely. UCLA-3L scores were associated with behavioral change, mood, emotional dysregulation and QoL. Cognitive and motor disabilities were not related to loneliness. A significant cross-sectional effect of cortical thinning was observed in middle-rostral frontal and parietal cortices.

Conclusion

The satisfaction of social environment is associated with a sense of life well-being that is not limited to the functional motor status. Loneliness was strongly related to neurobehavioral functioning and not with cognitive abilities. Altered structure in extra-motor brain regions involved in processing socially relevant information underpin loneliness levels. This suggests that loneliness may act as a risk factor or may exacerbate behavioral symptoms in ALS patients.

Conflicts of interest

Nothing to disclosure