Commentary

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Emotions and Amyotrophic Lateral Sclerosis (ALS) What the Neurologist/Psychiatrist Should Know

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ALS belongs to a wider group of neurological disorders known as motor neuron diseases, which are caused by gradual degeneration of anterior horn and pyramidal tract neurons. Most patients die from respiratory failure, usually within 3 to 8 years from when the symptoms first appear. However, about 10 percent of people with ALS survive for 10 or more years [1]. Cognitive impairment is correlated with pathologic and images changes in cerebral cortex beyond the motor areas. After clinical evaluation, evidence of impairment can be detected in up to 50 percent of patients through neuropsychological testing [2].

Unfortunately, there are few studies oncognitive, behavioral, and emotional symptoms in ALS, as well as in specific treatment in this area; which can often have a significant influence on the quality of life, family members and caregivers [3]. Assessment of the emotional processing used by ALS patients should improve comprehension of neurologists\psychiatrists of their adaptive functioning [4]. Moderate depressive or anxious symptoms are often observed, but less frequently than in other neurological diseases. “Many neurologists prefer not to face such problems, usually informing their families about the ruthless and overwhelming rapidity of disease progression. We cannot disregard the fears, wants, expectations, and individual needs of our patients. Real needs submerged in inert and quiet bodies. Evaluating the cognitive and behavioral features in these patients is important for therapy and specific care”.

Spirituality/religious belief are recognized internationally as a domain within end-of-life care and it is important in patients' and careers’ quality-of-life. We should listen more to our patients, questioning about beliefs, spirituality/religions, expectations, and especially their emotional needs in the face of ALS. “More important than prescribing a particular class of anti-depressant medications is seeking a better compression of the present and past emotions”. O'Brien and Clark [5], studied and reported unsolicited (internet and print) narratives written by patients in advanced stages of ALS. Narratives of 161 diagnosed with ALS during a period of 37 years (from 1968 to 2005) were analyzed thematically. The findings revealed that religious faith sustains and helps people to avoid despair, and personal spirituality helps them make sense of what is happening to them. “Assessment of religious or spiritual needs should become a routine part of practice and is the responsibility of all members of the multidisciplinary team”.

Theory of Mind (ToM), the ability to recognize thoughts and emotions of another, may be one of the cognitive domains affected in amyotrophic lateral sclerosis (ALS). In order to study early changes in the brains of individuals with ALS, Trojsi et al. [6] analyzed a group of 21 patients (9 bulbar onset (ALS-B) and 12 spinal onset (ALS-S)), by functional magnetic resonance imaging (MRI). The results showed a reduced activity mainly in the areas of neuropsychological performance, including cognitive and affective ToM and multi-domain cognitive functions. ALS-B subgroup exhibited a significant impairment of both affective and cognitive ToMsubcomponents, whereas the ALS-S group showed a significant impairment of the cognitive subcomponent alone.

At the end of the study, it was also raised the hypothesis that ALS-B is biologically more aggressive with respect to cognitive behavior and other modalities, including emotions.

Despite recent Neuro-computing programs advances, whether positive and negative emotions networks can be voluntarily modulated is still unknown. For this purpose, Li et al. [7] used a multivariate voxel pattern analysis and real-time functional MRI Neuro feedback (rtfMRI-nf) aiming to clarify this issue. During an emotion regulation task, participants' emotional states (positive or negative) were given to them as feedback. Individuals were able to increase the percentage of positive emotional states, enhancing emotion regulation network activities. Participants showed an improvement on the positive subscale of positive and negative affect scale that came close to significance. In addition, the activation of emotion-related brain regions, including amygdala, anterior cingulate cortex, insula and Dorsomedial prefrontal cortex, was also increased during rtfMRI-nf training\ task. Authors consider and support the hypothesis that humans are able to voluntarily modulate positive emotion networks, leading to exciting applications in the treatment of various neurological and psychiatric disorders, such as ALS and other motor neuron diseases.

Neurologists as well as psychiatrists should be able to identify, medicate (if necessary) and point out to the multidisciplinary team, the emotional problems presented by patients with ALS, in order to offer directed, updated and individualized treatment. The numerous studies presented above allow us to believe that the science of emotions is progressing. Due to this fact, we must be constantly updated on the subject.

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