

**Socio-cognitive deficits in spinocerebellar ataxia SCA2**

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*Introduction:* The idea that regarded the cerebellum as a control center for movement and related behaviors has been revised. Recent studies show how involved it is in the control of functions defined as "non-motor", including cognitive functions, emotions, and social cognition and mentalization [1,2]. The areas that modulate these abilities reside in the posterior part of the cerebellum (regions called Crus I and II), and have projections towards the dorsomedial prefrontal cortex (dmPFC), the temporo-parietal junction (TPJ) and the precuneus [3]. One of the main tasks of this complex network is to regulate social behavior, and due to its extension, it might also account for the disfunction of other cognitive abilities such as attention, language, memory and executive functions [4].

*Objective and methods:* Aim of this study is to investigate through neuropsychological tools what are the consequences of the malfunctioning of this network in terms of social cognition and mentalization ability in patients with spinocerebellar ataxia (SCA2 subtype), under treatment at the AOU Maggiore della Carità in Novara. The neuropsychological battery includes screening tests for global cognitive functioning and specific tests for each domain (attention, memory, language, executive functions). Mentalization skills and social cognition were assessed by "Reading the mind in the eyes" test and "Faux pas" test. We also monitored the possible presence of anxious, depressive and apathy states.

*Results:* An initial analysis of the data reveals a difficulty in the tasks of recognizing the expressions and emotional state of others, and a worse performance as regards executive functions and memory.

*Conclusion:* In conclusion, knowing and understanding the difficulties of specific cognitive functions and social cognition/mentalization could help to better manage patients and caregivers. It also helps to set up preventive treatments (cognitive stimulation and enhancement of mentalization skills). Finally, it might represent a sort of preclinical marker of the disease.

**References:**

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