Reviewer's report

Title: Prevalence and Correlates of Apathy in Myotonic Dystrophy Type 1

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Reviewer: Benedikt Schoser

Reviewer's report:

Apathy is an important cognitive symptom in DM1 patients. In a pilot study the Paris-Quebec group summarizes their findings DM1 in comparison with FSHD and controls. In ~40% of DM1 patients, the global score of apathy was significantly higher than in FSHD patients, and in controls. Apathy in DM1 patients was negatively correlated to MMSE and Stroop Word scores. Further analyses revealed no correlation to age, educational level, disease duration, CTG repeats, motor functional disability, fatigue, depression, or anxiety.

Although one could discuss and argue against the usefulness of some of the neurophysiological tests in this study, e.g. the use of MMSE, which definitely is not useful for longitudinal studies, and here a significant discriminator, or KFSS, this study overall is a well performed.

Here some remarks
- 1. did the authors perform an formal IQ test in addition?
- 2. did the MDE in the nine DM1 definitely not correlate with apathy (subgroup analysis)?
- 3. Was an additional test for autism spectrum disorders exclusion performed, as in DM1 an overlap to autism spectrum disorders is found, otherwise please discuss this issue.
- 4. The authors could perform in addition a multivariate analysis e.g. MANOVA on their data, as their used pairwise tests are not fully exclude any impact of the other variables on apathy.
- 5. Not clearly stated is which statistical test gave significance to a distinct parameter.
- 6. In the discussion, the authors should discuss any relation of apathy to neurodevelopmental processes, as new imaging studies with follow-up data in DM1 suggest a neurodevelopmental dysfunction and much less a neurodegenerative component for brain function.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:

I declare that I have no competing interests