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Hypermobile spectrum disorders symptoms in patients with functional neurological disorders and autism spectrum disorders : a preliminary study

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Introduction: Functional Neurological Disorders (FND) and Autism Spectrum Disorders (ASD) share some common features in terms of alexithymia, sensory sensitivity and interoceptive issues [1]. Recent evidence shows that both present symptoms compatible with hypermobile Ehlers-Danlos Syndrome and Hypermobile Spectrum Disorders (hEDS/HSD), a heterogeneous group of heritable connective tissue disorders.

Objectives: To compare the prevalence of hEDS/HSD in patients with FND and individuals with High-Functioning ASD (HF-ASD).

Methods: Twenty patients with FND and twenty-seven individuals with HF-ASD were recruited at the tertiary level outpatient clinic of ASST Santi Paolo e Carlo, Presidio San Paolo (Milano, Italy); diagnosis of FND was made according to DSM-5 diagnostic criteria by a neurologist and a psychiatrist. Twenty-six neurotypical healthy controls (HN) were recruited amongst hospital staff and acquaintances. Participants completed the Self-reported screening questionnaire for the assessment of Joint Hypermobility Syndrome (SQ-CH) [2], a seven-item instrument including the Hakim and Grahame's five criteria and two additional ones. Correlation between the instrument and the widely used Beighton's criteria is high ($r = 0.9$; $p < 0.001$).

Results: 55% of the patients with FND, 44.4% of the individuals with HF-ASD and 30.8% of HN scored above the cut-off at the SQ-CH. SQ-CH scores of both FND and HF-ASD groups were significantly higher than the HN group ($p=0.039$ and $p=0.043$ respectively); no difference emerged between FND and HF-ASD ($p>0.05$).

Conclusions: Both individuals with HF-ASD and patients with FND present hEDS/HSD-related symptoms in a higher number than the general population. Imputable mechanisms include (1) overwhelming of executive functions with consequent motor competence impairment for HF-ASD patients, and (2) exacerbation of FND symptoms by physical injury and chronic pain due to abnormal range of joint mobility. Moreover, it is postulated that the amygdala and the anterior cingulate cortex circuitry are responsible for the imbalances at the proprioceptive, interoceptive, and emotional levels.

References:

[1] Nisticò V, Goeta D, Iacono A, Tedesco R, Giordano B, Faggioli R, Priori A, Gambini O, Demartini B. Clinical overlap between Functional Neurological Disorders and Autism Spectrum Disorders: a preliminary study. In press on *Neurological Sciences*.

[2] Bulbena A, Mallorquí-Bagué N, Pailhez G, Rosado S, González I, Blanch-Rubió J, Carbonell J (2014) Self-reported screening questionnaire for the assessment of Joint Hypermobility Syndrome (SQ-CH), a collagen condition, in Spanish population. *Eur. J. Psychiat*, 28 (1), 17-26. Doi: 10.4321/S0213-61632014000100002.