The ScanMove instrument as predictive of degenerative parkinsonism in bipolar disorder

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Introduction: Recent evidence suggests that up to 20% of patients with Bipolar Disorder (BD) and extrapyramidal symptoms might have an underlying degenerative parkinsonism [1]. Moreover, neuroleptic exposure does constitute an independent risk factor for developing parkinsonian symptoms in these patients. Clinical phenotype, as it is characterized and quantified by the MDS-UPDRSIII scale, is usually not predictive for the signs and symptoms' etiology (i.e. degenerative vs. iatrogenic).

Objective: The aim of our work is to evaluate the predictive power of the ScanMove Instrument, which is a 31-item scale originally designed for the screening of antipsychotic-associated movement disorders for use by mental health nurses, for degenerative parkinsonism in bipolar patients.

Materials and Methods: We applied the ScanMove Instrument [2] to a population of patients affected by BD and presenting extrapyramidal signs, who underwent ^{123}I-ioflupane dopamine transporter single-photon emission computer tomography (SPECT). The ScanMove items were grouped into the following categories: "bradykinesia-rigidity" (items 1-2-3-25-26-27-28-33), "tremor-myoclonus" (items 7-9-15-17-22-36-38), "dystonia" (items 4-5-13-20-34), "facial movement disorders" (items 6-14-21-29-35), "voice-sialorrhea" (items 31-32), "dyskinesia-akathisia" (items 10-11-18-24).

Results: Thirty-one patients affected by BD were evaluated. Five of them (19%) had abnormal scans, defined as a striatal binding ratio z-score of <-2. The two groups did not differ in terms of age, motor symptom duration, MDS-UPDRSIII scores, and antipsychotic treatment in terms of chlorpromazine equivalents. Mean scores obtained for the "dystonia" category were significantly higher in patients with dopaminergic denervation compared to patient with normal dopaminergic imaging (2 vs 0.38, respectively; p: 0,03). Anterior stooped posture (camptocormia) and neck antero-lateral dystonic deviation were the main findings in the group of patients affected by neurodegenerative parkinsonism.

Conclusions: Our preliminary findings suggest that the Scan Move Instrument might be a useful screening tool for clinical signs that may be suspect for underlying neurodegeneration in bipolar patients with parkinsonian symptoms. A larger sample is needed to validate results.

References
[1] R. Erro, A. Landolfi, G. D'Agostino, L. Pace, M. Picillo, M. Scarano, A. Cuocolo, S. Pappatá, C. Vitale, M.T. Pellecchia, P. Monteleone, P. Barone, (2021). Bipolar Disorder and Parkinson's Disease: A ^{123}I-Ioflupane Dopamine Transporter SPECT Study. *Frontiers in neurology*, *12*, 652375. https://doi.org/10.3389/fneur.2021.652375.
[2] B. Balint, H. Killaspy, L. Marston, T. Barne, A. Latorre, E. Joyce, C.S. Clarke, R. De Micco, M.J. Edwards, R. Erro, T. Foltynie, R.M. Hunter, F. Nolan, A. Schrag, N. Freemantle, Y. Foreshaw, N. Green, K.P. Bhatia, D. Martino. Development and clinimetric assessment of a nurse-administered screening tool for movement disorders in psychosis. BJPsych Open. 2018 Sep 27;4(5):404-410. doi: 10.1192/bjo.2018.55. PMID: 30294450; PMCID: PMC6171333.