

In Response To:

Dohar N, Gupta HV. Reply to: Paraneoplastic Chorea Managed with Intravenous Amantadine. Tremor Other Hyperkinet Mov. 2019; 9. doi: 10.7916/tohm.v0.743

Original Article:

Ha J, Na BS, Ahn JH, Kim M, Kim JW, Lee JH, et al. Anti-CV2/CRMP5 paraneoplastic chorea effectively managed with intravenous amantadine. Tremor Other Hyperkinet Mov. 2019; 9. doi: 10.7916/tohm.v0.701

Letters

Author Response to Letter to the Editor

Jongmok Ha^{1,2†}, Boo Suk Na^{3†}, Jong Hyeon Ahn^{1,2}, Minkyong Kim^{1,2}, Jae Woo Kim⁴, Jae Hyeok Lee⁵, Jin Whan Cho^{1,2}, Ji Sun Kim^{1,2} & Jinyoung Youn^{1,2*}

¹Department of Neurology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, KR, ²Neuroscience Center, Samsung Medical Center, Seoul, KR, ³Department of Neurology, Dongshin Hospital, Seoul, KR, ⁴Department of Neurology, Dong-A University College of Medicine, Busan, KR, ⁵Department of Neurology, Pusan National University Yangsan Hospital, Yangsan, KR

Citation: Ha J, Na BS, Ahn JH, Kim M, Kim JW, Lee JH, et al. Author response to letter to the editor. Tremor Other Hyperkinet Mov. 2019; 9. doi: 10.7916/tohm.v0.746

*To whom correspondence should be addressed. E-mail: genian@skku.edu

†These two authors contributed equally to this work.

Editor: Elan D. Louis, Yale University, USA

Received: November 4, 2019; **Accepted:** November 4, 2019; **Published:** December 2, 2019

Copyright: © 2019 Ha et al. This is an open-access article distributed under the terms of the Creative Commons Attribution–Non-commercial–No Derivatives License, which permits the user to copy, distribute, and transmit the work provided that the original authors and source are credited; that no commercial use is made of the work; and that the work is not altered or transformed.

Funding: None.

Financial Disclosures: None.

Conflict of Interest: The authors report no conflict of interest.

Ethics Statement: Not applicable for this category of article.

Dear Editor,

This is an author response to the letter by doctors Nicholas Dohar and Harsh V Gupta.

Despite the narrow indication for the dopamine transporter (DAT) scan to distinguish essential tremor from Parkinsonian syndromes, as approved by the Food and Drug Administration (FDA), (Available from: http://www.accessdata.fda.gov/drugsatfda_docs/nda/2011/022454sOrig1s000Lbl.pdf) DAT imaging is utilised for various other clinical symptoms in patients with parkinsonism: (1) to differentiate Parkinson's disease (PD) from atypical parkinsonism (dementia with Lewy bodies (DLB), multiple system atrophy (MSA), corticobasal degeneration (CBD), etc.), vascular parkinsonism or psychogenic parkinsonism by revealing different patterns of decreased DAT uptake or the lack thereof,^{1,2} (2) as a marker, in PD prognostics, in that it reflects the severity of the disease,^{3,4} (3) as a predictor for levodopa-induced dyskinesias,⁵ (4) for differential diagnosis of PD from dopa-responsive dystonia^{6,7} or drug-induced parkinsonism⁸ and (5) to differentiate dystonic or psychogenic tremors from tremors due to PD.⁹ Additionally, false negativity or

positivity, along with the advent of the novel terminology, scan without evidence of dopaminergic deficit (SWEDD) syndrome, is another compelling issue. DAT scan is the only non-invasive modality developed to assess functional integrity of the dopaminergic system currently used in clinical practice, and could give valuable clinical information for selected patients. We do think that, the approved indication of the DAT scan will be broadened to meet its versatile diagnostic potential.

Our patient exhibited definite parkinsonism after increasing the dose of the typical antipsychotic medication (haloperidol); it was therefore important to ensure whether parkinsonism resulted solely from haloperidol or if there actually was subclinical parkinsonism present and haloperidol triggered its manifestation. If the latter case was true, parkinsonism had to be considered as a symptom accompanying chorea and dystonia in the natural course of the disease, broadening the diagnostic spectrum. Although decreased DAT uptake was observed in our patient, the 'pattern' of decreased uptake was different from classic Parkinsonian syndromes. Moreover, we already obtained the data from magnetic resonance imaging (MRI) of the brain in

advance to co-localise and compare with the DAT scan data; therefore, we were not threatened by the caveats of false-positivity.

In conclusion, we believe that in atypical, complex cases that warrant prompt diagnosis and treatment, it does not harm the patient to undergo relevant tests, if not disorienting. Our patient was in desperate need of a concrete diagnosis in order to terminate his diagnostic odyssey and the DAT scan played a crucial role in our workup.

References

1. Ba F, Martin WR. Dopamine transporter imaging as a diagnostic tool for parkinsonism and related disorders in clinical practice. *Parkinsonism Relat Disord* 2015;21:87–94. doi: 10.1016/j.parkreldis.2014.11.007
2. Scherfler C, Schwarz J, Antonini A, Grosset D, Valldeoriola F, Marek K, et al. Role of DAT-SPECT in the diagnostic work up of parkinsonism. *Mov Disord* 2007;22:1229–1238. doi: 10.1002/mds.21505
3. Seibyl JP, Marek KL, Quinlan D, Sheff K, Zoghbi S, Zea-Ponce Y, et al. Decreased single-photon emission computed tomographic [123I]beta-CIT striatal uptake correlates with symptom severity in Parkinson's disease. *Ann Neurol* 1995;38:589–598. doi: 10.1002/ana.410380407
4. Asenbaum S, Brucke T, Pirker W, Podreka I, Angelberger P, Wenger S, et al. Imaging of dopamine transporters with iodine-123-beta-CIT and SPECT in Parkinson's disease. *J Nucl Med* 1997;38:1–6.
5. Hong JY, Oh JS, Lee I, Sunwoo MK, Ham JH, Lee JE, et al. Presynaptic dopamine depletion predicts levodopa-induced dyskinesia in de novo Parkinson disease. *Neurology* 2014;82:1597–1604. doi: 10.1212/WNL.0000000000000385
6. Jeon BS, Jeong JM, Park SS, Kim JM, Chang YS, Song HC, et al. Dopamine transporter density measured by [123I]beta-CIT single-photon emission computed tomography is normal in dopa-responsive dystonia. *Ann Neurol* 1998;43:792–800. doi: 10.1002/ana.410430614
7. O'Sullivan JD, Costa DC, Gacinovic S, Lees AJ. SPECT imaging of the dopamine transporter in juvenile-onset dystonia. *Neurology* 2001;56:266–267. doi: 10.1212/wnl.56.2.266
8. Lorberboym M, Treves TA, Melamed E, Lampl Y, Hellmann M, Djaldetti R. [123I]-FP/CIT SPECT imaging for distinguishing drug-induced parkinsonism from Parkinson's disease. *Mov Disord* 2006;21:510–514. doi: 10.1002/mds.20748
9. Sadasivan S, Friedman JH. Experience with DaTscan at a tertiary referral center. *Parkinsonism Relat Disord* 2015;21:42–45. doi: 10.1016/j.parkreldis.2014.10.022