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Acute worsening of Parkinson's disease symptoms after Sars-CoV-2 mRNA booster vaccination: two case reports

Gabriele Imbalzano[1,2], C. Ledda[1,2], C.A. Artusi[1,2], A. Romagnolo[1,2], E. Montanaro[2], M.G. Rizzone[1,2], M. Bozzali[1,2,3], L. Lopiano[1,2], M. Zibetti[1,2]

[1]Department of Neuroscience "Rita Levi Montalcini", University of Torino, Turin, Italy
[2]SC Neurologia 2U, AOU Città della Salute e della Scienza, Turin, Italy
[3]Department of Neuroscience, Brighton & Sussex Medical School, University of Sussex, Brighton, East Sussex, U.K.

Introduction: Several neurological complications following SARS-Cov-2 vaccination are described, although without a clear causal relationship [1], with few cases of Parkinson's Disease (PD) symptoms worsening, and new onset of movement disorders in non-parkinsonian patients. Some vaccine-related inflammatory response might trigger a temporary alteration of the basal ganglia activity.

Case report: We describe two cases of PD patients treated with device-aided therapy who developed parkinsonian symptoms worsening after receiving the third mRNA vaccine dose (booster) for Sars-Cov2.
The first patient is a 46-year-old man with 9-year PD history, implanted with bilateral Subthalamic Deep Brain Stimulation (STN-DBS) from 2019. Transient worsening of motor and non-motor symptoms occurred the same night after mRNA-1273 booster, which did not respond to medical therapy modification. His symptoms improved after bilateral increase of stimulation intensity. The patient achieved a good wearing-off control in the following days, and went back to his usual therapeutic regimen: mild dyskinesia resolved after restoring previous stimulation settings.
The second patient is a 55-year-old man with 13-year PD history, treated with levodopa-carbidopa intestinal gel (LCIG) infusion from 2021, who experienced severe worsening of dyskinesia from the same night he underwent BNT162b2 booster. We chose to reduce his continuous dose of LCIG, obtaining only partial reduction and re-emergence of OFF periods. Dyskinesia disappeared five days later: previous dose was restored, with good control of OFF periods and only mild, non-disabling, dyskinesia increase.

Conclusion: Our reports and other from literature recovered completely after a few days of parkinsonian therapy modification, symptomatic treatment, or even spontaneously, underlining the transient and benign nature of these possible side effects [1]. Patients should be reassured about these complications, manageable through a prompt evaluation by their reference neurologist, and encouraged to receive COVID-19 vaccines and boosters, highly recommended to prevent the risk of for a worse SARS-CoV-2 infection outcome [2,3].

References:
[1] Garg et al., 2022 Neurol Sci 43: 3-40.
[2] Bloem et al., 2021 J Parkinsons Dis 11: 3-8.
[3] Antonini et al., 2020 Mov Disord 35: 905-908.