

**VIEWPOINT**

# Impact and Challenges of the COVID-19 Pandemic on Patients Requiring Botulinum Toxin A Treatment

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## BACKGROUND

In late December 2019, an initial outbreak of a mysterious pneumonia characterized by fever, dry cough, fatigue, and occasional gastrointestinal symptoms was reported in a seafood wholesale wet market in Wuhan involving approximately 66% of the staff.<sup>1</sup> Over the next few months, the outbreak resulted in the spread to 213 countries, affecting 11.5 million people with an estimated mortality rate of 3.4%.<sup>2</sup> It is the largest and most severe pandemic since the 1918 influenza pandemic.<sup>3</sup> The first case was reported in the Philippines on January 30th, with its first local transmission documented on March 7.<sup>4</sup>

As the coronavirus disease 2019 (COVID-19) pandemic progresses, neurologic manifestations varying from myalgia, headache, dizziness, nausea and vomiting, and confusion continue to be reported.<sup>5</sup> Fortunately, at present, there is no evidence that patients with movement disorders are at increased risk of coronavirus infection.<sup>6</sup>

Challenges regarding the provision of adequate ongoing care for these patients have emerged in the face of uncertainty, self-isolation, and social distancing. Within a few weeks into the pandemic, we have shifted from the conventional approach in health-care delivery towards a virtual approach. In developed countries and for patients with adequate resources, the adoption of telehealth in neurology has been expeditious. While telehealth in

neurology is regularly used in acute stroke care and in assessing patients with Parkinson's disease (PD), its application in other branches of neurology is limited.<sup>7,8</sup> While it has proven effective in facilitating an interactive exchange of information between patients and physicians as well as adjuncts in monitoring medication adherence, certain conditions limit its utility.<sup>9</sup> The extreme difficulty of executing regular visits with their neurologists, physical and speech therapists, and primary care providers has often worsened the clinical conditions of many patients with PD, dystonia, Huntington disease, and tics.<sup>10,11</sup> This further contributes to the burden of these diseases due to impediments in regular administration of medications that are not easily accessible due to their nonurgent nature.<sup>12</sup> Among patients with dystonia, hemifacial spasm (HFS), blepharospasm, spasticity, and migraine headache, the administration of botulinum toxin A (BoNT-A) has been hindered, causing a reduction in quality of life and increased caregiver burden.<sup>10,13-17</sup> A major challenge in this transition has been the delay or cancellation in treatment. Other factors include the absence of dependable internet access, especially in unserved or underserved regions, digital literacy among caregivers and patients, and economic constraints preventing them from internet subscriptions and computer ownership. Here, we reviewed how this pandemic has created a paradigm shift in terms of clinical practice and treatment delivery and discuss the main challenges encountered in these circumstances.

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## POSTPONEMENT AND SUBSEQUENT TREATMENT DELAY OF BoNT-A INJECTIONS DURING THE COVID-19 PANDEMIC: OUR EXPERIENCE

Necessary adjustments were undertaken to facilitate convenient access to certain medications for patients in the Philippines. These include formulations of memoranda in the implementation of electronic prescription use, interim guidelines governing the essential goods, health and other social services available, and finally, telemedicine services to bridge the gap in patient care and monitoring.<sup>18-22</sup>

Perhaps the most challenging aspect in this situation has been delivery of certain medications that require administration by a healthcare professional. Administration of BoNT-A to patients with movement disorders such as HFS, X-linked dystonia parkinsonism (XDP) and other types of dystonia has emerged as one of the greatest challenges we have faced in this pandemic. Hence, many of our patients suffer from disabling consequences due to this disruption in treatment. Three recent cases are highlighted below.

### Case 1

A 54-year-old female, asymptomatic of cough, colds, myalgia and fever, had been diagnosed with right HFS for 10 years and has been responding to regular BoNT-A injections. She received her last injection December 12, 2019. However, due to the government quarantine and associated travel restrictions, she was unable to continue with her next BoNT-A injection. Her prior injections would usually control the spasms for approximately 3 months with a self-reported improvement of 70–80%. A teleconsultation was arranged, and she complained of increasing frequency of right facial twitching associated with headache on the right side. We advised her to try clonazepam (0.5 mg as needed) in the meantime.

### Case 2

An 80-year-old female with cervical and oromandibular dystonia was administered her last BoNT-A injection on March 14, 2020. The injection was noted to be 80% effective for 3.5 months. On July 7, 2020, she underwent teleconsultation and complained of headache, nape pain, and difficulty in eating and swallowing with associated headache. On virtual examination, she had moderate anterocollis, left torticollis, and dysarthria. Due to her age as well as the family's fear of going to the hospital, it was decided to postpone the BoNT-A injection for now. The dose of her clonazepam was increased to 1 mg three times per day, with the appropriate warning of its possible side effects.

### Case 3

A 54-year-old male, also asymptomatic, diagnosed with XDP was receiving BoNT-A every 3–4 months with a reported 75% efficacy and improvement in symptoms. He was given treatment January 23, 2020 but is now complaining of increasing eyelid closure, retrocollis and difficulty in ambulation due to right foot inversion, brought about by missed doses in treatment. He was advised to continue biperiden and increase his dose of clonazepam 2 mg to 1 tablet 3 times a day.

These patients were aware of the restrictions imposed by the government to limit the spread of COVID-19. Thus, teleconsultation was instituted as a means to bridge the gap in patient care. On shifting to telehealth neurology, during the consults, the patients' concerns were acknowledged, and efforts to explain the current situation were made. Despite some of the disabling symptoms these patients had to endure due to the treatment delay and cancellation, they were very receptive and open-minded to the solutions. Hence, short-term plans were instituted to address their concerns, facilitate efficient teleconsultations and, if without risk, schedule a BoNT-A injection in the specialist's clinic with strict implementation of infection control and decontamination measures. These general practices are described below.

## PATIENT CATEGORIZATION IN TERMS OF LIKELIHOOD OF COVID-19 AND PROCEDURE RISK

The guidelines of our hospital and the different Philippine specialty societies were followed in setting up consultations with these patients in the clinic with the aim of prioritizing treatment to those with low or no risk of infection and transmission, keeping in mind the overall welfare of the physician and the team as well as that of the patient and their respective caregivers.<sup>23,24</sup> These include 1) preassessment, which categorizes patients according to their risk of having the infection and transmitting it based on symptomatology, history of recent travel abroad during the time when it was permitted and exposure in communities where local transmission has been documented, nature of occupation, known contacts and their respective statuses; 2) location where the drug is to be administered, i.e., upper or lower part of the face or extrafacial sites such as the cervical area, trunk, or limbs;<sup>25</sup> and 3) consent for treatment in the clinic. Postponement of treatment was performed accordingly, with a plan to resume treatment when appropriate.

## GENERAL HOUSEKEEPING IN THE CLINIC AND SAFETY PRECAUTIONS DURING ADMINISTRATION OF BoNT-A INJECTIONS

The approach to ensuring the safety of the physician, the patient and their respective caregivers should be paramount. It is important to assess the patient before a consultation is scheduled and to follow the hospital guidelines for proper sanitation and infection control in the clinic. Among the specific steps undertaken are 1) establishment of physical barriers that serve to limit the risk of exposure and transmission for both the staff of the clinic and patients and their caregivers; 2) imposition of physical distancing in the waiting area with a limit on the maximum number of patients who are allowed at once, which is determined by floor area; 3) completion of forms during preassessment; 4) sanitation of materials and handwashing stations in the clinic; and last, 5) proper ventilation with air conditioners installed with high-efficiency particulate air (HEPA) filters or, in the absence of such units, an air purifier unit with a HEPA filter.<sup>26</sup> Physical distancing of at least 1 m is ensured by the placement of the waiting room chairs while making sure that only the allowed number of patients are admitted in the area to avoid congestion.<sup>27</sup> Other patients who are not yet scheduled for consultation are requested to wait in their respective vehicles. To maintain proper hand hygiene, 70% ethyl alcohol is provided in the waiting area.<sup>28</sup> General disinfection with 0.5% sodium hypochlorite solution (1:10 solution) is used for surface disinfection every after-clinic hour while donning appropriate personal protective equipment (PPE).<sup>28</sup> Designated doffing areas are assigned with proper containers for disposal of PPE following prescribed practices.<sup>28,29</sup>

## TELENEUROLOGY IN THE PROVISION OF BRIDGE THERAPY

The era of COVID-19 has widely spawned the adaption of teleneurology in various settings due to the need for social distancing.<sup>7</sup> In addition, it clearly addresses the issue of distance and transportation between the patient and the neurologist and is associated with high patient and family satisfaction scores.<sup>30</sup> However, it has its limitations: 1) limited performance of physical examination, a vital component in the evaluation of movement disorders; 2) issues in the financial environment (i.e., many insurers only reimburse for services provided face-to-face; additional costs for the technology); 3) patient-related factors (i.e., unable to use the technology); 4) physician-related factors (i.e., insufficient training and skill credentialing; matters in terms of malpractice liability); 5) technical expertise issues.<sup>30,31</sup> An additional barrier is the mean internet speed in the Philippines, mea-

sured at 5.5 Mbps, which is below the global speed of 7.2 Mbps.<sup>32</sup> Despite these challenges, this technology may aid in the provision of bridging therapy among patients requiring BoNT-A injections but who are currently categorized as high risk for COVID-19 transmission. As mentioned, electronic prescriptions and adjustments in the oral treatments for the symptomatic control of movement disorders may be provided through this approach.

## THOUGHTS ABOUT THE CURRENT SITUATION

Our experience has enhanced our awareness regarding the challenges in continuing patient care and providing treatment during this pandemic. Outside of the pandemic, there have already been issues in terms of the cost of the treatment, which has been further worsened by the current circumstances. The following aspects in patient care have been greatly burdened by the pandemic: access to medications, facility and personnel, unstable economic situations, transportation issues, access to technology, and curtailed access to health and social assistance. Access to medications has greatly affected those patients with dystonia, XDP, and HFS, and although these can somewhat be managed through oral medications, the benefit achieved from administration of BoNT-A cannot be overlooked.<sup>13,33,34</sup> It has been known that apart from controlling motor symptoms, BoNT-A also improves the symptoms of anxiety and depression.<sup>35</sup>

Due to the present situation, the administration of BoNT-A has been delayed for most patients, as it has been classified as nonurgent.<sup>36</sup> Indeed, most movement disorder centers worldwide have suspended the provision of BoNT-A during this period; however, it was recommended that this important service be reestablished to alleviate pain and disability among our patients.<sup>6</sup> The contemporary literature is severely deficient in terms of the experiences or approaches from other countries that would enable the reintroduction of BoNT-A in the healthcare system. We believe that a clear clinical algorithm for BoNT-A administration to guide centers is crucial; thus, a clinical pathway in our center is being developed and is currently underway. Furthermore, the mode of administration of BoNT-A adds to the challenge. Telehealth neurology therefore is limited in this respect. Moreover, there is a need for an adequate supply of PPEs for the clinic staff. The limited transportation allowed by the government due to the quarantine further complicates the situation. Whereas before these patients had relatively easy access to transportation that could be extended by their respective local government units, now these transportation options have been reserved for transferring COVID-19 patients to referral centers and suspected individuals to testing centers. Other modes of transport are also not available. Movement in and out of specific areas is only allowed

in true emergencies.

In most instances, patients who require frequent administration of BoNT-A do not have health insurance and acquire this medication from social and medical assistance units available in government hospitals. However, during this pandemic, access to these centers remains unestablished, making it difficult to tap them for support.

## CONCLUSION

Given the present situation and the expected rise in the number of infected cases in the future, a long-term plan is needed to support the healthcare needs of this group of patients.

### Conflicts of Interest

The authors have no financial conflicts of interest.

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### Author Contributions

Conceptualization: Adrian Isidoro Espiritu, Roland Dominic Go Jamora. Data curation: all authors. Formal analysis: all authors. Investigation: all authors. Methodology: all authors. Project administration: Adrian Isidoro Espiritu, Roland Dominic Go Jamora. Supervision: Roland Dominic Go Jamora. Validation: Adrian Isidoro Espiritu, Roland Dominic Go Jamora. Visualization: all authors. Writing—original draft: Azalea Tenerife Pajo. Writing—review & editing: all authors.

### Ethical Standards

The authors state that they have obtained verbal and written informed consent from the patients for the inclusion of their medical and treatment history within this report.

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