Management of anti-VEGF intravitreal treatment at University Hospital Federico II of Naples during COVID-19 pandemic lockdown

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To the Editor:

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) emerged as a public health threat in December 2019 in Hubei, a province in China, and rapidly spreads all over the world, causing an endured pandemic.[1] Growing evidence suggests that human-to-human transmission of SARS-CoV-2 occurs through droplets, contacts, and fomites.[2,3] This virus was also detected in the ocular surface of COVID-19 patients with conjunctivitis,[4,5] especially in the prodromal stages of the disease until complete recovery. In Italy, many cases were registered, putting the national health care system under a lot of pressure, especially due to the limited number of intensive care units. Ophthalmologists are the high-risk category to become infected or asymptomatic carriers during routine visits because they come in close face-to-face contact with patients during slit-lamp examination, ophthalmoscopy, and other ophthalmologic imaging processes, and the virus load is especially high in the nasal cavity. In Italy, the government ordered the suspension of all deferral outpatient and surgical activities for at least 2 months. Therefore, in these unprecedented circumstances, we proceeded to reorganize the clinical management of the patients, paying attention to those who suffered from ocular pathologies that could lead to blindness. In particular, we evaluated how to guarantee continuity in intravitreal injection (IVI) therapy with anti-vascular endothelial growth factor (anti-VEGF) to patients affected by neovascular age-related macular degeneration (AMD), retinal venous occlusion (RVO), myopic choroidal neovascularization (CNV), proliferative diabetic retinopathy (PDR), and diabetic macular edema (DME) without exposing them to the risk of infection. We investigated through telephonic consultation and on the day of the visit about fever, symptoms of respiratory tract infection, recent travel history, occupation, contact with individuals affected by COVID-19, and presence of certain symptoms in the family. We recommended patients to enter the clinic without accompanying adults, if possible. It was also advised to postpone appointments for at least 14 days for individuals suspected of having COVID-19 and to regard patients with conjunctivitis as contagious carriers. Beyond the usual scrupulous cleaning procedures, new sanitization measures have been adopted. Ophthalmologists always wore at least FFP2 mask and safety goggles or face shield during examination and gloves were changed before examining each patient. Shields acting as a barrier between the patient and physician were placed on biomicroscopes and were disinfected between examinations. All patients were advised to wear a surgical face mask, adhere to the appointment timings, and avoid gatherings in the waiting room. A structural reorganization of the waiting room, the ambulatory, and the theater was carried out. The waiting room was placed in a large and ventilated space; we reduced the number of seats, spaced the remaining ones, and marked those that can be occupied. We organized scheduled appointments at settled times to avoid overlapping visits and crowds in the waiting room. We positioned a hydroalcoholic sanitizing dispenser at the entrance and in the workplace for sanitizing hands. We placed signs explaining the procedures to be followed for the prevention of the risk of contagion at the entrance of the ambulatory. A total of 90 eyes from 89 different patients (48 women, 41 men, mean age: 67.46 ± 14.21

years) were treated using anti-VEGF IVI between 9 March 2020 and 4 May 2020 at the Eye Clinic of the University of Naples 'Federico II'. Fifty-one patients were affected by neovascular AMD, 14 by RVO, 9 by DME, and 9 by PDR, of which 1 was complicated by neovascular glaucoma, 1 developed hemovitreous, and 7 developed myopic CNV. Patients were selected based on pathology (monocular, stage of disease), vision acuity, age, comorbidities, and previous response to IVI. We gave priority based on pathology in the following order: neovascular AMD, myopic CNV, PDR, ischemic RVO, and DME. We postponed anti-VEGF IVI for patients with DME and branch retinal occlusion because they are less likely to suffer from irreversible vision loss in the short term, except for naïve patients with recent significant vision loss.[6] We preferred deferring patients aged 80 years or older and affected by other pathologies, especially respiratory and oncologic ones. Monocular patients, those with bilateral disease, or those with high risk of vision loss in the short term were prioritized. We did not switch any treatment regimen. We enrolled five patients for every IVI session. One patient, despite a negative telephone triage, had a high body temperature on the day of IVI, so the treatment was postponed and he was treated 30 days after complete recovery. Moreover, among the 89 patients, 85 were already under fixed dosing treatment regimen at our facility, while 4 were enrolled during the quarantine period (treatment-naïve). These four patients came to our observation as an emergency visit because of vision loss. We diagnosed neovascular AMD in these four naïve patients using multimodal imaging, spectral-domain optical coherence tomography (SD-OCT), and OCT angiography (OCTA) with Spectralis Heidelberg Retina Angiograph (HRA)-OCT (Heidelberg Engineering, Germany). The lack of support from anesthesiologists, engaged in COVID departments, prevented from performing traditional fluorescein and indocyanine green angiography. OCTA is a rapid, noninvasive, repeatable new modality to visualize the microvasculature of the retina and optic disk without dye injection[7] and represented the best modality to check patients in this circumstance. According to the international guidelines,[8,9] before injection, a 5% povidone-iodine solution was applied to periocular, palpebral skin and the conjunctival sac for at least 30 s. Following injection, an antibiotic ointment was applied to all patients. The choice of the antibiotic was determined by community resistance profiles and the patient's allergies. The postinjection therapy consisted of topical combination of antibiotic and corticosteroid drops three times a day for 3 days to prevent ocular infections. Because of the relatively low risk of adverse events associated with IVI,[9] we decided to avoid the usual follow-up after 48 h, but an emergency contact number was provided to our patients in case of any complications. No ocular complications were detected in all patients after telephonic consultation. In conclusion, we ensured anti-VEGF therapeutic continuity prioritizing treatment for patients with high risk of irreversible vision loss. Naïve treatments were enrolled using a noninvasive OCTA device for containing the infection risk for patients and health care staff and providing the best possible care to our patients.

Conflict of interest statement

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