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REVIEW



Expert opinion on the management and follow-up of uveitis patients during SARS-CoV-2 outbreak

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ABSTRACT

Introduction: Routine medical and ophthalmic care is being drastically curtailed in the context of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic. Uveitis patients require particular attention because of their theoretical risk of viral infection, in the context of therapeutic immunosuppression.

Areas covered: This collaborative work proposes practical management and follow-up criteria for uveitis patients in the context of the ongoing SARS-CoV-2 pandemic.

Expert opinion: Management should proceed as usual when access to health care possible in patients who do not belong to a group at high risk of severe SARS-CoV-2 infection, and in uncontrolled uveitis cases. In case of reduced access to eye clinics or high risk of SARS-CoV-2 infection, patients' management should be stratified based on their clinical presentation. In non-severe uveitis cases, the use of systemic steroids should be avoided, and local steroids preferred whenever possible. In uncontrolled situations where there is real risk of permanent visual loss, high-dose intravenous steroids and/or systemic immunosuppressants and/or biotherapies can be administered depending on the severity of eye disease. Immunosuppressive therapy should not be withheld, unless the patient develops SARS-CoV2 infection.

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Uveitis; immunosuppression; SARS-CoV-2; coronavirus; management; corticosteroid; immunosuppressive therapy; biologics; intravitreal injection

1. Introduction

Patients with uveitis may be disproportionately affected by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic, with not only reduced access to ophthalmic care, but special considerations in regards to immunosuppression. Multiple recent studies now show that SARS-CoV-2 infection can induce both a state of immunodeficiency and a state of hyperinflammation – ‘the cytokine storm’ – which has been hypothesized to cause the most severe forms of the disease that may eventually lead to death [1–3]. Therefore, strategies based on anti-cytokine interventions and therapeutic immunosuppression [1,4–8] may alleviate this hyperinflammatory burden and are currently being investigated in several clinical trials [1,8,9]. Although the use of immunosuppressive therapies (in the setting of autoimmune diseases for instance [10]) has not been reported to add up to the list of risk factors of fatal outcomes (age, obesity, chronic diseases such as hypertension, etc. [11]), the use of corticosteroids has, on the other

hand, been suggested to be detrimental during the course of this first wave of SARS-CoV-2 [12,13]. In uveitis, especially in its non-acute nonanterior forms, systemic corticosteroids, and immunosuppressive are mainstay therapies. Controversies have therefore been postulated regarding the relative risk of immunosuppressed individuals (including uveitis patients) of contracting the virus and developing its complications, due to the absence of a prompt immunological response able to clear the virus in the earliest stages of the disease. On the other hand, immunosuppression has been speculated to play a protective role by dampening any overt immune response that might be observed in later disease stages especially during the cytokine storm [1]. In keeping with the previous comments, and while spanning the entire age-spectrum, uveitis predominantly affects the working-age population with a low, yet possible risk of developing severe forms of SARS-CoV-2 infection [14]. Today, while Europe is facing the new challenges imposed by their ‘exit (from lockdown) strategy,’ a significant proportion of the global population is still under

Article highlights

- New uveitis patients should be managed as standard, according to the diagnosis, and then followed up as frequently as needed, until control of inflammation has been reached.
- In non-severe uveitis cases, the use of systemic steroids should be avoided, and local steroids should be preferred whenever possible.
- In uncontrolled situations where there is real risk of permanent visual loss, high-dose intravenous steroids and/or systemic immunosuppressants and/or biotherapies can be administered depending on the severity of eye disease.
- Immunosuppressive therapy should not be withheld, unless the patient develops SARS-CoV2 infection.
- Immunosuppressed uveitis patients that are tested positive for SARS-CoV-2 should, preferably after consultation with their uveitis expert, transiently suspend immunosuppression until viral symptoms have resolved.
- Intravitreal injections of steroids should not be delayed when access to health care possible, and patients not considered being at high risk of severe SARS-CoV-2 infection.
- In high risk patients, regular intravitreal or subtenon injections of steroids (alone or as add-on therapy) can be postponed in stable uveitis cases.

lockdown (i.e. social distancing and shielding) in an international attempt to decelerate viral dissemination [15]. Depending on the geographic location, medical and ophthalmology clinics are therefore either reduced to emergency or essential care only, or significant hygiene protocols being put in place which drastically reduces the number of hospital attendance [16,17]. The ongoing presence of SARS-CoV-2 and the current lack of effective treatment or vaccine make recurrent localized outbreaks likely. Despite unprecedented containment measures, the current global pandemic has caused over 5.4 million confirmed cases worldwide and over 344,000 deaths as of 24 May 2020, warranting the implementation of new models of care [18]. Uveitis is no exception to this rule and the usual accepted follow-up of uveitis patients, particularly in an acute phase, may need adjusting. Advice from uveitis experts was evaluated in terms of their applicability in various clinic settings leading to the following consensus document, regarding recommendations to assist with the management of adult uveitis patients during the SARS-CoV-2 pandemic and can inform practice in future situations. Pediatric uveitis is specific entity that needs to be considered separately and will not be addressed in this paper.

2. General recommendations (Table 1)

To facilitate the use of the present recommendations, patients are divided into three distinct categories:

- New patients consulting for the first time for anterior or non-anterior ocular inflammation.
- Follow-up patients with a known diagnosis of uveitis or scleritis, who remain stable on current treatment.
- Follow-up patients with a known diagnosis of uveitis or scleritis, who remain uncontrolled on current treatment, or who are suffering a flare-up of inflammation.

2.1. New Patients

Patients should be managed as standard, according to the diagnosis, and then followed up as frequently as needed, until control of inflammation has been reached.

In case of anterior uveitis, topical steroids can be started at the dose of 1 drop per hour (dexamethasone equivalent) for the first 48 hours and then progressively tapered off. In selected cases (mild to moderate inflammation and those with easy access to health care in case of deterioration), follow-up visits can be delayed and replaced by remote consultation. Where required, anti-infectious therapies should be used. In case of first presentation of uveitis or scleritis requiring more than topical steroids (i.e. periocular injections of steroids or systemic therapy), diagnostic work-up should not be delayed and, if identified, treatment of the cause be promptly started. If possible, periocular local delivery of steroids should be considered prior to systemic therapy even in the case of bilateral inflammation. This can delay the recourse to systemic immunosuppressive molecules (especially corticosteroids [12]) that might be problematic in case of SARS-CoV-2 infection. However, therapy should not be withheld if needed in case of severe inflammation or sight-threatening situations (e.g. severe maculopathy or optic neuropathy in monocular patients) unless there is a positive conversion to COVID-19. In such cases, local/intraocular treatment should be maintained until the patient recovers from the acute episode.

In all cases, once inflammation control has been achieved and visual improvement noted, patients will fall into the 'stable inflammation' category and should be managed accordingly (see second category).

2.2. Stable follow-up patients

Anterior uveitis patients with 'stable inflammation' and treated by topical steroids alone (e.g. patients with anterior chamber cell grading of ≤ 0.5 –1+ according to the standardization of uveitis nomenclature (SUN) criteria or patients with ongoing steroid tapering and visual improvement; and no risk for immediate irreversible visual loss): assessment by slit-lamp biomicroscopy can be postponed [19]. In the case of infectious uveitis, anti-infectious therapy should not be withdrawn. As long as patients are unable to come for a face-to-face encounter, the minimum threshold dose allowing for control of inflammation should be maintained, if the dosage was below three drops (dexamethasone equivalent) per day. In cases of known or suspected steroid response ocular hypertension, a prophylactic antiglaucoma agent should be used. Tele-ophthalmology may be used to ensure the absence of conjunctival injection or other findings and symptoms that might suggest active or escalating inflammation. Patients used to taper their medication from previous episodes can do so using the doubling of the previous timelines.

Uveitis or scleritis patients with 'stable inflammation' and treated by systemic steroids and/or systemic immunosuppressants and/or biologics (for example, patients with anterior chamber cell number ≤ 0.5 –1+, vitreous inflammatory reactions ≤ 1 +, and preserved BCVA $\geq 6/9$ or 20/30 Snellen at the last face-to-face follow-up): face to face consultation can be postponed.

Telephone consultations or video calls are recommended to ensure the absence of vision loss or symptoms that might suggest active or escalating inflammation. Anti-infectious therapies should not be withdrawn. Oral corticosteroids should be pursued at the most recent dosage allowing control of inflammation (if the dose is below 10 mg per day of prednisone equivalent or less). If the dose of prednisone was higher, consideration should be given to continue with the planned taper of dose due to potential long-term side-effects (including pituitary insufficiency). In the absence of systemic signs of SARS-CoV-2 infection, administration of intravenous immunosuppressants or biotherapies should continue, when it is not possible to treat the inflammation by subcutaneous or oral route. Monitoring for systemic adverse effects from these medications should continue as appropriate and, where possible, be performed locally, e.g. by a general practitioner. Patients who are on immunosuppressive therapy (systemic immunosuppressants and/or biologics) need to be aware that they fall into the 'vulnerable' category during the pandemic, and should engage in cautionary restrictions. Any systemic sign of fever, infectious or viral disease, or respiratory symptoms, should be immediately reported to the uveitis service, and lead to a priority access to testing. Immunosuppressed uveitis patients that are tested positive for SARS-CoV-2 should, preferably after consultation with their uveitis expert, suspend immunosuppression until viral symptoms have resolved. Debate is still ongoing regarding the cessation of interferon and anti-Interleukin 6 (IL-6) as these may be beneficial in the course of COVID-19 disease [1,2,7,20,21].

2.3. Uncontrolled follow-up patients

For example, patients with anterior chamber cell SUN grading $\geq 2-3+$, and/or vitreous haze $\geq 2+$ and/or recent decrease in BCVA $\leq 6/12$ or 20/40 Snellen at the last follow-up: such patients, especially those who are monocular or when there is an immediate visual threat (severe macular disease or optic neuropathy), require a face to face consultation with appropriate ophthalmic examination including a slit-lamp exam with adjustment of medical therapy even during the lockdown. In case of acute deterioration, infectious causes should be investigated and treated. Where there is real risk of permanent visual loss, intravenous treatments (steroids \pm anti-infectious treatments) can be administered in an in-patient setting when needed. In the absence of systemic signs of COVID-19 and in SARS-CoV-2 negative patients, high-dose intravenous steroids and/or systemic immunosuppressants and/or biotherapies can be administered depending on the severity of eye disease. In cases where SARS-CoV-2 is suspected or in positive patients, local therapy should be used to allow delaying the recourse to systemic treatments, until the acute infection has subsided or the risk of disease has been eliminated.

3. Specific situations

3.1. Urgent situations

Clinics and admissions should not be postponed in the following urgent situations:

- **Suspected (acute) viral retinitis** requiring intravenous and/or intravitreal injections of antivirals. In particular, immunosuppressed or immunocompromised individuals with CD4 T lymphocyte count below 50 cells/mm³ should be assessed within a week of laboratory results in order not to miss an ongoing viral infection with the possibility of irreversible and bilateral vision loss.
- **Endophthalmitis** requiring treatment with intravitreal and/or systemic antibiotics, antifungals, or surgery. Any patient with recent history of intraocular surgery (<1 month) complaining of ocular pain, red eye, and acute vision loss should be assessed to rule out the possibility of endophthalmitis.
- **Absence of response to steroids in severe anterior uveitis**, especially when associated with ocular hypertension should raise suspicion of a viral cause (fundus examination is mandatory to exclude viral retinitis) and requires an anterior chamber tap for molecular diagnostic workup if inflammation remains uncontrolled.

3.2. Intravitreal injections

- Intravitreal injections should not be delayed when access to health care possible, and in patients not considered being at high risk of severe SARS-CoV-2 infection.
- In such high-risk patients, regular intravitreal or subtenon injections of steroids (alone or as add-on therapy) can be postponed in stable cases. However, in those cases highlighted above treatment can be carried out observing indications for increased use of personal protective equipment. In COVID-19 suspect or positive patients, local injections can allow postponing systemic therapy that may not be safe in the context of SARS-CoV-2 infection.
- Intravitreal antiangiogenic therapy should not be postponed in patients with inflammatory choroidal neovascularization (CNV) who do not respond to systemic steroids and/or immunosuppressants and/or biotherapies. We recommend injections as needed (*pro renata* (PRN) regimen). In the absence of **rapid and subjective improvement of visual function** after one anti-VEGF injection, a fixed monthly regimen (for a maximum of 2 to 3 months to cover for the lockdown period or impossibility of face to face consultation) can be proposed. To reduce risk of infection, assessment (visual acuity/optical coherence tomography) at each injection visit can be avoided when necessary. In recalcitrant CNV, intravitreal dexamethasone has been tested in the context of intraocular inflammation and might provide an alternative [22].

4. Miscellaneous

- Conjunctival injection has been described as an initial symptom of SARS-CoV-2 infection (conjunctivitis) in 0.08% of Chinese patients [23]. The infectivity of tears has been suggested in recent reports and several publications hypothesize that the ocular surface might

constitute a mode of viral transmission [24,25]. Therefore, to avoid disseminating the virus, ophthalmologists should adopt the protective precautions recommended by the World Health Organization (WHO).

- Monocular patients should be considered in a personalized manner, weighing carefully the risks and benefits of a face to face consultation.
- Anti-infectious treatments, topical, or systemic corticosteroids and/or immunosuppressants and/or biotherapies should not be stopped without medical advice.
- Patients should seek immediate medical advice, and specify their use and dosage of systemic immunosuppression, in case of fever or systemic viral or respiratory symptoms. SARS-CoV-2 testing should be performed without delay in these patients, and systemic therapy transiently suspended until confirmed negative. Local injections of steroids can allow control of inflammation when deemed necessary in severe uveitis cases in SARS-CoV-2 positive patients.
- General recommendations for face to face consultations: it is important to adopt strong cautionary measures to decrease the risks of virus transmission. Lai et al. proposed a three-level paradigm in this context [26]. First, an administrative level aiming at reducing the number of appointments for an individual clinic and asking relatives not to enter the waiting rooms in order to allow for enough space in the waiting area. This administrative level ineluctably decreases the consultation capacity of clinics and hospitals (including uveitis departments),

which corroborates the importance of the proposed recommendations. Second, the authors propose a triage level aiming at detecting any SARS-CoV-2 suspect case, by asking any visitor for their current symptoms and taking their body temperature at entry. Last, an environmental control level relying on the use of personal protective equipment (masks, shields, etc.), hand hygiene, and frequent disinfection of equipment between patients is advised. Without such strict measures, virus transmission is expected to continue, causing recurrent outbreaks.

5. Preliminary results of an audit of the proposed recommendations (Figure 1)

A local single center audit was performed to investigate the outcomes of patients assessed by phone consultations only, during the period of lockdown in France in a tertiary uveitis clinic (Pitié Salpêtrière, Paris, France) and those who attended for a delayed face to face consultation (F2FC) between the 18th and 22nd of May 2020. A total of 183 patients were assessed by phone consultation between the 16th of March and 16th of April 2020 by one single uveitis specialist (TSDG). Among them, 79.8% (N = 146) were reached by phone after the first attempt and 7.1% (N = 13) were reached by e-mail and/or mail and thereafter by phone after a second attempt. Amongst the patients who underwent teleconsultation

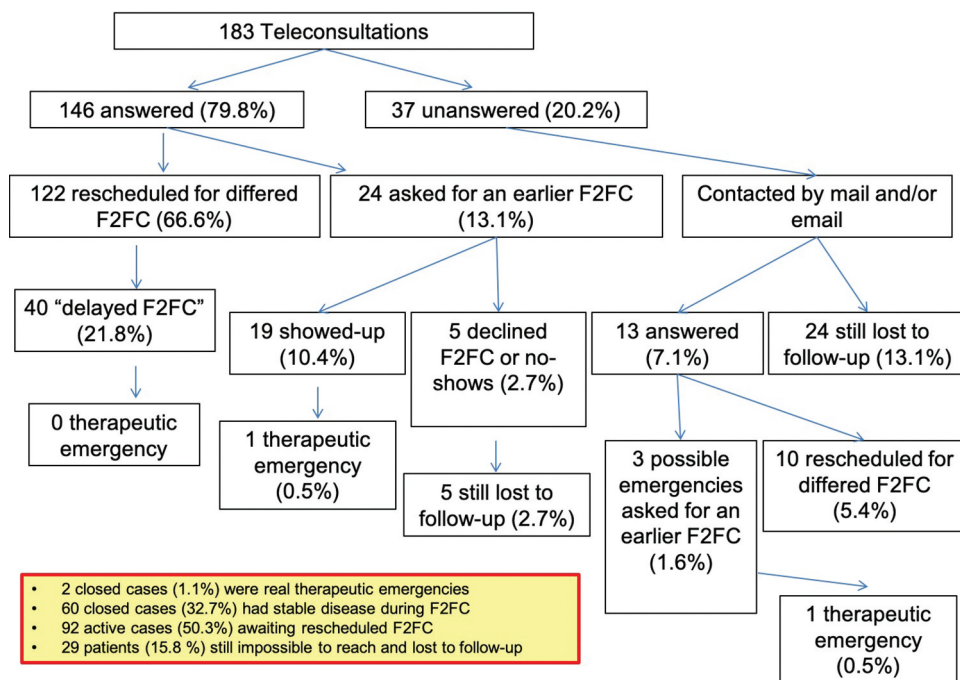


Figure 1. Preliminary results of a French (Paris) audit of the proposed recommendations: A total of one hundred and eighty-three patients were assessed by phone consultation between the 16th of March and 16th of April 2020 by one single uveitis specialist (TSDG). Among them, 79.8% (N = 146) were reached by phone after the first attempt and 7.1% (N = 13) were reached by e-mail and/or mail and thereafter by phone after a second attempt. Amongst the patients who underwent teleconsultation (N = 159), 22 were asked to be seen in person for an earlier F2FC than initially scheduled, based on their reported symptoms. Of these 22 patients, 2 (1.1% of the total cohort) were therapeutic emergencies. Based on their reported symptoms, 132 patients were considered stabilized and scheduled for a differed F2FC. Of these 132 patients, the first series of delayed F2FC (40 patients) was performed between the 18th and the 22nd of May 2020. Among the 40 patients who were seen again in person, no major therapeutic modifications were reported and no emergency was missed. To date, 29 patients (15.8% of the whole cohort) are still impossible to reach and lost to follow-up.

(N = 159), 22 were asked to be seen in person for an earlier F2FC than initially scheduled, based on their reported symptoms. Of these 22 patients, 2 (1.1% of the total cohort) were therapeutic emergencies (1 uncontrolled ocular hypertension in the context of Fuchs uveitis syndrome who underwent emergency filtration surgery; and 1 patient with panuveitis who necessitated major therapeutic changes); while the remaining 20 patients did not require any major change in their treatment protocol. Based on their reported symptoms, 132 patients were considered stabilized and scheduled for a differed F2FC (i.e. 2 months later than initially scheduled). Of these 132 patients, the first series of delayed F2FC (40 patients) was performed between the 18th and the 22nd of May 2020, corresponding to an in-person consultation that was initially scheduled between the 16th and 20th of March 2020. Among the 40 patients who were seen again in person, no major therapeutic modifications were reported and no emergency was missed. To date, 29 patients (15.8%) are still impossible to reach and lost to follow-up.

6. Conclusion

Unprecedented challenges are currently being faced in the context of the global SARS-CoV-2 pandemic. Uveitis patients require particular attention because of their theoretical risk of viral infection, in the context of therapeutic immunosuppression. The drastic re-engineering of eye clinics and the way consultations are expected to be carried out in the upcoming months will redefine our approach regarding uveitis management. This collaborative work is based on the advice from uveitis specialists, and review of current practices in several clinics across the globe. Further studies are warranted to prove the actual efficacy of proposed recommendations.

7. Expert opinion

This is an international collaborative work aimed at proposing management and follow-up criteria for uveitis patients in the context of the ongoing SARS-CoV-2 pandemic. Despite the respite that is currently experienced by many countries around the world after long periods of complete lockdown, it is expected that still circulating SARS-CoV-2 virus will likely cause intermittent, outbreaks for the months to come. Therefore, it is important to promptly adopt the right strategies to decrease the transmission of the virus while still providing high standards of care.

According to Jamilloux Y et al., there are three distinct general phenotypes or stages for SARS-CoV-2 infection [1]: first, the mild or benign infection applies to the majority of individuals (about 80%) and corresponds to minor nonspecific and self-contained symptoms; second, the 'moderate' infection requires hospitalization and corresponds to pneumonia with or without hypoxia (roughly 15% of patients); and lastly, the severe form of the disease requiring intensive care management (systemic hyperinflammation and acute respiratory distress syndrome: 5%). The patterns of immune responses during the course of SARS-CoV-2 infection are becoming clearer every day and might explain such observed differences in clinical phenotypes. Jamilloux Y et al. speculate that the

virus induces in a sequential manner, both an impairment and a hyperactivation of the immune system. Therefore, a valid therapeutic strategy to tackle Covid-19 would aim at administering the right treatment at the right time, boosting the immune system during the earliest stages of the disease, and dampening it once a cytokine storm has burst. An early viral clearance by antivirals [27] or interferon [20] has been proposed to prevent the viral multiplication and the subsequent cytokine storm, the latter necessitating instead anti-cytokine interventions (such as anti-Interleukin 6 and antitumor necrosis factor alpha that are currently being tested in clinical trials [1,8,9]). Systemic corticosteroids, on the other hand, are not advised for because they have been speculated to induce harmful consequences [12], and decrease the viral clearance, as observed with the Middle East Respiratory Syndrome (MERS) coronavirus [28,29]. These pathophysiological data are important to consider in the setting of ocular inflammation and uveitis, because uveitis patients are likely to be immunosuppressed and their immune suppression 'category' can be either beneficial or detrimental, whilst the timing of SARS-CoV-2 infection with regards to their immune status might play a major role in their outcomes. In the context of international lockdowns, uveitis patients are a category of individuals that may need frequent visits, especially during the acute phase of their ocular disease which exposes them to a higher risk of contracting the virus. Importantly, the presence of a concurrent systemic autoimmune condition might put uveitis patients in the high-risk category for the most severe forms of Covid-19 (in case of concurrent organ failure for instance). As described by Lai et al., administrative and environmental control of ophthalmology clinics will impose a drastic reduction in hospital visitors, and this will, therefore, decrease the capacities of face to face consultations [26]. Uveitis clinics are no exception to this rule, which stratifies the patients with the highest risk of vision loss from their inflammatory eye condition.

In keeping with all the previous remarks, it is fair to state that uveitis patients are a select population requiring specific guidelines. Our purpose was therefore to propose general recommendations to help deal with the complexity of patient care during this SARS-CoV-2 outbreak.

With regards to the modality of uveitis treatment, especially in case of first prescription, local or regional corticosteroids should be preferred whenever possible in order to delay the recourse to systemic steroids or systemic immunosuppression. When local therapies are not suitable, physicians should consider outpatient therapy and self-administered subcutaneous injections in order to avoid frequent hospital visits and limit the risks of contracting the virus.

Regarding the use of systemic immunosuppressive agents, historically no fatality was reported in patients undergoing transplantation, chemotherapy, or other immunosuppressive treatments, at any age amongst the reports published on coronavirus outbreaks such as Severe Acute Respiratory Syndrome (SARS) that emerged in 2002 and Middle East Respiratory Syndrome (MERS) [30,31]. In March 2020, D'Antiga et al. reported no fatality in their Pediatric Hepatology and Transplantation Department in Bergamo (Northern Italy, currently endemic for SARS-CoV-2), where none of 200 transplant

recipients, or 100 patients with autoimmune liver disease, and three under chemotherapy for hepatoblastoma have developed clinical pulmonary disease, despite some of the patients being tested positive for SARS-CoV-2 [30]. It is worthwhile to stress out the fact that this study referred to children who are known to mostly have very mild symptoms of SARS-CoV2 infection, which limits its applicability to adult populations. However, other publications, investigating this time the outcomes in adult patients with autoimmune diseases and under immunosuppressive therapy showed similar results with no increase in incidence of severe SARS-CoV-2 cases [10,32,33]. Based on these reassuring data, we do not recommend at this time cessation of systemic immunosuppression in a patient who has achieved uveitis control on an individualized regimen, and who has not contracted SARS-CoV-2 infection. In fact, abrupt discontinuation of immunosuppressive therapies is likely to cause an inflammatory flare-up, that may necessitate high doses of systemic steroids, which should be avoided in the current SARS-CoV-2 context [12]. On the other hand, resuming immunosuppressive therapies (including biologic agents) after an abrupt stop may result in a loss of response or the formation of antibodies to the discontinued therapy [17,34]. As a consequence, we recommend usual strict precautions for these patients according to national and international guidelines to reduce their chance of SARS-CoV-2 exposure. In the event of high fever, cough, or respiratory symptoms, patients should be immediately assessed for SARS-CoV-2 infection and immunosuppressive drugs **be transiently** withdrawn in case of positivity. Debate is still ongoing about the potential antiviral benefit of some drugs such as interferon or anti-IL6 but this is a rapidly evolving discussion and decisions should be made according to the latest international recommendations.

With regards to telemedicine in the context of uveitis management, the means of teleconsultation were not examined because of the scarcity of evidence-based data on this subject. Phone and video consultations can allow a live collection of patients' symptoms and ocular surface visualization, but the provided data may not be sufficient in the context of complex pathologies such as uveitis. Visual acuity assessment may be refined by the use of phone applications; however, the comparability with validated scales (such as the Snellen scale) is still not conclusive [35–37]. While remote consultations (eye imaging by technicians outside the clinic to limit the risks of virus transmission) have proven useful in retinal and vitreoretinal conditions, it is interesting to note that the use of fundus photographs and angiogram images alone was not to be advised for in the context of uveitis because of poor reported agreement rates amongst readers [38]. In fact, the diagnostic strategy in uveitis is probably more complex than in diseases such as diabetic retinopathy or age-related macular degeneration where all the clinical features are well known and described (fundus photographs and optical coherence tomography). In addition, the reasoning in uveitis further relies on patient history and anterior and posterior segment clinical examination with a well-recognized importance of the three-dimensional visualization of inflammatory signs. However, with the advent of high-quality ultrawide field imaging modalities, the recourse to telemedicine in uveitis practice, especially in the context of this current

pandemic, will certainly precipitate the embracement of teleconsultation [39]. The reader should be aware that this initiative is based on the expertise of an international panel of uveitis specialists and not an evidence-based recommendation. In addition, it is important to remember that national or local differences in infection rates may influence available access to health care and should be taken into account in stratification. Consequently, the strategy for management of uveitis patients might vary immensely in different regions. Nonetheless, in order to prove that the presented suggestions are not harmful for uveitis patients, we conducted simultaneously a monocentric audit to assess the first series of **stabilized uveitis** patients who underwent teleconsultations (by phone only) during the lockdown period in France (Paris) and came back to the clinic for a delayed face to face consultation between the 18th and 22nd of May 2020. Among the first 40 patients who were seen in person with a two-month delay, no major therapeutic modifications were noted and no emergency was missed. Of note, these patients represent only 22% of the cohort being currently audited for teleconsultation (total of 183 patients). The final data of this audit are expected in the upcoming months to confirm these preliminary results. In the meantime, while the phone consultation relied only on patients' symptoms, and subjective visual acuity, the presented numbers are still reassuring and in keeping with this, we believe that a delay of 2 to 3 months is acceptable for uveitis patients who are considered stabilized. The implementation of real telemedicine tools might allow extending further the delays, but this will need further investigations to prove efficient.

Declaration of interest

DSS, TSDG have no conflicts of interest. RR, LF, DP, KPV, DT, ST have received travel expenses from Allergan (Abbvie) for participation in the IRC. In addition, RR has received travel expenses from Allergan, honorarium from Novartis and grant support from Fight for Sight. DP received travel expense from Allergan (now Abbvie) and research grant from Bayer. DS reports personal fees from Celgene, grants, personal fees and non-financial support from Abbvie, grants, personal fees and non-financial support from Sanofi Genzyme, grants and personal fees from Roche Chugai, grants, personal fees and non-financial support from Janssen, grants from Amgen, non-financial support from Mylan, grants from Sobi, grants from HifiBio, grants from IaxoSmithKline. JA is a co-founder of iVeena Holdings, iVeena Delivery Systems and Inflammasome Therapeutics; he has received consultancy fees from Allergan, Biogen, Boehringer Ingelheim, Immunovant, Janssen, Olix Pharmaceuticals, Retinal Solutions, and Saksin LifeSciences. AL is a consultant for Allergan, Bayer HealthCare, BeyeOnics Surgical, ForSightlabs, Notal Vision, Novartis, Roche. BB is a consultant for Abbvie Allergan, Alimera, Novartis, Santen, Théa. Grant received from Allergan, Bayer, Novartis MDS discloses the following conflicts of interest (C- consultant, E- employee, P- patent; S- support for research): Preceyes BV: PE, Oxular PLC: E, Oxurion: P, Zeiss, Alcon, Tarsius: S, Allergan, Novartis, Bayer, Charles River Labs, Santen, Tarsius: C. ST received travel grants and consultant fees from Allergan, Novartis and Bayer.

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