

Remdesivir/tocilizumab

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Endogenous endophthalmitis: 3 case reports

In a retrospective study, consisting of patients diagnosed with coronavirus disease 2019 (COVID-19) infection, three patients (2 men and 1 woman) aged 42–74 years were described, who developed endogenous endophthalmitis during treatment with tocilizumab or remdesivir for COVID-19 pneumonia [dosages, routes, duration of treatments to reaction onsets not stated].

A 74-year-old man (case 1 from table 1), who was under COVID-19 pneumonia therapy with tocilizumab, remdesivir, along with antibiotic therapy with azithromycin, doxycycline and ceftriaxone since 8 days presented reporting two days history of decreased vision and ocular pain in left eyes. Examination of the anterior and posterior ophthalmic segment showed evidence of endophthalmitis in the left eye. Subsequently, a diagnosis of endogenous endophthalmitis associated with tocilizumab and remdesivir was made. A positive RT-PCR test using a nasopharyngeal swab was obtained a day before ophthalmic surgery for endophthalmitis. He was taken up for vitrectomy, vitreous biopsy, and received prophylactic vancomycin and ceftazidime. The urine culture revealed growth of *Escherichia coli* and *Klebsiella pneumoniae*. Examination of the vitreous fluid showed presence of gram negative bacilli sensitive to only colistin and the culture showed positive *K. pneumoniae* in the vitreous fluid. RT-PCR for COVID-19 was positive. He was treated with colistin and dexamethasone. Further, he underwent retinal detachment repair and remained infection free at 3-month followup visit and RT-PCR turned negative for SARS-CoV-2. Ultrasound investigation of the renal system demonstrated multiple asymptomatic calculi [aetiology not stated].

A 42-year-old man (case 2 from table 2), who had a history of dental caries and COVID-19 pneumonia treated 3 weeks ago with remdesivir along with antibiotic therapy with azithromycin, doxycycline and ceftriaxone, presented reporting yellowish deposits in the right eye and moderate pain for 6 days. He was on tapering doses of unspecified steroids and had undergone a root canal treatment. Examinations showed presence of thick membrane on the iris along with intense reaction of the anterior chamber. Ultrasound demonstrated hyperechoic shadows in the vitreous cavity and exudates. Subsequently, a diagnosis of endogenous endophthalmitis associated with remdesivir was made. He was taken up for vitreous biopsy, vitrectomy and received primary silicone oil injection along with prophylaxis with vancomycin and ceftazidime. Cultures were positive for gram-negative *Stenotrophomonas maltophilia* bacilli in the vitreous fluid. He recovered completely from endophthalmitis after treatment with cefepime and dexamethasone and was found to be stable 3 months after surgery. His visual acuity was found to be 20/80 at a follow-up examination.

A 57-year-old woman (case 3 from table 1), who had various comorbidities and a history of COVID-19 pneumonia, treated with tocilizumab, remdesivir and antibiotic therapy with ceftriaxone, presented reporting 3 days history of severe pain, decreased vision and redness of right eye. Examination demonstrated hypopyon, intense anterior chamber reaction and vitreous exudates. Subsequently, a diagnosis of endogenous endophthalmitis associated with tocilizumab and remdesivir was made. She underwent vitreous biopsy, vitrectomy and received prophylaxis with vancomycin and ceftazidime. The cultures showed methicillin-resistant *Staphylococcus aureus* (MSRA) sensitive to vancomycin. She received additional two injections of vancomycin and dexamethasone. At a 3-months follow-up, her best-corrected visual acuity was found to be 20/40.