



Editorial

Ocular oncology practice during SARS-CoV-19 related lockdown

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Beta corona virus disease is a relatively new entity caused by Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2); also known as 2019 novel corona virus disease (COVID-19) was first identified in China on December 3, 2019.^{1,2} In India COVID-19 was detected first time on January 30, 2020. Since, then it has spread across the globe to become one of the most serious pandemics.³ The World Health Organization (WHO) has declared COVID-19 outbreak as a public health emergency of international concern on January 30, 2020.⁴ By June 2, 2020, its outbreak was wide spread internationally causing 6,28,7771 infections and 3,79,941 deaths in several counties. In India, the total number of confirmed COVID-19 cases exceeded 2,07,615 and 5845 deaths as of June 2, 2020.⁵

The human-to-human transmission is confirmed. As compared with other types of corona virus like SARS & MERS, this virus has high risk of transmissibility and infectivity, despite of low mortality rate.^{6,7} The virus is mainly transmitted through direct contact of respiratory droplets or by touching a contaminated surface or objects via nose, mouth and eye.⁸ Transmission via ocular surface is also reported. The transmission due to aerosol contact with conjunctiva in unprotected eyes has also been reported.^{9,10}

Elderly, immunocompromised patients and patients with pre-existing co-morbidities like diabetes, cardiovascular diseases, hypertension and cancer are at greatest risk of mortality. Along with cancer it has become the second leading cause of death worldwide. COVID-19 infection

is likely to increase cancer related mortality to a great extent. Wenhua Liang et al. analyzed 2007 cases from 575 hospitals in China and found that patients with cancer had higher risk of severe COVID-19 infection than those without cancer.¹¹ McGoogan WZ reported that COVID-19 fatality rate was about 5.6% among cancer patients as compared with 2.3% in general population.¹² Cancer patient are prone to COVID-19 because of immunocompromised condition due to both malignancy and anticancer chemotherapy.

The only way to prevent virus infection/transmission is by social distancing and isolation, to control virus epidemic, due to unavailability of effective treatment and vaccine. In Indian perspective, the complete lockdown was enforced at midnight of March 24, 2020 with total travel bans and schools and universities were indefinitely closed.¹³ During lockdown all routine outpatient departments across the hospitals and clinics were to be shut and only emergency services continuing to function. The COVID-19 outbreak is the leading unprecedented consequence on cancer care. It may have direct or remote consequences on patients and health care providers. The Ocular oncology practice during the COVID-19 pandemic related lockdown is quite challenging. Cases of COVID-19 in India are still increasing at a great pace even during 5th lockdown, started from June 1, 2020.

Recent Chinese study shows that most of the cancer patients are at a higher risk in developing severe events in COVID-19 due to immunosuppressed status.⁷ Many patients of ocular malignancies are also immunocompro-

Table 1: Levels of urgency in ocular oncology according to AAOOP recommendations

Levels of Urgency	Procedures in Ocular Oncology
Emergent	<ol style="list-style-type: none"> 1. Orbital biopsy for malignancy in a child (suspected rhabdomyosarcoma) 2. Enucleation for intractable glaucoma /globe perforation from intraocular tumor (retinoblastoma, uveal melanoma).
Urgent	<ol style="list-style-type: none"> 1. Examination under anaesthesia for newly suspected retinoblastoma. 2. Enucleation for retinoblastoma. 3. Orbital biopsy for processes causing optic neuropathy and vision loss. 4. Orbital decompression for impending visual loss (optical neuropathy or corneal perforation) secondary to orbital tumor.
Semiurgent	<ol style="list-style-type: none"> 1. Examination under anaesthesia for children with active retinoblastoma undergoing treatment (intravenous chemotherapy, intra-arterial chemotherapy, intravitreal chemotherapy, plaque radiotherapy, cryotherapy, transpupillary thermotherapy, laser photocoagulation) must continue on necessary schedule to control disease, typically every 3-4 weeks. 2. Examination under anaesthesia for retinoblastoma evaluation for patients with stable disease, who have received treatment within past 6 months. 3. Examination under anaesthesia for children at high risk for retinoblastoma due to family history or unknown RB gene mutation. 4. Intraocular injection of chemotherapeutic agents for high-grade neoplasia. 5. Biopsy of suspected intraocular malignancy (fine needle aspiration biopsy or other). 6. Excision /drainage of iris cyst with pain or glaucoma. 7. Plaque insertion and removal for posterior uveal Melanoma (choroidal & ciliary body). 8. Tantalum clip insertion for posterior uveal Melanoma (Choroidal & ciliary body). 9. Enucleation for uveal Melanoma. <p data-bbox="506 999 648 1024">Eyelid Tumors</p> <ol style="list-style-type: none"> 10. Biopsy of suspected eyelid malignancies including Melanoma, sebaceous carcinoma, Merkel cell carcinoma or others. 11. Excision of suspected malignant tumor or orbital tumor affecting the better eye in a monocular patient (slow-growing I lead basal cell carcinoma should be excised on a non urgent basis). 12. Repair of island effect after tumor removal. <p data-bbox="506 1199 709 1224">Conjunctival Tumors</p> <ol style="list-style-type: none"> 13. Biopsy of suspected conjunctival malignancy including Melanoma and squamous cell carcinoma which could not be managed reasonably without patient topical chemotherapy of the patient. 14. Biopsy of suspected conjunctival lymphoma (extended may be appropriate under certain circumstances). <p data-bbox="506 1367 656 1392">Orbital Tumors</p> <ol style="list-style-type: none"> 15. Biopsy of suspected tumor malignancy (case by case-rapidly growing tumor may need urgent biopsy, slowly growing suspected lymphoma is semiurgent). 16. Biopsy of suspected orbital lymphoma (extended delay may be appropriate under certain circumstances). 17. Exenteration (case by case rapidly growing tumor may need urgent biopsy; slowly growing one could be semiurgent).
Nonurgent	<ol style="list-style-type: none"> 1. Biopsy of suspected benign eyelid tumor. 2. Biopsy of suspected basal cell carcinoma, unless monocular patient. 3. Biopsy of suspected benign conjunctival tumor. 4. Biopsy of suspected benign orbital tumor. 5. Treatment of select iris Melanoma with excision or radiation therapy (some may be urgent, especially if there is a rapid growth or secondary glaucoma, at physician's discretion). 6. Excision /drainage of cyst without pain or glaucoma.

Table 2: Practical health vigilance recommendation adopted by modena cancer centre

Concerns	Recommendations
Patient care	<ol style="list-style-type: none"> 1. Provide surgical face masks and access to cleaning /disinfecting agents for all people having access to the clinic. 2. Contact patient on active anti cancer treatment the day before the appointment for screening of symptoms of cough, sore throat, fever or other flu-like symptoms. Patient with symptoms must be rescheduled. 3. Allow access to visitors only if essential for visit. 4. Prohibit visitors' access to the haemopoietic stem cell transplantation unit and the inpatient hematology ward. 5. Postpone routine follow-up visits for patient not on active cancer treatment (e.g 6-12 months survivorship visits), and conduct appointment via telemedicine. 6. Respect lifestyle restrictions
Facility reorganisation	<ol style="list-style-type: none"> 1. Limit access to the hospital through one point of entry. 2. Establish triage stations outside the hospital to screen patients and visitors for covid-19 symptoms. 3. Convert the waiting area to allow for distancing of at least 1m. 4. Dedicated and confined hospital area for patients with respiratory symptoms to present to the oncological / hematological admission room (eg. COVID-19 room).
Staff	<ol style="list-style-type: none"> 1. Provide personal protective equipment (PPE)(e.g. surgical face mask) and access to cleaning /disinfecting agents for all the staff members. 2. Train clinic staff for symptom recognition, screening procedures and PPE use. 3. Reduce the number of non-medical staff in the clinic by allowing work from home for phone based activities. 4. Organize web-based multi-disciplinary team meetings. 5. Respect lifestyle restrictions.

mised from cancer therapy and are at risk of contracting COVID-19. The patients of active retinoblastoma receiving intra arterial chemotherapy are at major risk due to associated neutropaenia.^{14,15} As the pandemic worsens, there is a need to reduce the risk of virus transmission and to protect the patients of ocular cancer and their attendants or family members accompanying a minor and healthcare provider including doctor and paramedical staff. Therefore the major strategies should be postponing of adjuvant therapies, elective surgeries, routine follow-up and cancer prevention appointment for less aggressive ocular cancers. However delaying and denying oncological interventions may lead to progressive disease, non-resectable tumor leading to poor survival particularly in potential fatal ocular malignancies such as retinoblastoma, orbital rhabdomyosarcoma and uveal Melanoma etc.¹⁶ Thus oncologist should provide only urgent or emergent care during covid-19. The cancer care cannot be postponed only on the basis of the risk of infection. Prioritization of cases must be done according to guidelines for triage for cancer surgery patients by American College of surgeons.¹⁷

A guideline for prioritization of ocular oncology cases given in Table 1. [Recommendations endorsed by Board of Directors of American Association of Ophthalmic Oncologist and Pathologists (AAOOP) and the International Society of Ocular Oncology (ISOO)] must be followed.¹⁸ According to (AAOOP) recommendations ocular oncology

cases have been divided into (i) Emergent (should be performed within 24hr) (ii) Urgent (should be performed within a week), (iii) Semi urgent (should be performed within one to two months) and (iv) Non urgent (should be deferred for at least two to three months). In the COVID-19 pandemic situation malignant tumors are given priority over benign tumors and highly malignant tumors leading to death or disability like retinoblastoma, uveal melanoma and rhabdomyosarcoma etc are prioritized over less aggressive malignancies like basal cell carcinoma (BCC) of eyelid and OSSN etc.¹⁸

The patients who are at low risk, benign and non urgent tumors are given the choice of telemedicine consultation or to delay their visit and treatment. The general survey with reference to Indian prospective reported that 77.5% ophthalmologist could use some form of telemedicine which could be in the form of a simple phone call or a video- call, short message service (SMS) and whatsapp chat. Telemedicine helps to decide whether patient requires urgent intervention or not.¹⁹ Documentation of phone calls and telemedicine consultation in medical record is essential. Ideal ocular oncology cases for telemedicine consultation are conjunctival lymphoma, OSSN, benign conjunctival melanosis (being externally located and slow growing) and benign or low malignant eyelid tumors like eyelid BCC.²⁰ In COOG survey (collaborative ocular oncology group survey) 100% respondents were managed

new patients as with active disease (having proptosis /Pain) within last 3 months as emergency.²¹

Interventions like detailed examination of retinoblastoma under general anesthesia where intubation is necessary or surgical procedures in which possibilities of aerosolization of virus carries high risk for transmission of SARS-CoV-2 requiring special precautions, including presurgical COVID-19 testing, use of full PPE kit etc.to minimize the risk of virus exposure to healthcare providers. Modena Cancer Centre adopted practical health vigilance recommendation for cancer management (Table 2) which is to be followed during ocular oncology procedures.²² Many institutions adopted COVID-19 testing of patients and their care taker /family members before admission. Sometimes second round PCR testing is also required due to high level of false negative results.

Protection of professionals is most sensitive issue during cancer management in covid-19 pandemic. Several reports are available from India where health care workers got COVID-19 infection during cancer care. On April 7, 2020 in Delhi State Cancer institute (DSCI), 18 health workers including two doctors were found COVID-19 positive.²³ On April 14, 2020 two doctors and 2 nurses were found COVID-19 infected in Asian Cancer institute, Mumbai.²⁴ Thus preventive barriers are mandatory for all professionals involved in cancer care.

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