

LETTER TO THE EDITOR

Providing care for pediatric cancer patients in the COVID-19 era: Rapid response recommendations from a developing country

To the Editor:

Coronavirus disease 2019 (COVID-19) was first described in December 2019 in Wuhan, the capital of China's Hubei province.^{1,2} On March 11, 2020, WHO declared COVID-19 as a pandemic.³ The first confirmed case of COVID-19 in Egypt was reported on February 14, 2020. As of May 10, 2020, there have been 8964 confirmed cases, 2002 recovered and 514 deaths.⁴

Children with cancer are immunocompromised and at higher risk of developing serious complications because of infection exposure. During the COVID-19 pandemic, pediatric oncologists face numerous challenges regarding the continuity of the anticancer therapy, hospital admission, infection protection precautions, and expected critical complication post infection. This raises a question of how to organize pediatric cancer care in the COVID-19 era? We propose some critical recommendations focusing primarily on viral infection prevention and control strategies, avoiding significant myelosuppression, and decreasing the duration of hospitalization or the use of medical resources. A rapid global response for children with cancer from the major pediatric oncology societies was published online during submission of this article.⁵ They used the same pediatric oncology principles as we have used to develop our recommendations, and most of our recommendations were in line with this response but adapted to our environment.

Our recommendations include the following.

Screening and surveillance

All patients and their caregivers should be screened with epidemiological history and screening questionnaires according to the updated COVID-19 case definition at a well-equipped station better to be at facility entrance. Suspected cases should be immediately isolated in an area separate from other patients. Medical workers caring for isolated patients should not care for regular patients in the oncology ward.

Apply hand and respiratory hygiene

Hand and respiratory hygiene should be strictly applied for patients, caregivers, and health workers.⁶ Proper personal protective equipment should be used according to WHO guidance.⁷

Apply principles of social distancing

Principles of social distancing should be applied through isolating patients in separate rooms and if not possible arrange patients' beds with 2 meters distance at least; only one caregiver is allowed during hospital admission or in outpatient clinic; no visitors are allowed; and keep patients in the waiting area by at least 2 meters distance.

Prioritize pediatric cancer care

For newly diagnosed cases

Patients should proceed with their diagnostic procedures without delay. Diagnostic procedures should be performed as an outpatient procedure unless otherwise required by the treating physicians.

For patients on active curative treatment

Modification of the treatment protocols is required to decrease hospitalization and neutropenia duration without survival impairment.

Acute lymphoblastic leukemia

Patients are treated according to the modified St. Jude total XV⁸ protocol. We propose:

1. Giving granulocyte colony stimulating factors (GCSFs) during induction chemotherapy if BMA at day 19 is in complete remission and after induction chemotherapy.
2. Delaying consolidation and giving weekly methotrexate (MTX)/6-mercaptopurine (MP) for two weeks as interim continuation if BMA at the end of induction is MRD negative.
3. During consolidation, reduction of the 6 MP dose by 50% with a close assessment of total leucocytic counts.
4. During continuation: for low-risk patients, omitting vincristine (VCR)/dexamethasone (DEX) pulses and using only MTX/6 MP in addition to reinduction weeks, and for high-risk patients, no change in L-asparaginase and reinduction weeks, omitting weeks

of cyclophosphamide/cytarabine and using MTX/6 MP alternating with VCR/DEX. These modifications are based on a randomized controlled study by Felice et al.⁹

Acute myeloid leukemia

Patients are treated according to the modified St. Jude AML 02 protocol.¹⁰ We propose the following recommendations:

1. Induction chemotherapy: Omit etoposide so that induction consists of Ara-C and doxorubicin based on the Medical Research Council AML 15 clinical trial.¹¹
2. The use of G-CSF during induction chemotherapy and 24 hours after chemotherapy if BMA at day 15 less than 5%.

Non-Hodgkin lymphoma including mature B ALL

We recommend using growth factors preemptively 24 hours after the completion of chemotherapy.

Hodgkin lymphoma, classic type

Patients are treated according to the EuroNet-PHL-CI clinical trial. We propose the use of OEPA and COPDAC chemotherapy as multiple-day regimens in the daycare without admission.

Solid tumors

We recommend

1. Use of growth factors preemptively 24 hours after the completion of chemotherapy.
2. Shift of chemotherapy protocols as a daycare outpatient therapy if possible, without endangering patients with possible adverse effects as nephrotoxicity.
3. Delay all therapies beyond first-line therapy unless there is an urgent clinical situation.
4. Delay imaging procedures to monitor response to treatment unless an urgent clinical condition.

Patients on palliative care therapy

Palliative care patients need to be evaluated case by case as delay in care may result in more suffering and subsequently more hospitalization.

We recommend the following:

1. Patients on chemotherapy: Delay palliative chemotherapy and use less aggressive regimens.

2. Patients on pain medications: Give patients a stock of pain medications for a longer time.
3. Use telemedicine to communicate with patients to determine the need for hospital visit.

Follow-up patients


We recommend disease-free patients not to visit the hospital, use telemedicine for communication with pediatric cancer survivors, and exchange medical documents.

CONCLUSION

We are trying to offer optimal care for critical patients, keeping their chances of cure from cancer maximum and at the same time minimizing their exposure and risk for COVID19 pandemic infection, and maintaining a safe environment for both patients and healthcare providers.

CONFLICTS OF INTEREST

The authors declare no conflict of interests.

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