Challenges and Strategies in Coping with the COVID-19 Pandemic in Pediatric Oncology: Lessons Learned

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Desafios e Estratégias no Enfrentamento da Pandemia de Covid-19 em Oncologia Pediátrica: Lições Aprendidas

Desafíos y Estrategias para Abordar la Pandemia de COVID-19 en Oncología Pediátrica: Lecciones Aprendidas

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INTRODUCTION

Childhood cancer is a potentially curable disease. However, effective treatment of children with cancer depends on timely evaluation and diagnosis, referral to specialized centers, multidisciplinary teams, coordinated multimodal therapy and access to supportive care.

Since 2020, the new coronavirus pandemic was even more challenging for health systems. In response to the increasing number of cases of infected persons and deaths related to the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the World Health Organization (WHO) determined isolation and social distancing, among other restrictive measures[1]. The goal was to slow down the transmission of the virus, reduce the burden on health systems and prevent mortality[2,3]. These measures evolved to quarantine, lock-down, limited transportation, reduced availability of health teams due to COVID-19, among others.

During the pandemic, pediatric oncologic care had changed globally requiring prompt response. COVID-19 imposed an additional pressure on health systems and oncologic institutions that provide care to pediatric patients, especially in low-and-middle income countries.

International societies joined efforts and issued guidelines to adapt and optimize the diagnosis and treatment of childhood cancer in that period[4,5]. According to the recommendations, cancer treatment should continue with adjustments to each tumor type and the patient's status[5], applicable to chemotherapy, diagnostic and complementary exams, radiotherapy, surgeries, procedures with anesthetics and sedation with management of airways, palliative care and supportive treatments in general[5].

Publications have shown that most of the children who tested positive for COVID-19 were asymptomatic or mildly symptomatic, a similar scenario also found for pediatric oncologic patients[7].

Recent publications revealed pandemic impacts on pediatric oncologic treatment. In low-and-middle income countries, especially in its initial phase, oncologic treatments were suspended or reduced, as well as consultations of patients followed up outside of oncological treatment[8-10].

A global cross-sectional study involving pediatric oncologic institutions in 79 countries showed reduction of new cases of cancer for this age-range, increase of treatment abandonment and modification of oncologic treatment (72% reduction of surgeries, 57% of chemotherapies and 28% of radiotherapies)[11]. Long-term consequences of these changes are yet uncertain but may affect the prognosis[12].

As soon as the first case of COVID-19 was diagnosed in Brazil, the National Cancer Institute (INCA) pediatric oncology team met to design strategies to be adopted at the service. These strategies were based on discussions with the team and guidelines from INCA's hospital infection division. The great challenge was to mitigate the risk of virus spread and continue with cancer-targeted therapy.

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DEVELOPMENT

INCA's Pediatric Oncology

INCA is located in Rio de Janeiro-RJ, Brazil, it is an auxiliary body of the Ministry of Health to develop and coordinate integrated multidisciplinary actions of cancer prevention and control nationwide, including medical and hospital care provided free-cost directly to oncologic patients within the National Health System (SUS)[13,14].

INCA's pediatric oncology is a reference center for the care and research of pediatric cancer patients in Brazil. A skilled multidisciplinary team manages the treatment targeted to children and adolescents with cancer.

Patients are referred for registration at the system or by other medical services. Patients with strong cancer suspicion are registered for prompt diagnostic investigation and treatment in the briefest time possible.

A new structure was implemented at INCA's pediatric oncology to cope with the challenges based on: reorganization of outpatient service, restructuring of hospital admissions, continuation of oncologic treatment and monitoring of adherence to oncologic treatment.

Reorganization of outpatient service

The measures to reorganize the workflow of outpatient service were:

- Priority to patients in diagnostic investigation and active treatment.
- Suspension of in-person visits for monitored patients through telephone calls with the families providing required guidelines for each case.
- Implementation of 24-hours/day teleconsultation under the purview of the physician in charge of the pediatric emergency, clarifying doubts to monitored patients off active treatment.
- Authorization of one patient's companion during hospital stay either at the outpatient service or as inpatient, reinforcing social distancing.
- Patients were guided to stay home in-between treatments.

Restructuring of hospital admissions

- Five isolation beds were assigned as "COVID Ward" at the pediatric ward assisted by one multiprofessional team for each wing.
- One isolation bed with advanced ventilatory support was assigned at the pediatric ward.
- One isolation bed was assigned at the intensive pediatric care assisted by professionals donned with personal protective equipment (PPE). Whether more than one suspected or positive COVID-19 patient needed intensive care, other isolation beds were created.
- No visits were allowed.

Continuation of oncologic treatment

- Chemotherapy was offered to children with regular physical exam after thorough risk evaluation.
- Intensive chemotherapy of incurable oncologic diseases have been avoided.
- As radiotherapy causes relatively fewer impacts on the immune system than chemotherapy, it was continued but cautiously in case of concomitant chemotherapy.
- For surgeries required for COVID-19 suspected or confirmed patients, pre-operatory procedures were applied at isolation bed following strict prevention and control measures during surgery and anesthetics, in neutral pressure operation room for suspected or confirmed COVID-19.

Monitoring of adherence to oncologic treatment

Strategies of existing treatment adherence monitoring at the service were intensified through:

- Tracking of missed medical visits at the pediatric oncology.
- Phone contact with the child's legal guardian to find the reason of missed visits and provide guideline.
- Reschedule upcoming visits for patients in diagnostic investigation, in treatment and exclusive palliative care.
- Offer social support as guidelines about benefits, social programs and projects (emergency support) for patients and their families, how to receive food, accommodation and transportation vouchers through *INCAvoluntário* and lodging accommodations at a hotel close to the hospital sponsored by *Instituto Ronald McDonald*.

CONCLUSION

In the aftermath of the COVID-19 pandemic, it is necessary to reflect about the challenges faced and the opportunities that emerged but that brought up so many lessons to everyone. Telemedicine has been shown to be a quite valuable tool for public health emergencies. Monitoring treatment adherence was a key instrument for a middle-income country as Brazil. Multidisciplinary teamwork, interpersonal interaction and effective team

communication were essential to overcome the hurdles and strengthen healthcare.

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CONTRIBUTIONS

All the authors contributed to the study design, acquisition, analysis and interpretation of the data, wording and critical review. They approved the final version to be published.

DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interests to declare.

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