

Impact of COVID-19 Pandemic in Oncological Debut at Pediatric Emergency Department

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Pediatric cancer is considered a rare disease, but it is often a challenge to make an early diagnosis. One of the most related factors to delayed diagnosis is the accessibility to health services¹, dramatically affected during the first year of COVID-19 pandemic due to a decrease in face-to-face activity in Primary Care centers^{2,3}.

A decrease in incidence and a later detection of cancer were described in adult medicine at the earlier waves of the COVID-19 pandemic. The scientific literature about this issue in Pediatrics is limited, although there are some studies with similar results⁴. The aim of our study was to determine the repercussion of COVID-19 pandemic in detection of oncological debut at a Pediatric Emergency Department (PED).

For this purpose, an observational, descriptive study was carried out in a pediatric tertiary hospital in Barcelona. Patients under 18 years old with a diagnostic suspicion of cancer in PED during years 2019 and 2020 were included. Two groups of patients were established, depending on the year when they were diagnosed: one group of patients diagnosed in the year prior to pandemic (period 1-2019) and another one of patients who debuted at the start of the pandemic (period 2-2020). Patients with initial suspicion of cancer but finally discarded were excluded, as well as oncological patients diagnosed with relapse. The computerized medical record of the patients was reviewed after getting the approbation of the hospital's Ethics Committee.

A total of 175 patients were included: 83 patients in period-1 and 92 in period-2. The incidence of oncological debut was 0.8 cases per 1,000 admissions in PED in period-1 and 1.2 cases per 1,000 admissions in period-2 ($p=0.003$). One hundred thirty-two (78.8%) patients had been admitted to other care

devices because of the same symptomatology prior to the debut in PED. Forty-one (23.4%) patients were diagnosed with an oncological emergency at the debut: 20 (11.4%) of them were metabolic emergencies (14 tumor lysis syndrome, 6 cases of hyperleukocytosis); 20 cases were mechanical emergencies (16 intracranial hypertension, 2 superior vena cava syndrome, 1 medullar compression and 1 tracheal compression) and 1 (0.6%) case of infectious emergency (febrile neutropenia). Most frequent types of cancer were leukemia (48; 37.4%) and lymphoma (23; 13.1%). Median time to definitive diagnosis was 6 days (p_{25-75} : 2-14 days).

This study reveals that, during the first year of COVID-19 pandemic, there was not a decrease in total number of oncological debuts in PED but cases presented as an oncological emergency doubled. During 2020 there was a significant increase in incidence of oncological debut, probable related to a reduction in the number of admissions due to other issues. At the same time, this marked decline in care pressure in PED could contribute to improve the quality of clinical circuits in admitted patients. It is important to highlight that, unlike adults, children are usually more guarded by parents and visited earlier by a doctor¹.

Hyperleukocytosis, tumor lysis syndrome and intracranial hypertension were the main oncological emergencies diagnosed, being the way of presentation of around a third of tumors, similar to previous studies⁵. Increase in oncological emergencies could be related to the reduction of patients consulting for other reasons at the start of the pandemic. The limited access to Primary Care probably made patients attend directly to hospital with more advanced symptoms^{2,3,5}. Time to definitive diagnosis was comparable in both periods of time, revealing that hospital

activity in relation to oncological patients was effectively preserved.

The main limitation of the study is being retrospective. It is possible that some information of clinical data has been lost, even though the medical records of these patients are usually detailed.

In conclusion, despite the fact that the start of COVID-19 pandemic had a minimum impact in total number of oncological debuts in PED, an increase of medical emergencies were evidenced. Once the diagnosis suspicion was established, medical management of these patients did not differ from the referent one and time to diagnosis confirmation was similar to pre-pandemic period.

Conflicts of Interest

The authors declare they have no conflicts of interest.

References

1. Acha T. Early diagnosis and warning signs in pediatric oncohematology. In: AEPap Edition 12 2015;177-186.
2. Coma E, Guiriguet C, Mora N, et al. Impact of the COVID-19 pandemic and related control measures on cancer diagnosis in Catalonia: a time-series analysis of primary care electronic health records covering about five million people. *BMJ Open* 2021;11(5):e047567.
3. Ribes J, Pareja L, Sanz X, et al. Cancer diagnosis in Catalonia (Spain) after two years of COVID-19 pandemic: an incomplete recovery. *ESMO Open* 2022;7(3):100486.
4. Ferrari A, Zecca M, Rizzari C, et al. Children with cancer in the time of COVID-19: An 8-week report from the six pediatric onco-hematology centers in Lombardia, Italy. *Pediatr Blood Cancer* 2020;67(8):e28410.
5. Stephanos K, Dubbs SB. Pediatric Hematologic and Oncologic Emergencies. *Emerg Med Clin North Am* 2021;39(3):555-571.