

Incidence, Mortality Rates and Hospital Morbidity for Children, Adolescents and Young Adults in Brazil: the Information from Cancer Registry is in the Mortality System

doi: <https://doi.org/10.32635/2176-9745.RBC.2018v64n3.56>

Incidência, Mortalidade e Morbidade Hospitalar por Câncer em Crianças, Adolescentes e Adultos Jovens no Brasil: Informações dos Registros de Câncer e do Sistema de Mortalidade

Incidencia, Mortalidad y Morbilidad Hospitalaria por Cáncer en Niños, Adolescentes y Adultos Jóvenes en el Brasil: Informaciones de los Registros del Cáncer y del Sistema de Mortalidad

*National Cancer Institute José Alencar Gomes da Silva. Rio de Janeiro: INCA; 2016. 412p.
ISBN 978-85-7318-318-4 (versão impressa)
ISBN 978-85-7318-315-3 (versão eletrônica)*

Marceli de Oliveira Santos¹

The first publication on pediatric cancer in Brazil was released in 2008 and included information on the cancer morbidity and mortality profile in children and adolescents. The publication marked a turning point for cancer in children and adolescents, launching the issue for discussion and expanding knowledge on the Brazilian reality and the importance of using and sharing such information¹.

The second publication of its kind, launched in 2017, expanded the scope to include young adults and incorporated data on hospital morbidity into the analysis, shedding light on the profile of cancer care for this age group in the Unified National Health System (SUS).

Cancer in children, adolescents, and young adults (0 to 29 years of age) has a significant public health impact in Brazil: it is the second leading cause of death in this age group in Brazil and the first cause of death from disease. It is considered rare when compared to cancer in adults. The number of new cases (incidence) accounts for 2% to 4% of all malignant tumors in the country.

In children under one year of age, the incidence differs clinically and biologically from cancers affecting older children. In Brazil, the median percentage was 6% of all tumors diagnosed up to 14 years of age, while in the world this proportion is 10%^{2,3}. Median incidence was 126.58/1 million, with a predominance in males, and leukemias were the class of malignancies with the highest incidence, followed by tumors of the central nervous system (CNS). There is also a relevant proportion of unidentified neoplasms, reflecting the diagnostic difficulty in this age bracket. In children and adolescents, Brazil follows the profile of other countries, with leukemias as the most frequent class in both these age groups (33% from 0 to 14 years and 26% from 0 to 19 years). In the 0 to 14-year group, CNS tumors rank second (16%), similar to developed countries. In children and adolescents combined (0 to 19 years), lymphomas rank second (14%), similar to the profile in developing countries. Median incidence in this group was 139.99 cases per million, with peaks in the 1-4 and 15-19-year brackets. The cancers with the highest incidence were leukemias (37.75/1 million), lymphomas (18.31/1 million), and tumors of the CNS (18.08/1 million)⁴⁻⁶.

Pediatric cancer mortality was the leading cause of death from disease. From 0 to 14 years, the mean mortality rate was 32.07/1 million, while from 0 to 19 years it was 44.25/1 million. The 15-19-year bracket showed the highest risk of death (54.01/1 million), while the 5-9-year bracket showed the lowest risk. Leukemias (14.94/1 million) were the most frequent, followed by CNS tumors (10.26/1 million) and bone tumors (3.14/1 million). The survival estimate for Brazil reaches 64%, quite different from the developed countries, where it exceeds 80%⁶. Brazil also varies considerably in pediatric cancer survival by region of the country (50% in the North, compared to 75% in the South).

¹ Instituto Nacional de Câncer José Alencar Gomes da Silva (INCA). Rio de Janeiro (RJ), Brazil. Orcid iD: <https://orcid.org/0000-0001-5197-2019>

Corresponding author: Rua Marques de Pombal, 125 - Centro. Rio de Janeiro (RJ), Brazil. CEP 20230-240. E-mail: msantos@inca.gov.br.



Pediatric cancer accounted for 3% of all neoplasms treated in referral hospitals for cancer treatment in the Unified National Health System (SUS). The most frequent types were leukemias (30.6%), lymphomas (16.6%), and CNS tumors (9.3%). The majority were treated at hospitals accredited in pediatric oncology, while in the 15-19-year bracket this proportion was less than 60%. Analysis of the time elapsed between initial consultation, diagnosis, and start of treatment is an important measure for identifying the cancer patient's difficulties in access to specialized care, whether due to the delay in diagnostic confirmation or in starting treatment. The time between first consultation and diagnosis was 30 days or less in 84% of cases, and between diagnosis and the start of treatment it was 30 days or less in 75% of cases. Among patients who presented without diagnosis and without treatment, 81% began their treatment within 30 days; of those that presented with diagnosis but without treatment, 67% started treatment in 60 days or more, probably reflecting the difficulty in access for patients who received the diagnosis at other (non-specialized) health services.

The publication also provides previously unpublished data on young adults. This group differs from both children and adults, and the incidence in the 15 to 30-year bracket is 2.7 times higher than in children under 15 years⁷. Young adults also differ as to types of cancer, with lymphomas and carcinomas as the most frequent types in this group. There is a predominance of females, due to the high incidence of uterine cervical and thyroid tumors. The main causes of death were leukemias and CNS tumors. The age bracket with the highest risk was 25 to 29 years (87.85/1 million), with uterine cervical cancer as the principal cause of death in this age bracket. This group failed to show the same improvement in cancer survival as in children and adolescents, possibly due to difficulty in access and diagnostic delay.

In cancer care, the most frequent tumors were carcinomas and lymphomas. Time from the first consultation to diagnosis was up to 30 days in 72% of cases, but from diagnosis to the start of treatment it was more than 60 days in 75% of cases. Patients that presented without diagnosis and without treatment, in 66% of cases, started their treatment within 60 days, while only 23% of those that presented with diagnosis but without treatment were treated within the same time frame. Median time from the consultation to diagnosis was double that in children and adolescents, and it was four times greater between diagnosis and start of treatment.

Knowledge of the cancer profile in this specific age group in Brazil is essential for effective measures to control the disease and assist health services' planning. Information on the time intervals is essential to back strategies and optimize diagnostic and treatment processes, which have a direct impact on the patient's odds of cure. Such information also highlights the challenges for overcoming diagnostic difficulties, signaling the importance of centralizing diagnostic review and the multidisciplinary teamwork in specialized centers.

REFERENCES

1. Instituto Nacional de Câncer José Alencar Gomes da Silva. Câncer da criança e adolescente no Brasil: dados dos registros de base populacional e de mortalidade. Rio de Janeiro: INCA; 2008.
2. Little, J. Introduction. In: Little, J. Epidemiology of childhood cancer. Lyon: IARC; 1999. p. 1-9. (IARC Scientific Publications; no. 149).
3. Birch JM, Blair, V. The epidemiology of infant cancers. *Br J Cancer*. 1992 Aug;18 Suppl:S2-S4.
4. Howlader N, Noone AM, Krapcho M, Garshell J, Neyman N, Altekruse SF, et al., editors. SEER Cancer Statistics Review, 1975-2010. [Internet]. Bethesda, MD: National Cancer Institute; 2013. [update 2013 Jun 14; cited 2016 Jun 28]. Available from: https://seer.cancer.gov/csr/1975_2010/.
5. Parkin DM, Stiller CA, Draper GJ, Bieber CA. The international incidence of childhood cancer. *Int J Cancer*. 1988;42(4):511-520.
6. Ries LA, Smith MA, Gurney JG, Linet M, Tamra T, Young JL, et al, editors. Cancer incidence and survival among children and adolescents: United States SEER program 1975-1995. Bethesda, MD: National Cancer Institute, SEER Program, 1999. (NIH Pub; no. 99-4649).
7. Bleyer A, O'Leary M, Barr R, Ries LAG, editors. Cancer epidemiology in older adolescents and young adults 15 to 29 years of age: including SEER incidence and survival: 1975-2000. Bethesda, MD: National Cancer Institute, 2006. (NIH Pub; no. 06-5767)

Recebido em 7/1/2019
Aprovado em 10/1/2019