INFANT CANCER IN ARMENIA NATIONWIDE SURVEY FOR THE PERIOD OF 1995-2021

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The Pediatric Cancer and Blood Disorders Center of Armenia, Hematology Center named after Prof. R. H. Yeolyan | SOHO 2022

soho 2022 ANNUAL MEETING

Pediatric Cancer and Blood Disorders Center of Armenia
Hematology Center after Prof. R. H. Yeolyan

Background

Cancer among infants is very rare and requires adapted multimodality approaches for diagnosis and treatment. Before 2008 limitations of effective pediatric cancer treatment in Armenia belonging to low and middle income countries (LMIC), resulted high mortality rate in infants. The situation has substantially improved since then.

Objective

The aim of this study was to evaluate the incidence of different cancer subtypes in children younger than one-year age in Armenia.

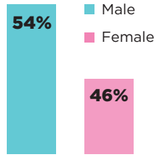
Materials & Methods

Retrospective study was conducted among children (age of 0-12 months) with cancer, who were treated and/or diagnosed at Hematology Center after Prof. R. H. Yeolyan, Muratsan Hospital Complex of YSMU and Pediatric Cancer and Blood Disorders Center of Armenia between 1995 and 2021. It should be noted that the third center was established in 2019 as a result of merging all existing pediatric hematology and oncology units in Armenia. Epidemiological, social, medical information was collected through all 971 patients charts review.

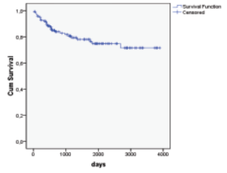
Summary

During the mentioned period of time 61 children aged less than one year were diagnosed with cancer. Out of 61 patients 19 had fatal outcome, majority of cases (13 patients, 68%) of deaths were reported before 2008. Survival rate of infants diagnosed with cancer after 2008 was reaching 85%.

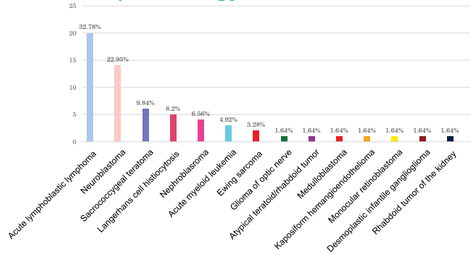
Occurrence of malignancy by gender

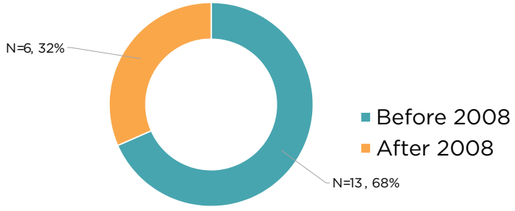


Overall survival for pediatric cancer 2008-2019



Epidemiology of cancer in infant

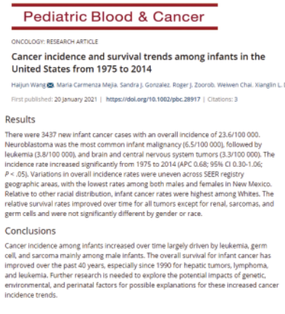




Infant Mortality in Armenia

Discussion

This is the first nationwide report of cancer cases among infants in Armenia. Among infant cancers representing 6.3% (61/971) ALL demonstrated the highest incidence. Multidisciplinary care, availability of essential diagnostic and treatment modalities helped to improve survival rate of infants with cancer after 2008.


Pediatric Blood & Cancer

ONCOLOGY: RESEARCH ARTICLE

Cancer incidence and survival trends among infants in the United States from 1975 to 2014

Haijun Wang, Maria Carmenza Mejia, Sandra J. Gonzalez, Roger J. Zoorob, Weiwen Chai, Xianglin L. Du

First published: 20 January 2021 | https://doi.org/10.1002/pbc.28917 | Citations: 3

Results

There were 3437 new infant cancer cases with an overall incidence of 23.6/100 000. Neuroblastoma was the most common infant malignancy (6.5/100 000), followed by leukemia (3.8/100 000), and brain and central nervous system tumors (3.3/100 000). The incidence rate increased significantly from 1975 to 2014 (APC 0.68; 95% CI 0.30-1.06; $P < .05$). Variations in overall incidence rates were uneven across SEER registry geographic areas, with the lowest rates among both males and females in New Mexico. Relative to other racial distribution, infant cancer rates were highest among Whites. The relative survival rates improved over time for all tumors except for renal, sarcomas, and germ cells and were not significantly different by gender or race.

Conclusions

Cancer incidence among infants increased over time largely driven by leukemia, germ cell, and sarcoma mainly among male infants. The overall survival for infant cancer has improved over the past 40 years, especially since 1990 for hepatic tumors, lymphoma, and leukemia. Further research is needed to explore the potential impacts of genetic, environmental, and perinatal factors for possible explanations for these increased cancer incidence trends.


THE LANCET Oncology

Submit Article

Neonatal cancer

Summary

Neonatal cancer is rare and comprises a heterogeneous group of neoplasms with substantial histological diversity. Almost all types of paediatric cancer can occur in fetuses and neonates; however, the presentation and behaviour of neonatal tumours often differs from that in older children, leading to differences in diagnosis and management. The causes of neonatal cancer are unclear, but genetic factors probably have a key role. Other congenital abnormalities are frequently present. Teratoma and neuroblastoma are the most common histological types of neonatal cancer, with soft-tissue sarcoma, leukaemia, renal tumours, and brain tumours also among the more frequent types. Prenatal detection, most often on routine ultrasound or in the context of a known predisposition syndrome, is becoming more common. Treatment options pose challenges because of the particular vulnerability of the population, neonatal cancer raises diagnostic, therapeutic, and ethical issues, and management requires a multidisciplinary approach.

References

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