ALL-393

SOHO ANNUAL MEETING 2024

INCIDENCE AND GEOGRAPHIC DISTRIBUTION OF PEDIATRIC ACUTE LEUKEMIA IN ARMENIA: EVALUATION OF ASSOCIATIONS WITH ENVIRONMENTAL AND SOCIO-ECONOMIC RISK FACTORS

Grigor Vardanyan MD[1], Anna Avagyan MD[1], Mane Gizhlaryan MD[1], Nune Karapetyan MD[2,3], Gevorg Tamamyan MD, MSc, PhD, DSc[1,3], Lala Vagharshakyan MD[1,3]

[1]Pediatric Cancer and Blood Disorders Center of Armenia, Yeolyan Hematology and Oncology Center, Yerevan, Armenia.

[2]Clinic of Adults' Oncology, Yeolyan Hematology and Oncology Center, Yerevan, Armenia.

[3]Yerevan State Medical University after Mkhitar Heratsi, Yerevan, Armenia

YEOLYAN HEMATOLOGY AND ONCOLOGY CENTER, MINISTRY OF HEALTH OF ARMENIA

INTRODUCTION

The risk factors for pediatric acute leukemia are still poorly understood. Although ionizing radiation is recognized as a significant risk factor, the potential impact of other environmental and socioeconomic variables remains under investigated. In particular, limited data are available from resource-limited settings.

AIM

To conduct a comprehensive study on pediatric acute leukemia's incidence and geographic distribution across various regions of Armenia and to identify correlations between incidence rates and region-specific risk factors.

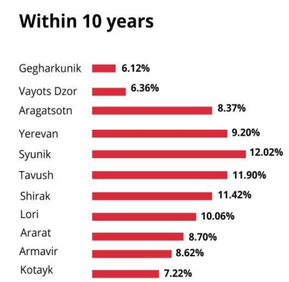
METHOD

This study is cross-sectional. Medical data of pediatric acute leukemia patients diagnosed from 2011 through 2020 were retrospectively evaluated. Census sampling was used to measure illness incidence and distribution across areas. Data were assessed in Excel.

RESULTS

Data from 257 patients were collected, showing that the incidence of pediatric acute leukemia remained stable between 2011 and 2020 , with the highest peak in 2016 (42.9 per 1 million population). The highest incidence was in Yerevan (n=86), followed by Shirak (n=27) and Armavir (n=25), corresponding to the most populated regions. Assessing the acute leukemia incidence scale impact helped assess the illness burden. Syunik recorded the highest rate (434.2 per 10,000 population), followed by Tavush (430.0) and Shirak (412.7). The highest occurrence rates were in Syunik, where most copper and molybdenum mines are located. In the Shirak province, known for the earthquake of 1988, the high incidence of pediatric hematologic malignancies might be associated with post-traumatic stress disorder. Similarly, residents of Tavush province, who are under continuous attack from a neighboring aggressor country, may face a high incidence of acute leukemias due to chronic stress. Although significant carcinogenic operations are located in the provinces of Gegharqunik (gold mine) and Armavir (nuclear power plant), no notable disease burden is observed in these areas.





CONCLUSIONS

The regional variations in pediatric acute leukemia incidence in Armenia indicate potential associations with local environmental factors such as mining operations and chronic stress, necessitating further scientific research to elucidate these links.

ACKNOWLEDGEMENTS

The authors have no acknowledgements to declare

CONTACT INFORMATION

Email: grigvardanyanmd@gmail.com

Phone number: +37498299904

Blood.am