Primary Philadelphia Chromosome-Negative Acute Lymphoblastic Leukemia Among Adolescents and Young Adults Between 2017-2022 in Armenia

Iveta Mosesyan MD[1], Hayk Grigoryan MD[1,2], Miranush Saaryan MD[2]
[1]Yerevan State Medical University, Yerevan, Armenia. [2]Hematology Center after Prof. R. Yeolyan, Yerevan, Armenia

BACKGROUND

Acute lymphoblastic leukemia (ALL) is characterized by the involvement of B-cell or T-cell lineages and is classified into subtypes based on the immunophenotype of the cells, which is determined by the presence of specific antigens on the cells. The presence of the Philadelphia (Ph) chromosome is significant for the choice of treatment strategy and in the prognosis of the disease.

OBJECTIVE

To determine the frequency of Ph-negative ALL among adolescents and young adults (AYAs) aged 15-39 years.

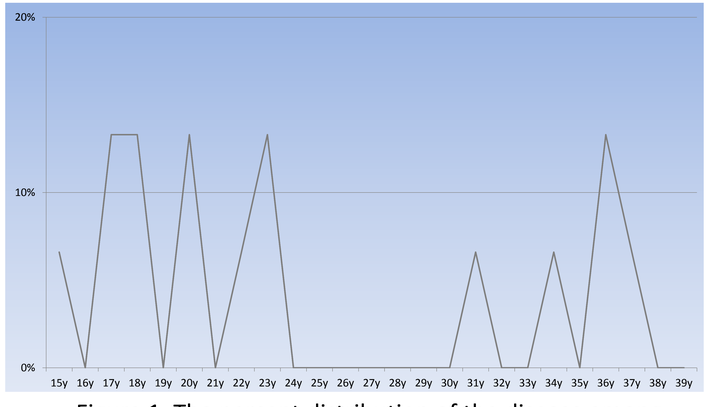


Figure 1. The percent distribution of the disease among Ph-negative ALL cases aged 15-39years.

SETTING

Hematology center after prof. R. Yeolyan, Yerevan, Armenia.

MATERIALS AND METHODS

Retrospective ALL cases were observed and diagnosed within 2017-2022 years. Within this time period, 15 cases were associated with AYAs and were identified as primary Ph-negative ALL. The average age of the patients was 24 years. The sex ratio was 9 males to 6 females.

RESULTS

Among them, 10 primary cases were associated with B-cell lineage and 5 primary cases with T-cell lineage ALL. Based on flow cytometry, the 15 cases were classified immunophenotypically: 3 cases of early precursor B-cell (early pre-B-cell) (20%), 7 cases of pre-B-cell (46.6%), 2 cases of early T-cell precursor (ETP) (13.3%), 1 case of early immature T-cell (6.6%) and 2 cases of cortical/thymic T-cell (13.3%) ALL.

CONCLUSION

Among youth, as the age increases, the incidence of the disease decreases. B-cell lineage ALL is more common and is often represented by the pre-B-cell subtype.

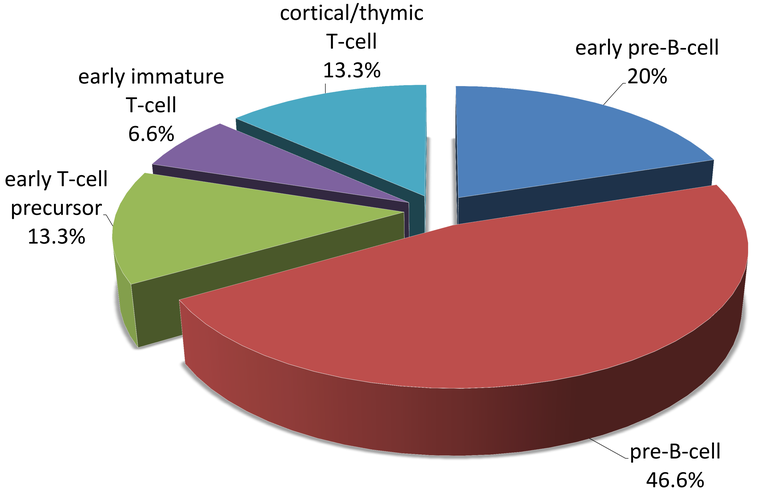


Figure 2. The frequency of ALL subtypes among AYAs