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Familial cases of acute leukemia in children in Uzbekistan

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INTRODUCTION

Siblings of children with leukemia are at greater risk of developing leukemia than children whose siblings do not have the disease (Draper et al. 1977; Heath and Moloney 1965).

AIM

In this regard, we aimed to assess the risk of developing acute leukemia in siblings of patients in a single-center study. To study the role of family history of cancer in the etiology of acute leukemia in children.

METHOD

1550 children under 15 year with acute leukemia: 1300 (83,9%) acute lymphoblastic leukemia (ALL) and 250 (16,1%) acute myeloblastic leukemia (AML) who received treatment from 2018 to 2023 at the Center for Pediatric Hematology, Oncology and Clinical Immunology (Tashkent, Uzbekistan). All the leukemia cases were confirmed by bone marrow analysis. All patients were examined by immunological, molecular genetic and cytogenetic studies; the desired translocations were not identified. All patients had no hereditary burden of blood diseases. The familial history of cancer was collected for the first (siblings) degree relatives for children with childhood leukemia were diagnosed with the same (concordant) or different (discordant) cancer.

RESULTS

During the study period 12 familial cases were identified with acute leukemia (0.8%- 12/1550), when 2 cases were in identical same-sex twins (male-male and female-female). Among 1550 acute leukemia patients, 6 ALL patients (including twins) had a family history of ALL, that is, 0.4% (6/1550), 2 ALL patients had a family history of AML. And total of 4 children (0.3% - 4/1550) were diagnosed AML when 2 first-degree relatives were diagnosed with the same leukemia (AML), 2 siblings were diagnosed ALL at age under 15 year.



	ALL	AML	Male	Female
1	++		++	
2	++		++	
3	++		++	
4	+	+	+	+
5	+	+	+	+
6		++		++

CONCLUSIONS

We showed that 0.5% of childhood ALL patients and 0.3% of childhood AML patients had a family history of acute leukemia in line with familial proportions for other rare cancers. These studies suggest that genetic factors and family history of cancer may play a role in the etiology of acute leukemia in children. Perhaps in the future it is necessary to examine patients and close family members using the NHS method to identify characteristic mutations as risk factors.

REFERENCES

1. **Familial history of cancer and childhood acute leukemia: a French population-based case-control study** Eur J Cancer Prev. 2007 Oct; 16(5): 466–470. **doi:** 10.1097/01.cej.0000243849.82232.cb
2. **Gunz FW, Gunz JP, Veale AMO, Chapman CJ, Houston IB. Familial leukaemia: a study of 909 families.** ***Scand J Haematol.*** **1975;15:117–131. [PubMed] [Google Scholar]**

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