PP 02_Case Report

A NEW LOOK AT THE TREATMENT OF PATIENTS WITH ACUTE LEUKEMIA

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Objective: For the first time, we had to organize an induction period for the treatment of acute leukemia in an outpatient setting. The reason was the problems that arose during the hospitalization of patients during COVID-19 infection. to study the effectiveness of the obtained results and to find out the possibility and importance of widespread use of this tactic in the future. **Methodology:** The study group included 25 patients diagnosed with acute leukemia. Among them, 21 patients had lymphoblastic leukemia (19 patients with B-cells, 4 patients with T-cells), 2 patients with myeloblastic leukemia (1 patient with M2, 1 patient with promyelocytic leukemia M3). The age range of the patients was from 2 years to 2 months to 15 years (median = 8.5-years). The male/female ratio was 10/15. Treatment of acute lymphoblastic leukemia was carried out according to the Moscow-Berlin-2015 program, the B-ImRG protocol was used in 15 patients, the A-SRG protocol in 2 patients, Bt(12:21) in 2 patients, the T-Low protocol in 1 patient and protocol T-ImRG in 3 patients. In one of the patients with Myeloblastic leukemia (M2), the "7+3" protocol was used, in the other (M3) the APL-.2000 protocol was used. **Results:** Obtained showed that the induction period of treatment for patients with acute leukemia can be carried out completely on an outpatient basis. The organization of treatment in the "day hospital + night outpatient" format made it possible to carry out both the main treatment (chemotherapy) and concomitant therapy in a timely and without problems. Replacing intravenous "flush therapy" with oral fluids did not cause serious problems, including "lysis syndrome". The initial leukocyte count (10.6–116 × $10^{9/l}$), as well as the level of blastemia (4%–99%) and blastosis (45.4%–96.8%) did not cause serious concern in any patient, despite the standard of concomitant therapy. Biochemical parameters, including nitrogen metabolism parameters, fluctuated within normal limits in all patients. In all patients, the induction course was carried out to the end and ended in complete remission. **Conclusion:** The results showed the possibility and prospects of further expansion of outpatient treatment of patients with acute leukemia.

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PP 03_ Case report

CYTOGENETIC FEATURES OF B-CELL ACUTE LYMPHOBLASTIC LEUKEMIA WITH INTRACHROMOSOMAL AMPLIFICATION OF CHROMOSOME 21

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Objective: To investigate the cytogenetic features and prognosis of B-ALL with iAMP21. **Methodology:** Retrospective analysis of data from 15 children diagnosed with B-ALL and iAMP21 seen in the Department of Hematology, Union Hospital, Tongji Medical College HUST from 2021 to 2024. Screened patients ranged in age from 1 month to 18-years. All were diagnosed with B-ALL using standard morphological and immunophenotypic criteria. Patients in this study were classified as iAMP21 using the criteria of 5 or more RUNX1 signals per cell and by a ratio of RUNX1 to tel 21q signals exceeding 1. **Results:** In this study, 15 patients demonstrated 5 or more RUNX1 signals per interphase nucleus. Compared to RUNX1, all cases showed fewer subtelomeric signals in interphase cells, ranging from 1 to 5. The accurate interphase distinction of iAMP21 was made by calculating the ratio of RUNX1 to subtelomeric signals; the minimum and maximum values were 1.67 and more than 10, respectively. Metaphase FISH data were recorded if available. Of the cases, 5 of 15 demonstrated 3 or more extra copies of RUNX1 on a single abnormal chromosome 21 with the morphology of mar,r(21)c and add(21)c. Using MLPA, 4 of 15 cases showed gene deletion, including IKZF1, CDKN2A/B, ETV6, BTG1, and RB1. All cases received chemotherapy according to CCCG-ALL-2020. Induction regimens included a combination of vincristine, prednisone, and pegaspargase with daunorubicin. High-Dose Methotrexate (HD-MTX) and 6-Mercaptopurine (6-MP) were incorporated into consolidation regimens. Maintenance regimens were based on a backbone of daily 6-MP and weekly methotrexate with periodic vincristine and prednisone. 14 achieved remissions, and MRD remained negative; 1 did not achieve remission, and MRD was > 0.01%. **Conclusion:** iAMP21 is a primary cytogenetic abnormality located in the same region of amplification as the RUNX1 gene and a common region of deletion at the telomere. Some patients display other genetic abnormalities in addition to iAMP21. iAMP21 is associated with inferior outcomes, and patients with this abnormality require more intensive therapy.

Summary of Cases of B-ALL With iAMP21

Case No.	Age, y/ Sex	WBC Count, × 10^9/L	*RUNX1* copies/ cell	tel 21q copies/ cell	*RUNX1*/tel 21q ratio	*RUNX1* copies/ iAMP21 chromosome	MLPA	Remission
1	8/F	1.3	>10	1	>10	>10/mar3	N	Yes
2	8/M	2	5	1	5	NP	N	Yes
3	7.4/M	5	8	4	2	NP	N	Yes
4	8.6/M	5.2	5~12	3~5	2.04	>5/r	N	Yes
5	7/M	12	5~8	1	6.5	NP	N	Yes
6	5.7/F	10	6~8	2	3.5	NP	*IKZF1* detetion	Yes
7	10.5/F	300	7~10	3~5	2.17	4~5/add(21)(q22)	N	Yes
8	4/M	60	5	1	5	NP	N	Yes
9	7/F	1.2	5	3	1.67	NP	*CDKN2A/B, ETV6, BTG1, RB1* detetion	Yes
10	6/M	12	5	3	1.67	4/add(21)(q22)	N	Yes
11	11/F	3	5~7	3~4	1.71	NP	*RB1, ERG* detetion	No
12	8/F	4.8	>10	5	>2.4	NP	N	Yes
13	14/M	10	5	3	1.67	NP	N	Yes
14	8/F	19	9~10	1	9.5	NP	N	Yes
15	11/F	1.8	6	2	3	5/add(21)(q22)	*CDKN2A, IKZF1* detetion	Yes

N,normal; NP,not performed.

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