PP 06_ Case report

INVESTIGATION OF POSTURAL CONTROL IN CHILDREN WITH ACUTE LYMPHOBLASTIC LEUKEMIA

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Objective: Children with leukemia may face balance impairments due to somatosensory, motor, muscular, and cognitive deficits that can persist into adulthood and increase fall risk. This study aimed to evaluate postural control in children with Acute Lymphoblastic Leukemia (ALL) undergoing consolidation therapy by comparing their performance with normative data to identify potential treatment-related impairments in sensory integration and balance. **Methodology:** Thirteen children with ALL were recruited at Dokuz Eylül University, Faculty of Physiotherapy and Rehabilitation in Turkey, and divided into two age groups: 6–7 years (n = 9) and 8–9 years (n = 4). Static balance was evaluated using the modified Clinical Test for Sensory Interaction on Balance (mCTSIB) with the Balance Master system. The test assessed postural control under four conditions: Eyes Open-firm surface (FirmEO), Eyes Closed-firm surface (FirmEC), eyes open-unstable (foam) surface (FoamEO), and eyes closed-unstable (foam) surface (FoamEC). The center of gravity's average sway speed (°/s) was measured for each condition, with higher values indicating reduced balance capability. Normative data for each condition were obtained from previous studies on healthy children. **Results:** In the 6–7 years group, sway speeds during FirmEO and FirmEC were 0.92 s and 0.97 s, respectively, compared to norms of 0.70s and 0.92s. Under foam conditions, FoamEO reached 1.31s (norm: 1.20s), while FoamEC was 1.81s, nearly identical to the normative 1.80s. In the 8–9 years group, FirmEO was 0.55s (norm: 0.40s) and FirmEC was 0.65s (norm: 0.53s). FoamEO measured 0.82s (norm: 0.89s), whereas FoamEC was 1.70s (norm: 1.47s). Overall, these results suggest that children with ALL generally exhibit elevated sway speeds – particularly under firm conditions – implying impaired postural control and potential challenges in sensory integration. **Conclusion:** Our findings demonstrate that postural control is compromised in children with ALL undergoing consolidation therapy. Elevated sway speeds on firm surfaces suggest diminished balance performance, while the mixed results on foam conditions highlight difficulties with sensory integration. These preliminary observations underscore the need for targeted interventions and further research with larger samples to clarify the mechanisms behind these deficits.

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Adult Hematology Abstract Categories

Acute Myeloid Leukemia

PP 07_Case report

PROGNOSTIC VALUE OF CD56 EXPRESSION IN CHILDREN WITH ACUTE MYELOID LEUKEMIA

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Introduction: Expression of lymphoid markers (CD2, CD3, CD5, CD7) in Acute Myeloid Leukemia (AML) is an important prognostic factor that affects the clinical outcome of these patients. CD56 antigen is a NK cell marker that is expressed in several lymphohematopoietic neoplasms, including AML. The presence of CD56 antigen on blast cells can affect the duration of Complete Remission (CR), and is also associated with short overall survival and resistance to therapy. We studied a cohort of children diagnosed with AML treated from 2022–2024 and assessed the association of CD56 expression with therapy outcomes. **Methodology:** To determine the frequency of CD56 by flow cytometry in children with AML and to study the prognostic significance of this marker. Materials and Methods: The study included 31 patients aged 0–16 years diagnosed from January 2022 to December 2024. The study was conducted on a BD FACS CANTO flow cytometer using an 8-color panel of monoclonal antibodies. Marker expression on blast cells of more than 20% was considered positive. **Results:** CpeThe total observation period was 31 months. The patients were divided into 3 age groups: 0–5-years – 5 (16%), 5–10-years – 12 (38.7%), 10–16 years – 14 (45%) patients, male – 17 (54.8%), female – 14 (45%). In the general observation group, 19 (62%) patients were in complete clinical and hematological remission, 10 (34%) patients had bone marrow relapse, 4% had resistance to therapy. In 7 (23%) cases, positive expression of CD56 was observed, of which 3 (9.6%) cases of AML with signs of maturation, 1 (3%) case of promyelocytic, 3 (9.6%) cases of myelomonoblastic leukemia. Among CD56 positive AML patients, mutations such as t(8;21)(q22;q22), ct(15;17), t(11q23), inv(16) were detected. Survival analysis was performed using the Kaplan-Meier method. The achievement of complete remission in response to induction chemotherapy between CD56-positive and CD56-negative groups was almost identical (85% and 81%). Relapse-free survival between CD56 positive and negative variants was significantly different (67% vs. 48%). Among children with AML with CD56-positive, higher relapse and mortality rates were observed than in the CD56-negative group ($p < 0.05$). **Conclusion:** We consider CD56 expression as an independent prognostic factor. It is recommended to keep in mind that the presence of this

marker is associated with some cytogenetic abnormalities. CD56 is a potential factor for poor prognosis in groups of children with AML and should be taken into account when stratifying risk groups.

Keywords: Submit Feedback, Sidebars, History, Saved.

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PP 08_ Case report

LOW DOSE CYTARABINE PLUS SORAFENIB IN AN ELDERLY PATIENT WITH ACUTE MYELOID LEUKEMIA

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Introduction: Acute Myeloid Leukemia (AML) is the most common acute leukemia in adults and is generally associated with a poor prognosis. The failure of therapeutic approaches in AML treatment is attributed to various clinical characteristics of patients, disease biology, and treatment intensity. Mutations in the Fms-Like Tyrosine kinase-3 (FLT3) receptor have been reported in approximately one-third of AML cases. The most common FLT3 mutation is Internal Tandem Duplication (ITD), which has been identified in approximately 25% of adult AML patients and in 3%–5% of newly diagnosed Myelodysplastic Syndromes (MDS). FLT3-ITD is associated with high White Blood Cell (WBC) counts, elevated Lactate Dehydrogenase (LDH) levels, increased percentages of blast cells in the blood and bone marrow, and poor clinical outcomes. However, it does not appear to significantly affect the ability of adult patients to achieve Complete Remission (CR). **Objective:** This case report presents the response of a 71-year-old AML patient to low-dose Cytarabine (Ara-C) combined with sorafenib treatment. **Case presentation:** A 71-year-old female patient presented in February 2024 with complaints of excessive thirst, fatigue, weakness, and loss of appetite. At diagnosis, leukocytosis, anemia, and thrombocytopenia were observed. Peripheral blood smear analysis revealed blast cell infiltration, and immunophenotypic studies identified markers consistent with the AML M5 subtype: CD34+/− (3.4%), CD123+, CD33+, CD13+, CD14+, CD36+, CD64+, HLA-DR+, and cMPO+. Conventional karyotyping was normal, whereas molecular analysis detected FLT3-ITD (51%, 27 bp mutant). Given the patient's overall health status, a treatment regimen of low-dose Ara-C (20 mg BID on days 1–10) and sorafenib (400 mg on days 11–28) was initiated. Due to hematologic toxicity, dose reductions were necessary during treatment. After four cycles, bone marrow aspiration revealed a blast percentage of 0.8%, FLT3-ITD mutation was no longer detectable, and Minimal Residual Disease (MRD) negativity was achieved, confirming Complete Remission (CR). This treatment protocol was selected based on the patient's clinical condition, leading to a successful outcome. **Results:** FLT3-ITD-positive AML patients may benefit from low-dose Ara-C and sorafenib therapy, particularly when carefully selected based on clinical criteria. However, further comprehensive randomized prospective studies are required to better evaluate the efficacy and safety of this approach. **Discussion:** This case highlights the efficacy of low-dose cytarabine and sorafenib combination therapy in an elderly AML patient with FLT3-ITD mutation. FLT3-ITD mutation is a well-established marker of poor prognosis in AML and is associated with resistance to conventional therapies. In elderly AML patients, treatment decisions are often challenging due to comorbidities and reduced tolerance to intensive chemotherapy. The standard approach for geriatric AML patients includes hypomethylating agents combined with BCL-2 inhibitors, with the addition of FLT3 inhibitors when indicated. However, given the patient's high frailty index, a decision was made to initiate low dose cytarabine and sorafenib therapy, resulting in complete remission and MRD negativity. It is important to note that hematologic toxicity may require dose adjustments during treatment, as observed in this case. Macdonald et al. conducted a Phase I/II study in 21 patients with MDS and AML, reporting a complete response rate of only 10% with low dose cytarabine and sorafenib therapy. Although this outcome may seem discouraging, our case demonstrates that this combination remains a viable option for selected elderly AML patients with FLT3-ITD who are ineligible for intensive chemotherapy. Nevertheless, larger scale randomized controlled trials are necessary to further assess the efficacy and safety of this treatment approach. In the future, investigating the combination of this regimen with other targeted agents, such as venetoclax, may expand treatment options. Additionally, long-term follow-up data and quality-of-life assessments will be essential to understanding the real-world effectiveness of this therapeutic strategy.

Keywords: AML M5, FLT3-ITD mutation, Low-dose Ara-C, Sorafenib.

Patient Monitoring Summary.

Timepoint	WBC ($\times 10^9$/L)	HGB (g/dL)	PLT ($\times 10^9$/L)	Bone Marrow Blast Percentage	Peripheral Blood Blast Percentage	FLT3-ITD Mutation
At Diagnosis	102	9.8	50	Not performed	67%	51% (27 bp mutant)
Post-4th Cycle	3.14	10	228	0.8%	Absent	Negative

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PP 09_ Case report

OUTCOMES OF ALLOGENEIC STEM CELL TRANSPLANTATION IN PATIENTS WITH ACUTE MYELOID LEUKEMIA: A SINGLE-CENTER EXPERIENCE

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