Case Report on Mixed Phenotype Acute Leukemia

Dr.R.Rajasekar[1], Dr. M. Nataraj[2], Dr.Dhananjeyan[3], Dr. R. Ranjiv[4]

[1]*Sr. Consultant Physician & Diabetology, RR.Charitable and Educational Trust, Heart and Diabetes Therapy Centre, Kumbakonam.*

[2]*Associate Professor in General Medicine, Government Thiruvarur Medical College, and Hospital*

[3]*Associate Professor in General Medicine, Government Thiruvarur Medical College, and Hospital*

[4]*Junior Resident in General Medicine Government Thiruvarur Medical College, and Hospital*

Introduction

Mixed phenotype acute leukemia (MPAL) is a rare subtype of acute leukemia with features of both acute lymphoblastic leukemia (ALL) and acute myeloid leukemia (AML). Bilineage T lymphoid and myeloid malignancy is rare. In most cases, leukemic blast cells were detected initially in the peripheral blood and bone marrow, meeting the diagnostic criteria of leukemia. Very few number of cases of T/My bilineage malignancy presenting initially with extramedullary infiltration.

Case Report

Forty-five years old females complained of chest discomfort and breathlessness. No comorbid conditions. Vitals stable, Pallor, hepatomegaly, and sternal tenderness present on examination.

Investigations

Complete hemogram showed severe anemia, thrombocytopenia, along with leukocytosis. Renal function tests, liver function tests, electrolytes were within normal limits. Urine examination normal, viral markers- negative. ESR -45mm at 1 hr.

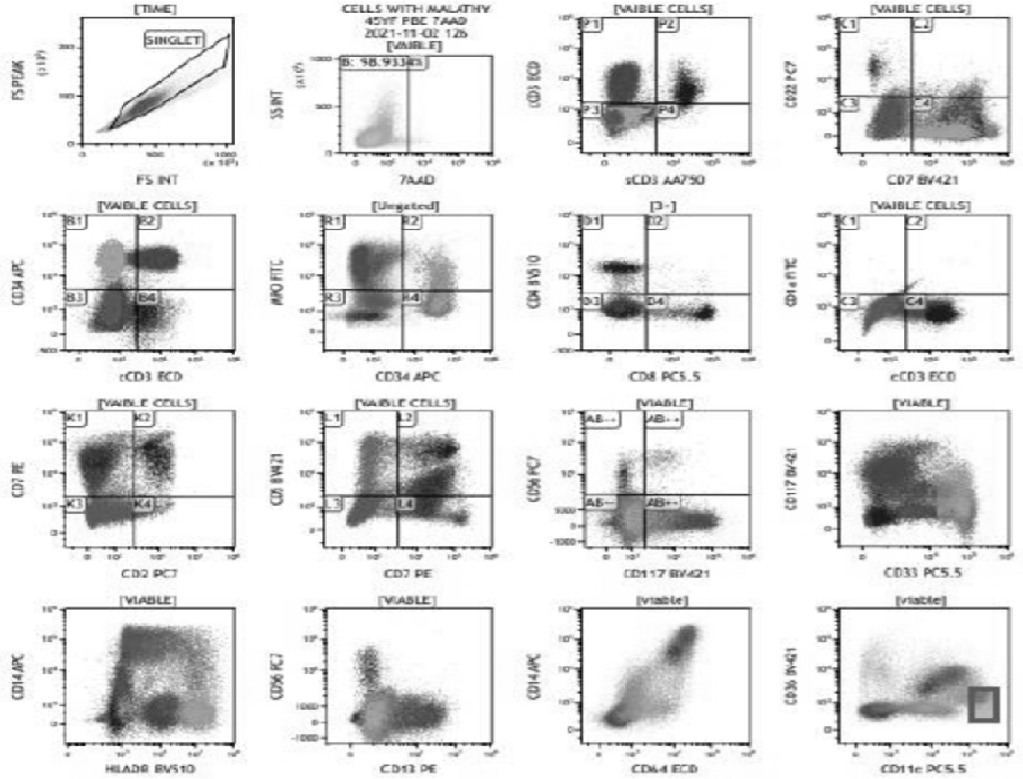

Figure 1: Immunophenotypic findings

Peripheral smear - Leukoerythroid blood picture, proceeded with Bone marrow study which showed 20% blast cells, possibly acute myeloid leukemia. Immunophenotypic findings suggest Mixed Phenotypic Acute Leukemia-T lymphoid / Myeloid (MPAL-Tcell/Myeloid). (Figure 1) ECHO- Left-sided pleural effusion present. CT chest- B/L pleural effusion present. CT abdomen- Hepatomegaly and b/l pleural effusion present. Fundus examination- no significant findings detected. Thyroid function tests were normal. Blood and urine cultures were negative. PT/INR- normal. Ferritin - elevated. Reticulocyte count -0.6%

Management

The patient was transfused with two Packed red blood cells units and referred to a higher center for chemotherapy/stem cell transplantation.

Conclusion

This case highlights the necessity of Immunophenotyping as an important role in diagnosing rare leukemia, Mixed Phenotypic Acute Leukemia.

References

1. Ion Dorin Bleahu, Roxana Vladasel, Anca Gheorghe: Journal of medicine and life Volume 4, Issue 3, July-Sept 2011:297-301.
2. Hanson CA, Abaza M, Sheldon S,et al. Acute biphenotypic leukemia: immunophenotypic and cytogenetic analysis. Br.J.Jaematol.1993;84;49-60.
3. Matutes E, Morilla R, Farahat N, et al. Definition of acute biphenotypic leukemia. Haematologica. 1997;82:64-66.