The Prognostic Impact of LDH/Albumin Ratio on Acute Leukemia of Ambiguous Lineage.

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Introduction

Acute leukemias of ambiguous lineage (ALAL) accounts for 2% to 5% of acute leukemia (AL)[1]. LDH and albumin levels provide valuable information about the patient's immune status, inflammatory response, and tumor load and have been identified as prognostic indicators for various types of cancer[2].

Aim

The primary objective is to identify the incidence and basic characteristics of ALAL, and the secondary objective is to study the prognostic impact of LDH/albumin ratio (LAR).

Patient and Method

A retrospective study included 39 ALAL adult patients who presented during 2010–2023. The study was carried out at the Oncology Center of Mansoura University. Of the 39 patients with ALAL, 13 were female and 26 were male, with a mean age of 36.28±14.66 years.

Intervention

Data were collected by reviewing medical records of ALAL patients and include basic characteristics, type of and response to induction therapy, and overall survival. LAR was calculated as LDH (U/L) to albumin (g/dL).

Results

In this study, ALAL accounted for approximately 3.5 % of adult AL. The ALAL patients were classified as: 13 cases (33%) T/myeloid, 12 cases (31%) B/myeloid, 8 cases (21%) B/T lymphoid, and 6 cases (15%) acute undifferentiated leukemia. The median WBC was 22×10^9/L, blast cells 90%, and platelet count 46×10^9/L. The mean HB was 7.5 gm/dL. Moreover, 28 patients were treated with an ALL-like regimen, 6 cases with 7+3 regimen and 5 cases with palliative therapy. Response assessment for the 34 non-palliative therapy patients: 20 patients achieved complete remission (of which 85% received the ALL-like regimen), induction death occurred in 9 patients, and 5 patients were refractory to therapy. Relapse occurred in 10 patients (50%). The AUCROC analysis that predicted death was 0.769 (95% CI, 0.618–0.921; P=0.007) for LAR. Overall survival was significantly lower in patients with LAR >222.3 (P=0.044).

Conclusion

Considering that ALAL is a rare leukemia, optimal management remains a dilemma for many clinicians. Use of the LDH/albumin ratio—a simple, affordable, and available baseline—seems promising as a prognostic marker despite the small sample size.

References

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