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Prognostic significance of progenitor cell markers CD34/CD38 expression in acute myeloid leukemia Egyptian patients

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Introduction: The relapse of Acute Myeloid Leukemia (AML) is thought to reflect the failure of current therapies to target leukemia stem cells, typically enriched in the CD34/CD38 cell population.

Aim: The aim of this study was to determine the prognostic significance of progenitor cell markers CD34/CD38 in AML.

Methods: Progenitor cell markers CD34/CD38 expression was determined on bone marrow mononuclear cells of 84 newly diagnosed adult AML patients with 18 age and sex matched controls, using CD38FITC/CD34PE panel of monoclonal antibodies and analyzed by flow cytometry technique.

Results: Expression of CD34 and CD38 cell markers was detected in 79.8% and 85.7% of AML patients respectively, and there was a highly significant difference of CD 34 expression among cases and controls ($p \leq 0.001$). No significant correlation was found between both markers and any of the hematological findings, cytogenetic and FLT3 mutation except with peripheral blood blasts ($p=0.05$ and 0.005, respectively) and FAB subtypes for CD34 ($p=0.006$). A significant correlation was found between various CD34/CD38 groups and total leucocytic count, hemoglobin, peripheral blood blasts, and FAB subtypes ($p=0.05$, 0.047, 0.035 and 0.002 respectively). Also, there was no significant association between both markers expressed separately or in combination with response rate, overall survival and progression free survival.

Conclusion: Both progenitor cell markers CD34/CD38 expression might be used as susceptible markers providing important clues for future studies in the early detection of resistant AML cases.

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