Journal of Leukemia
ISSN: 2329-6917
OPEN ACCESS Freely available online
Perspective

The Prognosis for Acute Leukemia with a Low Platelet Count Affected by the Heterogeneous Variant

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DESCRIPTION

A hematological cancer with a poor prognosis and a high mortality rate is leukemia. The most prevalent symptoms of acute leukemia are blood system problems, including anemia, abnormal platelet counts, and abnormal white blood cell counts. Chemotherapy has been linked to a better long-term prognosis in people with Acute Myeloid Leukemia (AML), according to studies. Early Complete Remission (CR) patients had a longer survival time. Age affects the molecular genetic characteristics of AML patients at the time of diagnosis, and as AML develops, the molecular genetics of individuals with a good prognosis increasingly deteriorate. The percentage of gene or chromosomal alterations that indicate a poor prognosis, however, gradually rises. The extent of blood cell recovery in CR patients is related to prognosis, according to numerous researches. Additionally, the effects of the therapy are vastly superior to those with low blood cells. The impact of platelet count on the prognosis for AML at diagnosis and following chemotherapy is uncertain, though. In order to investigate the impact of platelet count and related parameters on prognosis at first diagnosis and after chemotherapy, 301 newly-treated AML cases were retrospectively analyzed in the institute for the study. The effect of molecular genetic mutations on the newly diagnosed platelet count and its prognosis was also examined using biological data. AML prognosis can be predicted independently using studies that have recently revealed a negative connection between platelet count and Overall Survival (OS) before therapy. Rebound thrombocytosis, platelet production, and platelet recovery time following platelet induction chemotherapy are additional aspects of initial platelets that are independent predictive indicators of AML or Acute Lymphocytic Leukemia (ALL) Index.

AML prognosis is now influenced by age, total White Blood Cells (WBC) counts, time to CR, cellular, and molecular genetic alterations. However, hemorrhage, platelet transfusion, and a rise in platelet count following chemotherapy were among the prognostic-related risk variables in this study. Age used to be the main variable affecting the prognosis of AML. Due to their poor physical health and high-risk molecular genetic traits, older patients had a bad prognosis. In this study, there were 41.2 AML patients on average, ranging in age from 55 to 75 56 to 75 and 75 or older. Age did not affect the degree of alleviation following the chemotherapy treatment, presumably because there were relatively few elderly patients and most newly-treated AML patients admitted to the hospital were under the age of 55. To determine the precise cause, however, more investigation is required. A bone marrow blast cell count of less than 5%, peripheral blood tri-lineage cell recovery, the absence of white blood cells in the categorization, and the absence of symptoms and indications brought on by leukaemia infiltration are the standards of CR. According to this study's findings, some patients with AML had bone marrow blast numbers below 5% but their platelet counts did not rise following a chemotherapy course. Of the 166 cases that underwent Complete Remission (CR), 39 cases underwent partial remission, 76 cases had no remission, and 20 cases died. Additionally, their prognosis was much worse than that of CR patients and only marginally better than that of drug-resistant patients. According to this study, those receiving chemotherapy had a better prognosis than those without high platelet counts. Pancreatic cancer cells have a distinctive trait called mechanical reactivity. In pancreatic cancer, the mechanical response to the proteins like actin, myosin, fibrin are expressed. Heterogeneous variant encourages the spread of cancer, 4-Hydroxyacetophenone (4-HAP) enhances variant assembly, hardens the cells, and 4-HAP reduces tumor metastasis. The mechanoresponsive protein is up-regulated as pancreatic cancer progresses, suggesting that by concentrating on the cytoskeleton, it can increase the survival rate of people with pancreatic cancer. Additionally, this protein system can be used as a drug target to prevent pancreatic cancer and cell metastatic potential.

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Received: 03-Apr-2023, Manuscript No. JLU-23-24736; **Editor assigned:** 06-Apr-2023, Pre QC No. JLU-23-24736 (PQ); **Reviewed:** 27-Apr-2023, QC No. JLU-23-24736; **Revised:** 04-May-2023, Manuscript No. JLU-23-24736 (R); **Published:** 11-May-2023, DOI: 10.35248/2329-6917.23.11.333

Citation: Agnes S (2023) The Prognosis for Acute Leukemia with a Low Platelet Count Affected by the Heterogeneous Variant. J Leuk. 11:333.