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Impact of Pre-existing Cardiovascular Disease on Clinical Outcomes in Acute Myeloid Leukemia Patients

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Commentary

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DESCRIPTION

The incidence of both Acute Myeloid Leukemia (AML) and Cardiovascular Disease (CVD) escalates with age, presenting considerable challenges in clinical management. The group of researchers conducted a retrospective analysis of 291 consecutive adult AML patients treated from 2014 to 2020 to assess the impact of pre-existing Cardiovascular Disease (CVD) on clinical outcomes. Comorbidities that existed before treatment were discovered by chart review. The outcomes comprised rates of Complete Remission (CR) and CR with incomplete Count Recovery (CRi), Disease-Free Survival (DFS), Overall Survival (OS), and the occurrence of cardiovascular adverse events. At the time of AML diagnosis, 34% of patients already had CVD. Patients exhibited poorer performance status (p=0.03), were more commonly diagnosed with secondary AML (p=0.03), and received hypomethylating agent-based therapy at a higher frequency (72% *vs* 38%, p<0.001). Both CVD (0.45 *vs* 0.71, p<0.001) and diabetes mellitus (HR=0.24, 95% CI: 0.08–0.8, p=0.01) were associated with a lower probability of achieving CR/CRi.

Even after adjusting for age, Performance Status (PS), complex karyotype, secondary disease, and treatment, patients with CVD had a shorter OS (HR=1.5, 95% CI: 1.1-2.2, p=0.002), with 1- and 3-year OS rates of 44% *vs* 67% and 25% *vs* 40%, respectively. However, there was no significant difference in the cumulative incidence of relapse between patients with and without CVD. Thus, CVD emerges as an independent risk factor for lower response rates and shorter survival in AML patients.

Cardiovascular Disease (CVD) and cancer, including AML, are diseases predominantly affecting the aging population and remain leading causes of mortality in the United States. Notably, cardiovascular risk factors and conditions are frequently encountered at the time of AML diagnosis. In a study utilizing the Surveillance, Epidemiology, and End Results (SEER)-Medicare linked database, AML patients aged 65 years and older exhibited more prevalent baseline comorbidities, including Diabetes Mellitus (DM), Congestive Heart Failure (CHF), and myocardial infarction

In this study utilizing the Surveillance, Epidemiology, and End Results (SEER)-Medicare linked database, AML patients aged 65 years and older exhibited more prevalent baseline comorbidities, including Diabetes Mellitus (DM), Congestive Heart Failure (CHF), and myocardial infarction. The primary aim of our investigation was to assess the Overall Response Rate (ORR) and Overall Survival (OS) in AML patients with and without pre-existing CVD (CVD *vs*. no-CVD groups). Secondary objectives included evaluating Disease-Free Survival (DFS) and the frequency of cardiovascular complications, Intensive Care Unit (ICU) admissions, and early mortality (<60 days after treatment initiation).

The study cohort comprised 98 patients (34%) with pre-existing CVD and 193 (66%) without CVD. Patients with CVD were notably older ($p<0.001$), exhibited worse performance status (PS) ($p=0.01$), and demonstrated a higher prevalence of hypertension ($p<0.001$), hyperlipidemia ($p<0.001$), and DM ($p=0.002$), along with a higher body mass index ($p=0.04$). Additionally, patients in the CVD group exhibited elevated hemoglobin A1c levels ($p=0.02$), though similar levels of low-density lipoprotein were observed. In the study, we sought to address the paucity of data regarding the incidence and impact of CVD in patients with various malignancies, including AML. By characterizing the hematologic and cardiovascular outcomes in a cohort of AML patients with and without pre-existing cardiovascular risk factors and conditions, we found that over one-third of AML patients presented with at least one cardiovascular condition at the time of AML diagnosis. Notably, treatment response was notably inferior, and overall survival was significantly shorter among those with pre-existing cardiovascular risk factors and conditions.

The study underscores the substantial impact of pre-existing cardiovascular disease on clinical outcomes in patients with acute myeloid leukemia. The presence of cardiovascular disease at diagnosis is associated with diminished treatment response rates, shortened overall survival, and heightened cardiovascular complications. These findings underscore the critical importance of comprehensive risk assessment and tailored treatment strategies for AML patients with underlying cardiovascular comorbidities. Future research endeavors should aim to explore interventions targeted at optimizing outcomes in this high-risk patient population