Obesity Is an Independent Adverse Prognostic Factor for Overall Survival in Adult Patients with Acute Myeloid Leukemia

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Background:

Obesity is associated with an increased risk of acute myeloid leukemia (AML). However, its effect on leukemia outcome has not been well-established.

Objective:

To determine the impact of obesity on AML outcome.

Methods:
This observational prospective study included; 74 De novo-AML patients diagnosed from 2019-2021 at Zagazig University.
Initial Body mass index (BMI) was divided into 2 groups:54 normal or over-weight (18.5-30 kg/m_2); and 24 obese (≥30 kg/m_2). Chi-square and Mann–Whitney tests were used to compare between both groups. Overall-survival (OS), time from diagnosis to death from any cause, was determined by Kaplan-Meier and compared by logrank test. Cox Regression was performed to detect survival effect of obesity. P<0.05 statistically significant.

Results:

about 30.8% of patients were obese, 66.7% were males, 10.8% with DM and HTN, 30.7% had adverse cytogenetics and 8.3% underwent HCT. Baseline characteristics were similar in both groups except, female sex and DM was higher in obese (p<0.05).

Obese group showed lower response to chemotherapy (41.7% vs 66.7%, P=0.038), with higher mortality rates (83.3% Vs. 51.9%, P=0.008). However, no difference was found in relapse (50% vs 40%, P=0.575).OS for normal/overweight and obese groups at 2 years was 34.6%, and 12.5% respectively (p=0.016). Obesity, when adjusted for other characteristics in multivariate Cox-regression,
was an independent risk factor for death (HR 1.99, 95% CI 1.11-3.58, P=0.021).

Conclusions:

Obese AML patients, compared to non-obese, had Poor response to chemotherapy with higher mortality rate, but did not differ in relapse rate. Obesity, was an independent adverse prognostic factor for AML survival.

Keywords:
Obesity; BMI; AML; Survival; outcome