

4th International Conference on

Blood Malignancies & Treatment

April 18-19, 2016 Dubai, UAE

Serum leptin and adiponectin levels in *de novo* acute myeloid leukemia patients: Correlation with clinical characteristics

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Introduction: Acute myeloid leukemia (AML) is a heterogeneous clonal stem cell malignancy characterized by proliferation of immature hematopoietic cells. Adipokines in particular leptin and adiponectin are novel, highly active molecules that have attracted considerable interest due to their potential role in the development of cancer as a risk factor.

Aim: We aimed to measure the body mass index, serum levels of leptin and adiponectin in AML patients, correlating these levels with standard prognostic markers of the disease.

Materials & Methods: A total of 60 newly diagnosed AML Egyptian patients attended to NCI, Cairo University and twenty healthy controls age and sex matched were enrolled. Diagnosis was based on WHO criteria. All patients had complete blood counts, bone marrow aspiration/biopsy specimens, EDTA peripheral blood or bone marrow aspirate specimens for flow cytometry analysis, and heparinised sample for cytogenetic study. Serum leptin and adiponectin were assayed in both patients and controls by enzyme linked immune assays.

Results: Serum leptin were determined at a level of 10.9 ± 9.5 ng/ml in the patient group which is significantly lower than the controls 60.2 ± 165.6 ng/ml ($p < 0.02$). Serum adiponectin showed highly significant lower levels in the patient group compared to controls 1.5 ± 0.9 and 4.6 ± 2.9 respectively ($p < 0.001$). No significant correlation was detected between serum adipokines (leptin & adiponectin) and other clinical, or laboratory parameters except a negative significant correlation were detected between serum adiponectin and bone marrow blast cell percentage. According to cytogenetic analysis, patient group was divided into two risky subgroups: Favorable ($n=20$), intermediate and unfavorable ($n=40$). No significant correlation between cytogenetic and serum leptin and adiponectin levels ($p=0.98, 0.38$) respectively. The current study addressed the reduction of adipocytokines levels in *de novo* AML together with negative correlation between bone marrow blasts and adiponectin levels suggesting the implication of adipocytokines in pathogenesis of AML, however these findings necessitate additional studies of adipocytokines in AML patients and to be related to other risk factors as severe illness, altered energy balance and disease complications on large scale of cases.

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