Summary And Conclusion

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Acute myeloid leukemia represents one of the highly fatal malignancies which have poor prognosis and short survival. Its overall incidence reaches 2 to 3 per 100000 persons annually. It represents 20 % of acute leukemias in children and its incidence is more higher in older ages than younger.

Many factors are usually associated with or predisposed to occurrence of acute myeloid leukemia including congenital chromosomal abnormalities, familial aggregation, certain viruses infection, bone marrow diseases, and certain drugs as cytotoxic drugs. Exposure to radiation is also predisposing factors to its occurrence.

Acute myeloid leukemia comprises eight subtypes according to FAB classification which are M0, M1, M2, M3, M4, M5, M6, and M7, in addition to other rare types.

Patients who suffered from AML presented by various clinical manifestations which affect the majority of their body systems. In addition to the clinical manifestations, blood examination and bone marrow smear examination are needed for confirming AML diagnosis. Although many agents are used for induction remission in patients with AML, the majority of patients die.

This study was conducted on 45 AML patients, in addition to 10 normal persons as control group, aiming at evaluating certain cytokines (IL-6, IL-8, and TNF-α) and sFas in patients suffered from AML, the correlation between these cytokines and sFas with blast cells percentage and different FAB subtypes, and if there is implication for these factors on response to chemotherapy.

Full history taking, thorough clinical examination, complete blood picture, blast cells percentage in blood and bone marrow, FAB subtypes, IL-6, IL-8, TNF-α and sFas, all were done for every patient at presentation. Whereas, blasts percentage in blood and bone marrow, CBC, IL-6, IL-8, TNF-α and sFas were evaluated after the end of chemotherapy by 2 weeks.

The results obtained from this work indicated that the prevalence of AML does not differ among various ages or sexes, although it is slightly higher in males than females. From the multiple clinical manifestations that the patients presented with it, pallor is the most predominant one accounting for 97.8%, followed by sternal pain or tenderness (66.7%). Most of patients presented with hemoglobin $\leq$ 10 gm/dl, total WBCs $\geq$ 5000 cells/ml and blast cells between 30% to 70% in the bone marrow.

The most frequent FAB subtype in this study was M2 followed by M1, while the least frequent were M4 and M5. FAB subtypes were not different between males and females.

51.1% of patients achieved complete remission, while 40% showed partial remission, and the remaining 8.9% were died during the course of chemotherapy. The causes for death were infections, anemic heart failure, and severe bleeding. Different sexes didn't exhibit changes in the response to chemotherapy.

It was obvious that, the presence of purpura worsens the response to chemotherapy, as complete remission in patients with purpura

was significantly less achievable than that in those without purpura. At the same time, increased total leucocytic count worsens the response to chemotherapy.

There were statistically higher IL-6, TNF-α, and sFas levels in AML patient than in controls. On the other hand, IL-8 level showed insignificant differences between AML patients and controls. Significant decrease in TNF-α level by chemotherapy was noticed while IL-6, IL-8, and sFas level did not decreased by chemotherapy.

TNF-α level was higher in males than females, on the other hand, no significant changes could be observed with IL-6, IL-8, and sFas between males and females.

The levels of sFas, IL-6, and, IL-8 had significant negative correlation with blast cells percentage in bone marrow at presentation.

There were significant differences in IL-6, TNF-α and sFas levels with FAB subtypes. The highest IL-6 was observed in M5, the highest TNF-α was noticed in M1, and the highest sFas was found in M4. On the other hand, IL-8 had insignificant correlation with FAB subtypes.

Different IL-6, IL-8, TNF-α, or sFas levels had insignificant effects on the response to chemotherapy.

Combination of elevated both IL-6 and TNF-α levels was associated with worse response to chemotherapy, whereas, any other combinations among IL-6, IL-8, TNF-α, and sFas did not associated with significant differences regarding to response to chemotherapy.

Lastly, it was concluded that:

1-IL-6, TNF-α, and sFas levels are higher in AML patients than control group.

2-There are significant variations in IL-6, TNF-α , and sFas levels among different FAB subtypes of AML, the highest IL-6 level is observed in M5, the highest TNF-α is found in M1, and the highest sFas level is elicited in M4.

3-Variations of IL-6, IL-8, TNF-α, or sFas levels have no effects on response to chemotherapy.

4-The only combination that associated with poor response to chemotherapy is the elevation of both IL-6 and TNF-α levels whereas other combinations have no effects on response to chemotherapy.

5-Chemotherapy can reduce the TNF-α level in AML patients but cannot reduce IL-6, IL-8 or sFas level.