

# Summary & Conclusion

## Summary

**By** the close observation and searching; the percentage of different tumors is rapidly growing up by a scaring value, from those tumors the AL and the AML percentage which affect mostly the older age.

CD133 is a stem cell marker found to be present in many cancers. The interest in this molecule has grown exponentially, since it appears to be an important cell surface marker widely used to identify and isolate stem cells from various sources. It is a five pentaspan transmembrane glycoprotein called to be the molecule of the moment for its importance. It has two alleles AC133-1 and AC133-2.

In this study we select the CD133 to test its value in the diagnosis of AML cases by using the flow cytometry and consequently the appropriate treatment and the prognosis of these cases. The present study aimed to evaluate its association with the different demographic, clinical and laboratory data, as well as its relation to disease outcome.

The current study was carried out on 40 patients; 30 newly diagnosed AML patients and 10 control patients. All patients were subjected to complete history taking, thorough clinical examination and laboratory investigations including: complete hemogram, bone marrow aspiration with examination of Leishman-stained peripheral blood and bone marrow smears and immunophenotyping.

CD133 expression was not associated with any the studied demographic and clinical data except for the bone pains affecting the patients.

As for FAB classification of AML cases and the relation with CD133; FAB M<sub>3</sub> and M<sub>4</sub> have significant correlation with CD133 expression.

Statistically, there are significant associations between CD133 expression and some of the studied prognostic factors of patients representing the reversed relation between it and TLC, Hb and PLT. Moreover, concerning the monoclonal antibodies there are significant associations between CD133 and HLA-DR, CD3, CD7 and TDT, high significance for CD13, and very high significance for CD34.

According to the relation of CD133 and CD34 as stem cell markers, this study on AML patients showed that CD133 is more sensitive than CD34 which is more important to diagnose the AML patients.

There is no significant association found between CD133 positive expression and the clinical outcome of the studied cases although the responses to chemotherapy decrease by increasing the value of CD133 indicating poor prognosis with CD133<sup>+</sup> cells.

## Conclusion

- ✚ CD133 is a stem cell marker highly expressed on the immature cells but also it's proved to be present by high percentage in the cases of AML/M<sub>3</sub> and AML/M<sub>4</sub> patients.
- ✚ There is very high association between CD133<sup>+</sup> and CD34<sup>+</sup> as both are early stem cell markers revealing bad prognostic indicators in the patients.
- ✚ CD133 is less specific than CD34 in diagnosis of acute leukemia being less useful in the primary diagnosis but CD133 is more sensitive than CD34 as a myeloid marker as its expression is highly in AML cases than ALL and can be used for diagnosis of AML cases.
- ✚ CD133 expression is an independent prognostic factor in acute leukemia and its expression could characterize a group of acute leukemia patients with higher resistance to standard chemotherapy, relapse or death.
- ✚ CD133 expression was highly associated with poor prognosis in acute myeloid leukemia patients.