Paediatric acute myeloid leukaemia: analysis by fluorescence in situ hybridisation

Vani Chandrashekar[1], Anil Tarigopula[2], and Perumal Govindasami[1]

[1]Apollo Hospitals Enterprise Ltd
[2]Hindu Mission Hospital

March 30, 2022

Abstract

Background: Paediatric acute myeloid leukaemia (AML) is heterogeneous. Frequency of cytogenetic abnormalities varies from adults. Methods: Children with de novo AML were included. Peripheral blood was analysed for complete blood counts and bone marrow was analysed by fluorescence in situ hybridisation for genetic abnormalities. Results: 53.6% patients had cytogenetic abnormalities. Recurrent genetic abnormalities were seen in 34.7%. Commonest recurrent genetic abnormality was RUNX1-RUNX1T1 rearrangement seen in 14.4%, followed by PML-RARA rearrangement seen in 8.6%, MLL gene rearrangement in 8.6% and CBFB-MYH11 rearrangement in 2.8% patients. In children aged more than five years, PML-RARA and RUNX1-RUNX1T1 were commonest whereas, in children aged five and less, RUNX1-RUNX1T1 and MLL rearrangements were the only recurrent genetic abnormalities. Patients with cytogenetic abnormalities differed significantly with respect to hemoglobin, total leucocyte count and platelet count. Conclusion: FISH alone can classify patients into AML with common recurrent genetic abnormalities. However, other methods are required for complete classification.

Hosted file

`Paediatric acute myeloid leukaemia.docx` available at https://authorea.com/users/469415/articles/562300-paediatric-acute-myeloid-leukaemia-analysis-by-fluorescence-in-situ-hybridisation