ALL 076

CLINICAL AND PROGNOSTIC IMPACT OF PI3K MUTATION AND IL-10 (G1082A) IN EGYPTIAN PATIENTS WITH T CELL ACUTE LYMPHOBLASTIC LEUKEMIA: A SINGLE-CENTRE EXPERIENCE

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Introduction

The PI3K/Akt/mTOR pathway is one of an altered pathways in cancer. Multiple genetic modifications in one of its key components could cause an uncontrolled hyperactivation, which leads to oncogenesis. T-ALL is represented by constitutive activation of the PI3K/Akt pathway. In recent years, further understanding of the BM microenvironment and immune landscape of leukemia could result in introduction of several targeted therapies. Interleukin-10 (IL-10) known gene that contribute in oncogenesis.

Aim

Impact of PIK3CA mutations and serum IL-10 on ORR and survival.

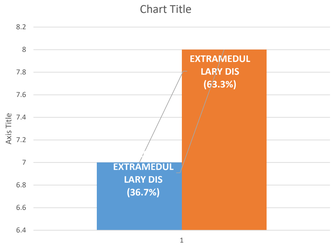
Objectives

PI3k mutation and IL-10 (G1082A) in acute T cell lymphoblastic leukemia patients

Methods

We investigated 118 adults with T ALL, between 2020 and 2024, for both PIK3CA mutations and IL-10 (G1082A). Survival analyses were performed using the Kaplan–Meier estimator and the log-rank test.

INTERVENTIONS: by PCR on circulating tumor DNA (ctDNA) for PIK3CA mutations and on serum for IL-10 (G1082A).



EXTRA MEDULLARY DISEASE AND PIK3CA MUTATATION

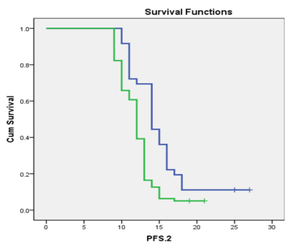
Results

PIK3CA mutations and IL-10 polymorphisms was associated with younger age (p = 0.04 & 0.03), more extramedullary disease (p = 0.05 & 0.02).

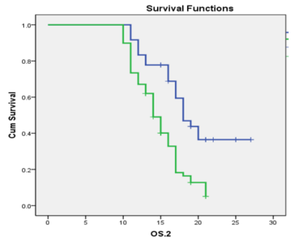
The IL-10 GG genotype was associated with higher overall survival (OS) (p = 0.04) and less PIK3CA mutations (p= 0.02).

We also found a higher frequency of IL-10-A allele in adults with longer time for the 1st complete remission (p = 0.003). and more relapse (p = 0.002).

PIK3CA mutations was associated with shorter OS (p= 0.001), more refractory disease (p= 0.04) and trend for co association with IL-10 (G1082A) (p= 0.07).



PFS OF PIK3CA MUTANT POORER THAN NON MUTANT



OS OF PIK3CA MUTANT POORER THAN NON MUTANT

Summary

A possible association exists between PIK3CA mutations and A allele of IL-10 and poor prognosis in Egyptian patients with T ALL, while the IL-10 GG genotype may be associated with better survival with T ALL. And less PIK3CA mutations.

Discussion

We can validate these results in future research on large number of patients and could be used as risk stratification.

References

Ina Nepstad 1, Kimberley Joanne Hatfield 2 3, Tor Henrik Anderson Tvedt 4, Håkon Reikvam 5 6, Øystein Bruserud. Clonal Heterogeneity Reflected by PI3K-AKT-mTOR Signaling in Human Acute Myeloid Leukemia Cells and Its Association with Adverse Prognosis. Cancers (Basel) . 2018 Sep 14;10(9):332

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