MRD MONITORING OF PHILADELPHIA CHROMOSOME-POSITIVE B ALL PATIENTS IN NORTH MACEDONIA - SINGLE CENTRE EXPERIENCE

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Introduction

Ph positive B-ALL is characterized by the presence of BCR-ABL oncoprotein that has tyrosine kinase activity and plays a big role in the leukemogenesis of this type of ALL. Quantification of BCR-ABL1 transcript levels by real-time quantitative polymerase chain reaction (RQ-PCR) and quantification of clone-specific immunoglobulin/T cell receptor rearrangements has become the gold standard for monitoring therapy response, predict relapse and help make therapeutic decisions. This study will focus on current standards in MRD monitoring of adult patients with Ph+ B-ALL in Republic of North Macedonia using BCR/ ABL quantification.

Material and methods

In this single-centre retrospective study, we evaluated MRD response based on BCR-ABL1 transcript levels by real-time quantitative PCR in Ph + ALL patients diagnosed and treated at the University Clinic for Hematology - Skopje between January 2018 and December 2022. First molecular response was evaluated after first induction therapy and then responses were evaluated at 6, 9 and 12 months after the initiation of treatment.

Results

Eight patients during this time period were diagnosed with BCR-ABL positive B-ALL. Five (62.5%) of the patient were male and 3 (37.5%) were female. The BCR-ABL1 fusion gene transcript was detected by RT-PCR initially at diagnosis in bone marrow samples. A total of Seven adult patients were treated by Hyper CVAD regiment + TKI (6 were treated with Imatinib and 1 of them with Dasatinib). One patient at age of 25 years was treated by BFM protocol + Imatinib. Two of the patients treated by Hyper CVAD died during induction therapy. At first time point- at the end of the induction regimen, MRD negativity measured with BCR/ABL levels was concluded in 6 patients (75%). Two of them discontinued the treatment with TKI and relapsed quickly. Four of the patients completed the treatment and were in complete molecular remission at every follow up. One of the patient continued the treatment with allogenic PBSCT. All of the four patients in remission continued maintenance therapy with TKI.

Conclusion

MRD measured with BCR/ABL levels after induction/ consolidation and through follow up represents standard tool for monitoring response and predict relapse.