The role of Blinatumomab in CD19 positive precursor B-cell ALL Philadelphia negative disease. a three-year update on progression free survival

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INTRODUCTION

Blinatumomab is the first-and-only Food and Drug Administration (FDA)-approved cluster of differentiation (CD) 19-directed CD3 bispecific T-cell engager immunotherapy. It is currently FDA approved for the treatment of ALL patients

AIM

To evaluate the role of Blinatumomab in patients older than 18 years showing residual disease less than 1% in the bone marrow (BM) after induction chemotherapy.

METHOD

We included a small cohort of 12 patients diagnosed with CD19 positive precursor B-cell (PH -) disease with moderate and high-risk profile. Our patients were between 18 and 30 years old (22 years in median). All of them showed a residual disease of 1% evaluated by flowcytometry. It was given as continuous intravenous infusion from day1 through day 7 as 9mcg/day and from day 8 to day 28 as 28 mcg/day. The former schedule is considered as one cycle then a bone marrow aspiration is taken 14 days after the end of infusion. Complete responders on flowcytometry proceeded to consolidation therapy without Blinatumomab.

CONCLUSIONS

Blinatumomab is a new drug used to bridge patients to allogeneic bone marrow transplant in patients with acute lymphoblastic leukemia with unfavorable risk factors. It is used in consolidation phase along with scheduled chemotherapy. In this small cohort, we have shown that blinatumomab is effective choice in purging bone marrow at the end of induction chemotherapy. The cost of the drug is a limitation in term of running a bigger trial.

RESULTS

The aspiration performed 14 days after the end of Blinatumomab infusion demonstrated a complete clearance of BM (0% of blasts) evaluated by flowcytometry documented in 8 patients (66.6%) while the other 4 patients continued to demonstrate a residual disease between 0.02 and 0.6%. in those patients another cycle of Blinatumomab led to a complete clearance of malignant cells and consequently they proceeded to consolidation therapy. The disease-free survival at 3 years was 100%. Only 1 patient diagnosed with central nervous system involvement. Toxicity profile included cytokine release syndrome documented in 7 patients and resolved after special medication. Neurologic toxicities in 10 patients ranging between headache, tremor, speech disorder to manifestations of encephalopathy treated by temporary treatment cessation and delivery of Dexamethasone at doses between 8 and 20 mg per day.

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REFERENCES

Blinatumomab use in pediatric B-ALL: where are we now? Blood Adv (2025) 9 (15): 3946–3954.