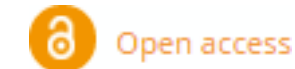




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Pediatric relapsed acute myeloid leukemia: a systematic review

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ABSTRACT

Introduction: Pediatric relapsed acute myeloid leukemia (AML) remains lethal in the majority of cases, despite intensive therapy. Randomized trials are largely lacking, and the main issues of optimal therapy and prognostic factors remain unclear.

Area covered: This systematic review includes all literature evaluating treatment outcome after first relapse. We searched databases PubMed and Embase.com. Twelve out of six thousand articles were ultimately included, based on age of the population (<21 years), relapsed AML, and information on clinical outcome (second complete remission (CR2), disease-free survival (DFS), event-free survival (EFS) and overall survival (OS)). There was only one randomized clinical trial reported. This review shows that there is no standard treatment for relapsed AML in children, and that outcome varies for CR2 and (2- to 10-year) OS rates, mean 64% (range, 50–75%), and 31% (16–43%), respectively. Children treated with chemotherapy only in first complete remission (CR1) tend to have better outcome after relapse than children receiving allo-SCT in CR1. Allo-SCT seems to be the most effective consolidation therapy in children achieving CR2, after relapse. Duration of CR1 was the most frequently reported statistically significant prognostic factor. Through randomized clinical trials, better knowledge of prognostic factors enabling risk-stratified treatment, and of more effective and less toxic therapies, should contribute to better clinical outcome for children with relapsed AML.

Expert opinion: Outcome of pediatric relapsed AML has improved to OS rates up to 40%. However, there is a