

INPLASY PROTOCOL

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Conflicts of interest:
None declared.

Effects of different Pre-transplant therapy on the outcome after transplantation of patients with myelodysplastic syndrome: A Network Meta-Analysis

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Review question / Objective: In this study, we used conventional Meta-analysis and Network meta-analysis (NMA) to evaluate the survival outcomes of best supportive care only and cytoreductive treatment before transplantation, survival outcomes of different disease states at transplantation, and the effects of each treatment on survival outcomes of MDS, respectively, with a view to comprehensive clinical treatment and individualized treatment of MDS patients before transplantation, providing evidence-based medical evidence, prolonging survival time and improving life quality.

Information sources: We will search articles in three electronic database including PubMed, EMBASE and Cochrane Library. All the English publications until 2022 will be searched without any restriction of countries or article type. Reference list of all selected articles will independently screened to identify additional studies left out in the initial search.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 07 March 2023 and was last updated on 07 March 2023 (registration number INPLASY202330027).

INTRODUCTION

Review question / Objective: In this study, we used conventional Meta-analysis and Network meta-analysis (NMA) to evaluate the survival outcomes of best supportive

care only and cytoreductive treatment before transplantation, survival outcomes of different disease states at transplantation, and the effects of each treatment on survival outcomes of MDS, respectively, with a view to comprehensive

clinical treatment and individualized treatment of MDS patients before transplantation, providing evidence-based medical evidence, prolonging survival time and improving life quality.

Condition being studied: The heterogeneity of MDS leads to the complexity and individualization of its treatment. So far, allogeneic hematopoietic stem cell transplantation (allo-HSCT) is still the only treatment that can cure MDS. However, its high transplant-related mortality and recurrence rate are still the main factors leading to post-transplant death, with overall survival (OS) of 30-52%, disease-free survival (DFS) of 16-50%, and treatment-related mortality (TRM) of 10-50%. Some MDS patients undergoing hematopoietic stem cell transplantation (upfront transplantation) received only supportive treatment prior to transplantation, including component transfusions, hormones, growth factors (erythropoietin, granulocyte colony stimulating factor), immunosuppressants, or antibiotics. The primary goal is to improve the quality of life of patients; However, Pre-transplant Cytoreductive Therapy was used when finding donors and waiting for transplants. It consists mainly of Chemotherapy (CT), Hypomethylating agents (HMAs) or a combination of both. The primary objective is to reduce tumor load. Especially for patients with bone marrow primitive cell count > 10% .

METHODS

Participant or population: Patients with MDS diagnosed according to the Chinese Guidelines for Diagnosis and Treatment of Myelodysplastic Syndromes (2019 edition).

Intervention: Pre-transplant treatments include chemotherapy, demethylation agents(HMAs), or chemotherapy+HMAs.

Comparator: Pre-transplant treatments with best supportive care.

Study designs to be included: Randomized controlled trials (RCTs) 、 case-control study、 cohort study will be included.

Eligibility criteria: Inclusion criteria:① MDS diagnosed according to the Chinese Guidelines for Diagnosis and Treatment of Myelodysplastic syndromes (2019 Edition); ② The post-transplant outcomes of MDS patients who received different pre-transplant treatments (best supportive therapy, chemotherapy, demethylation therapy and chemotherapy combined with demethylation therapy) and different disease states at the time of transplantation were compared. ③ Provide at least one of the following outcome data: overall survival (OS), relapse-free survival (RFS), cumulative incidences of relapse, CIR) and non-relapse death (NRM); (4) All survival outcome data were calculated from the date of transplantation; ⑤ For patients who have received MDS treatment, disease status is defined by International Working Group (IWG) criteria [8]. Disease states of complete remission (CR) and incomplete remission (no-CR) rate, achieved by HSCT, included complete remission (MCR), partial remission (PR), stable (SD) and progressive (PD) patients and non-response (NR) patients.Exclusion criteria:① Only children with MDS or secondary acute myeloid leukemia (sAML) were included. ② The data provided by the study are not available or sufficient; ③ The queue overlaps; (4) Reviews, conference abstracts, case reports, animal studies.

Information sources: We will search articles in three electronic database including PubMed, EMBASE and Cochrane Library. All the English publications until 2022 will be searched without any restriction of countries or article type. Reference list of all selected articles will independently screened to identify additional studies left out in the initial search.

Main outcome(s): Overall survival(OS) 、 relapse-free survival(RFS) 、 cumulative

incidences of relapse(CIR) 、 non-relapse death (NRM) .

Quality assessment / Risk of bias analysis: Newcastle-Ottawa scale, NOS.

Strategy of data synthesis: We plan to fit a Bayesian random-effects NMA model to simultaneously compare multiple regimens. All analyses will be conducted using the gemtc package (version 1.0-0) in R, version 4.2.2 (The R Foundation).

Subgroup analysis: None.

Sensitivity analysis: A one-by-one elimination method was used to evaluate whether the results of meta-analysis were significantly changed due to the influence of some studies.

Country(ies) involved: China.

Keywords: Myelodysplastic syndromes; Hematopoietic stem cell transplantation; best supportive care; cytoreductive therapy; Meta-analysis.

Contributions of each author:

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