All patients received 240µg/kg Plerixafor, for 1 (32; 76%)-cohort 1 or 2 doses (10; 24%) -cohort 2, respectively, plus 10µg/kg granulocyte colony-stimulating factor prior to collection.

The efficacy and safety of Busulfan dose intensity with Fludarabine conditioning regimen for patients with Acute Myeloid Leukemia undergoing allogeneic stem cell transplantation. A single center experience.

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BACKGROUND

The optimal dose of myeloablation in the fludarabine-busulfan (FB) conditioning for allogeneic-stem-cell transplantation (Allo-SCT) to reduce transplant complications while decreasing the risk of disease recurrence has been largely studied.

OBJECTIVE

We conducted this retrospective chart review to compare Busulfan intravenous (B) dose intensity with Fludarabine (FB).

Setting

A retrospective single-center study approved by the institutional review board of the American University of Beirut Medical Center, Lebanon.

Patients:

All patients who underwent Allo-SCT for AML between January-2010 and November-2017. All patients received fludarabine 30mg/m²/day for 5 days. However, in the study the busulfan dose was adjusted according to the disease risk profile and with respect to the age and comorbidities. Patients received busulfan intravenous at 130mg/m²/day for either 2, 3, (FB<4) or 4 days (FB4). All patients received thymoglobulin (ATG 2.5mg/kg/day on day -1 and -2), and cyclosporine 1,5mg/kg x2/day for graft versus host disease (GVHD) prophylaxis.

Main outcome measures

The primary outcome of the study was comparing overall survival (OS) and progression free survival (PFS), in patients who received FB4 versus FB<4. Secondary outcomes included transplant related mortality (TRM), incidence of acute and chronic graft versus host disease (aGVHD, cGVHD).

Results

46 patients were included in the study, 18 patients (39%) received FB4, and 28 (61%) patients received FB<4. Median age at transplant was 43 years (range 16-65). Forty-three patients (93%) were transplanted from a matched related donor, and 3 patients (7%) all in the FB<4 from matched unrelated donor. All patients received peripheral blood stem cells. After a median follow up of 36 months, the 1 year TRM was 11% in the FB4 group, and 14% in the FB<4 group (p =0.7). The incidence of aGVHD grade II-IV was 22% in FB4 vs 14% in FB<4 (p =0.8), the incidence of cGVHD was 19%, with no significant difference between the two groups. We did not observe any significant difference at one year PFS (FB4: 87% vs FB<4: 67%) and OS (FB4: 84% vs FB<4: 87%). This risk-adapted combined approach of selecting conditioning intensity minimizes post transplant complications, without affecting patient's survival. However our findings need to be confirmed in larger studies.

Conclusion

This risk-adapted combined approach of selecting conditioning intensity minimizes post transplant complications, without affecting patient's survival. However our findings need to be confirmed in larger studies.