ADDITION OF BENDAMUSTINE TO POSTTRANSPLANT CYCLOPHOSPHAMIDE IN RELAPSED AND REFRACTORY MYELOID MALIGNANCIES: PRELIMINARY ANALYSIS OF SINGLE CENTER EXPERIENCE

Nikolai Tsvetkov, Elena Morozova, Yulia Vlasova, Anna Smirnova, Sergey Bondarenko, Ivan Moiseev, Alexander Kulagin

RM Gorbacheva Research Institute, Pavlov University, St. Petersburg, Russia

Introduction: Patients who receive allogeneic hematopoietic stem cell transplantation (HSCT) with relapsed and refractory forms of acute myeloid leukemia (AML) and myelodysplastic neoplasms (MDS) have mostly dismal outcomes. At our institution we developed prophylaxis of graft-versus-host disease (GVHD) through addition of bendamustine to cyclophosphamide for those patients who undergo HSCT with active disease.

Patients and methods: We included 53 patients with AML (n=34) and MDS (n=19) in the analysis. Median age was 51 years (IQR 38-59). All patients did not achieve remission at the time of HSCT with median bone marrow blast count 14.8% (IQR 8.8-35.6). All patients received GVHD prophylaxis with tacrolimus and mycophenolate mofetil starting at day +5, and reduced cyclophosphamide 25 mg/kg with bendamustine 50 mg/m2 on days +3, +4. According to the Transplant Conditioning Intensity score 1 patient received high intensity, 31 patients received intermediate intensity, and 21 patients received low intensity conditioning. Eleven patients received haploidentical HSCT, 15 patients had matched related donors, and 27 patients had unrelated donors. Median follow-up was 5 months (IQR 3-11).

Results: One-year overall survival was 36.1% (95%CI 22.2-50.2), 1-year relapse-free survival was 21.4% (95%CI 10.5-34.8), 1-year GVHD- and relapse-free survival was 2.1% (95%CI 0.2-9.7), 1-year relapse incidence (RI) was 53.1% (95%CI 37.5-66.4), 1-year non-relapse mortality was 25.6% (95%CI 14.6-38.1), 150 days acute GVHD incidence was 42.3% (95%CI 28.8-55.2), 1-year chronic GVHD incidence was 28.3% (95%CI 16.2-41.6). Four patients developed primary graft failure. In multivariate analysis of RI the level of bone marrow blasts at the time of HSCT was the independent risk factor (HR 1.04, 95%CI 1.02-1.06, $p<0.001$). Evidence of graft-versus-leukemia effect was confirmed by early immune reconstitution.

Conclusion: Relapsed and refractory myeloid malignancies are resistant to the immune effect of HSCT in conventional settings. Novel strategies should be investigated and implemented in this population.