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# Decitabine for treatment of relapsed myelodysplastic syndrome after allogeneic stem cell transplantation: Case report

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## Abstract

**Introduction:** The only curative treatment available for myelodysplastic syndromes (MDS) is hematopoietic stem cell transplantation (HSCT). There are two types of conditioning regimens followed by HSCT: reduced-intensity conditioning (RIC) and standard (myeloablative) conditioning. RIC regimens were designed to perform allogeneic HSCT in patients who had a high risk of death due to toxicity of standard preparative chemotherapy regimens (elder patients, patients with severe comorbid conditions, or heavy pretreated patients). However, the use of RIC can increase the risk of relapse after HSCT. We report the single case of treatment with decitabine of relapsed MDS after RIC matched related allograft stem cell transplantation.
**Patient characteristics:** The patient was a 49-year-old female, who had been diagnosed with MDS, refractory anemia with an excess of blasts II, and IPSS-3, which was verified in September 2007 based on anemia, leucopenia, blasts in bone marrow >10%, multiple dysplastic signs, and multiple chromosomes' disorders (46,xx,del(2)(p22),add(3)(q29)[15] / 46,xx,del(2)(p22) [3] / 46,xx [2]).
**SCT and follow up:** Due to high risk MDS (IPSS-3), it was decided to perform allograft HSCT from an HLA identical sibling as the first line treatment (day 0, 18 January 2008). The conditioning regimen was RIC (Fludarabin+Busulfan). GVHD prophylaxis was CSA + MTX.
The engraftment was carried out on day +16. On day +30 the patient had mixed chimerism (50%); 46,xy; and complete disappearance of chromosomes' disorders and no evidence of acute GVHD.
However, disease relapse was revealed on day +68 (15% of blasts in bone marrow, cytopenia, multiple chromosomes' disorders). On day +72 CSA was stopped. On day +82 a donor lymphocytes infusion (DLI) №1 was performed. Nevertheless, on day +93 there were still signs of disease progression (22% of blasts in bone marrow, mixed chimerism 30%).
Decitabine 20 mg/m$^2$/day, 1-hour IV infusion for 5 days, was started with the main goal to reduce the blasts quantity in the bone marrow. DLI №2 and DLI №3 were performed on days +110 and +136, respectively. Since day +154 patient has had chronic GVHD of the skin.
We achieved complete remission: normal blood counts, normal account of blasts in bone marrow, full donor's chimerism, and 46,xy.
**Conclusion:** Combined treatment (Decitabine and DLI) showed clinical activity and can be used for treatment of relapsed myelodysplastic syndrome after allogeneic HSCT.

**Keywords:** myelodysplastic syndrome, reduced-intensity conditioning, allogeneic HSCT, relapsed myelodysplastic syndrome, donor lymphocytes infusion, decitabine