

# ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION FOR CML PATIENTS IN THE TKI ERA

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**Introduction:** Tyrosine kinase inhibitor (TKI) therapy has radically altered the treatment strategy for chronic myeloid leukemia (CML). While allogeneic hematopoietic stem cell transplantation (AHSCT) was considered a definitive treatment for patients with CML years ago, the number of ASCTs has decreased with the use of TKIs substantially [1]. Currently, AHSCT is performed in patients who are intolerant or refractory to TKI therapy or when the disease progresses from chronic phase to accelerated or blast phase [2]. Here, we aimed to analyze transplantation outcomes in CML patients in the TKI era.

**Method:** We retrospectively analyzed adults who underwent AHSCT for CML at our institution between 2015 and 2025. Overall survival (OS), progression-free survival (PFS), graft versus host disease (GVHD), graft versus disease free survival (GFS) were examined. **Results:** AHSCT was performed on 27 patients with CML in our center. 70.4% (n:19) of the patients were male. Median age was 37 years (19-58). Median follow-up was 56.6 months (0,8-178,7). All patients except one used at least 2 different TKIs before transplantation. 51.9% (n:14) of the patients' donors were HLA 10/10 match related donor (MRD). 24 (88.9%) patients received stem cells from peripheral blood and ablative conditioning regimen. While 19 (70.4%) of the patients were in the chronic phase, 8 (29.6%) were in the accelerated/blastic phase at transplantation (See Table 1). Transplant-related mortality occurred in 8 patients (29.6%), and half of these patients were in accelerated/blastic phase at transplantation. Median OS has not yet been reached, 5-year OS is 67.7% (Figure1). Six patients (22.2%) relapsed after transplantation, and the 5-year PFS was 72.4% (Figure 2). Acute GVHD developed in 6 (22.2%) patients, chronic GVHD in 13 (48.1%) patients and 3-month aGFS was 75.7% (Figure 3).

**Conclusion:** AHSCT is still a promising treatment option for patients with TKI-resistant/intolerant or accelerated/blastic phase CML. Long OS and PFS results are hopeful.

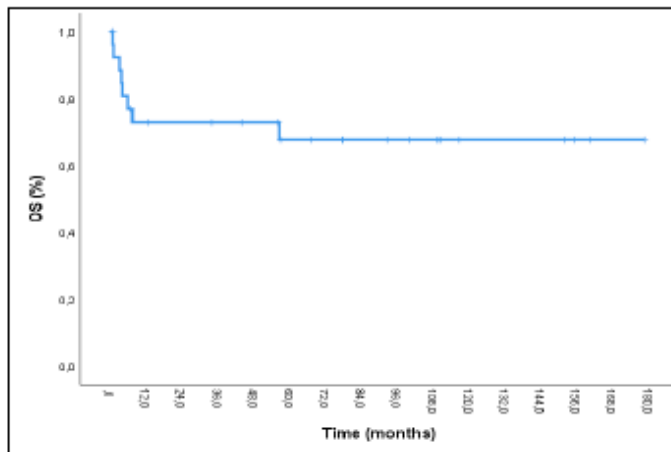
## References

- 1.Saussele, S., et al., Allogeneic hematopoietic stem cell transplantation (allo SCT) for chronic myeloid leukemia in the imatinib era: evaluation of its impact within a subgroup of the randomized German CML Study IV. *Blood*, 2010. 115(10): p. 1880-5.
- 2.Radich, J., When to Consider Allogeneic Transplantation in CML. *Clin Lymphoma Myeloma Leuk*, 2016. 16 Suppl: p. S93-5

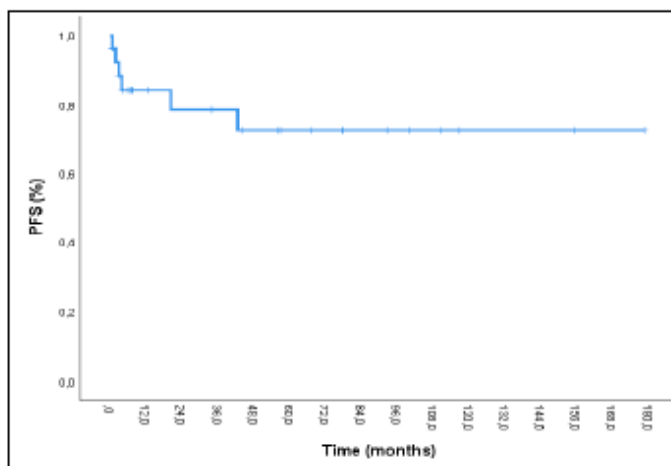
**Table 1: Characteristics of patients**

|                                                           |                           | Total N=27 (%)   |
|-----------------------------------------------------------|---------------------------|------------------|
| <b>Age at transplantation, median, years</b>              |                           |                  |
|                                                           |                           | 37 (19-58)       |
| <b>Follow up, median, months</b>                          |                           |                  |
|                                                           |                           | 56,6 (0,8-178,7) |
| <b>Sex</b>                                                |                           |                  |
|                                                           | Female                    | 8 (29,6)         |
|                                                           | Male                      | 19 (70,4)        |
| <b>Disease status at transplantation</b>                  |                           |                  |
|                                                           | Accelerated/blastic phase | 8 (29,6)         |
|                                                           | Chronic phase             | 19 (70,4)        |
| <b>Number of TKIs used before transplantation, median</b> |                           |                  |
|                                                           |                           | 3 (1-5)          |
| <b>Donor</b>                                              |                           |                  |
|                                                           | MRD                       | 14 (51,9)        |
|                                                           | MUD                       | 4 (14,8)         |
|                                                           | MMUD                      | 5 (18,5)         |
|                                                           | Haplo                     | 3 (11,1)         |
|                                                           | Cord                      | 1 (3,7)          |
| <b>Stem cell</b>                                          |                           |                  |
|                                                           | Peripheral blood          | 24 (88,9)        |
|                                                           | Bone marrow               | 2 (7,4)          |
|                                                           | Cord blood                | 1 (3,7)          |
| <b>Conditioning regimen</b>                               |                           |                  |
|                                                           | MAC                       | 24 (88,9)        |
|                                                           | RIC                       | 3 (11,1)         |

**Figure 1**



**Figure 2**



**Figure 3**

