

Pediatric Hematopoietic Stem Cell Transplant - Experience of an Indian Tertiary Care Center

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Introduction

- Considerable progress has been made in HSCT for pediatric malignant and nonmalignant conditions in terms of:
 - ✓ Type of pediatric diseases successfully treated with HSCT
 - ✓ Use of alternative donor stem-cell sources
 - ✓ New conditioning regimens
 - ✓ Awareness of late effects in pediatric HSCT recipients

- We present our transplant data pertaining to the pediatric HSCT done at our center from Jan 2008 till date

Methods

- Patients aged less than 18 years of age at the time of HSCT were defined as pediatric population and included in the analysis
- All the patients irrespective of diagnosis were included in the analysis

Conditioning regimen

- Variety of conditioning regimen were used such as: depending on disease and patient specific issues
 1. BuCy (Busulfan, cyclophosphamide)
 2. Flu-Mel (fludarabine, melphalan)
 3. Bu-Flu (busulphan, fludarabine)
 4. TTF (treosulphan, thiotepa and fludarabine)
 5. CyATG (cyclophosphamide, ATG)

Facility

- All patients underwent transplant in High efficiency particle air filtration (HEPA) unit equipped with positive pressure ventilation (PPV)
- Transplant unit and nursing team are dedicated - not used for other purpose
- Many of the nursing staff and doctors are working in unit for over 5-7 years

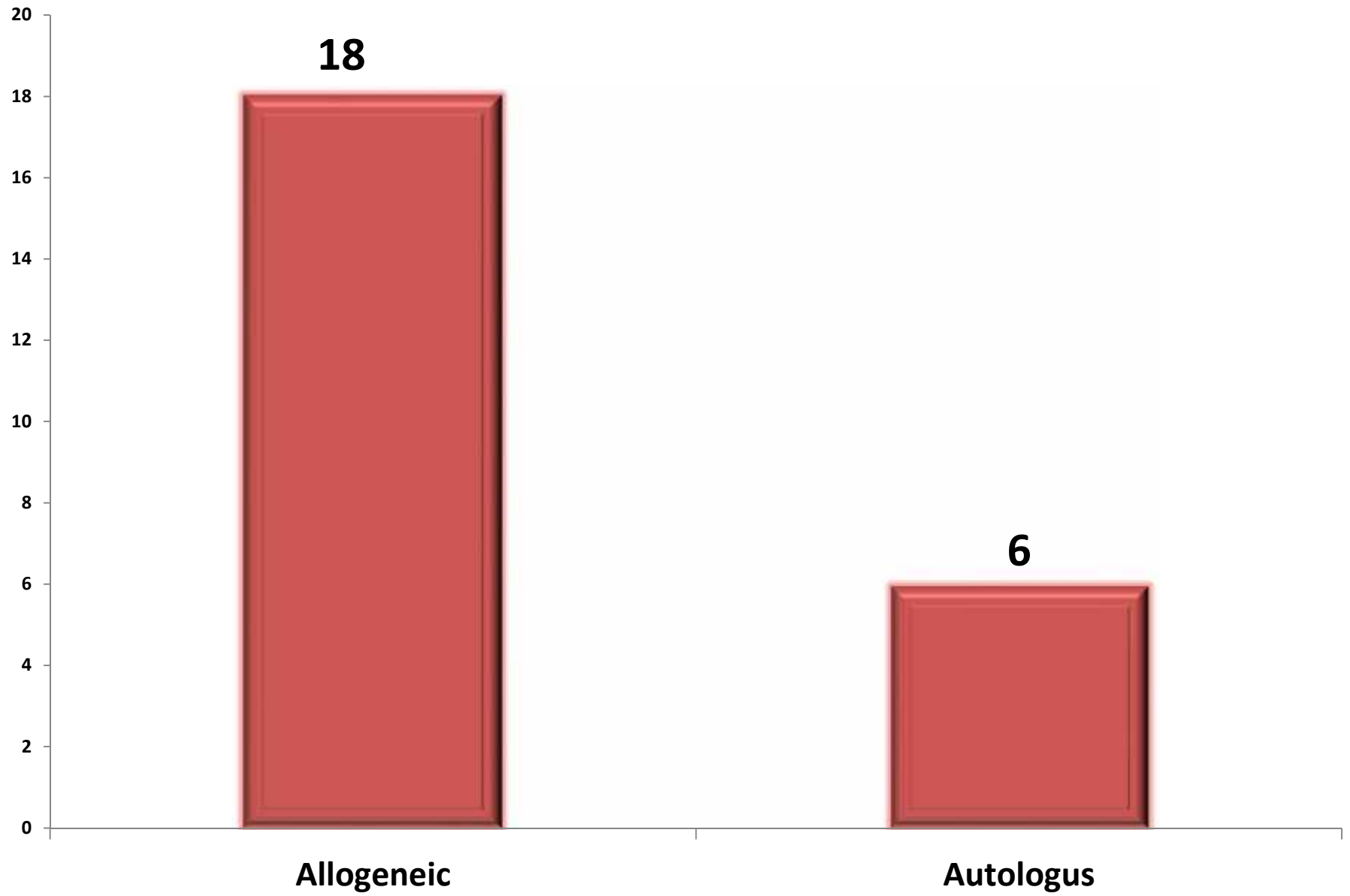
Stem Cell Source

- All of the patients received filgrastim (GSCF) mobilized peripheral blood stem cell (PBSC) graft, except one, for whom bone marrow stem cells were collected

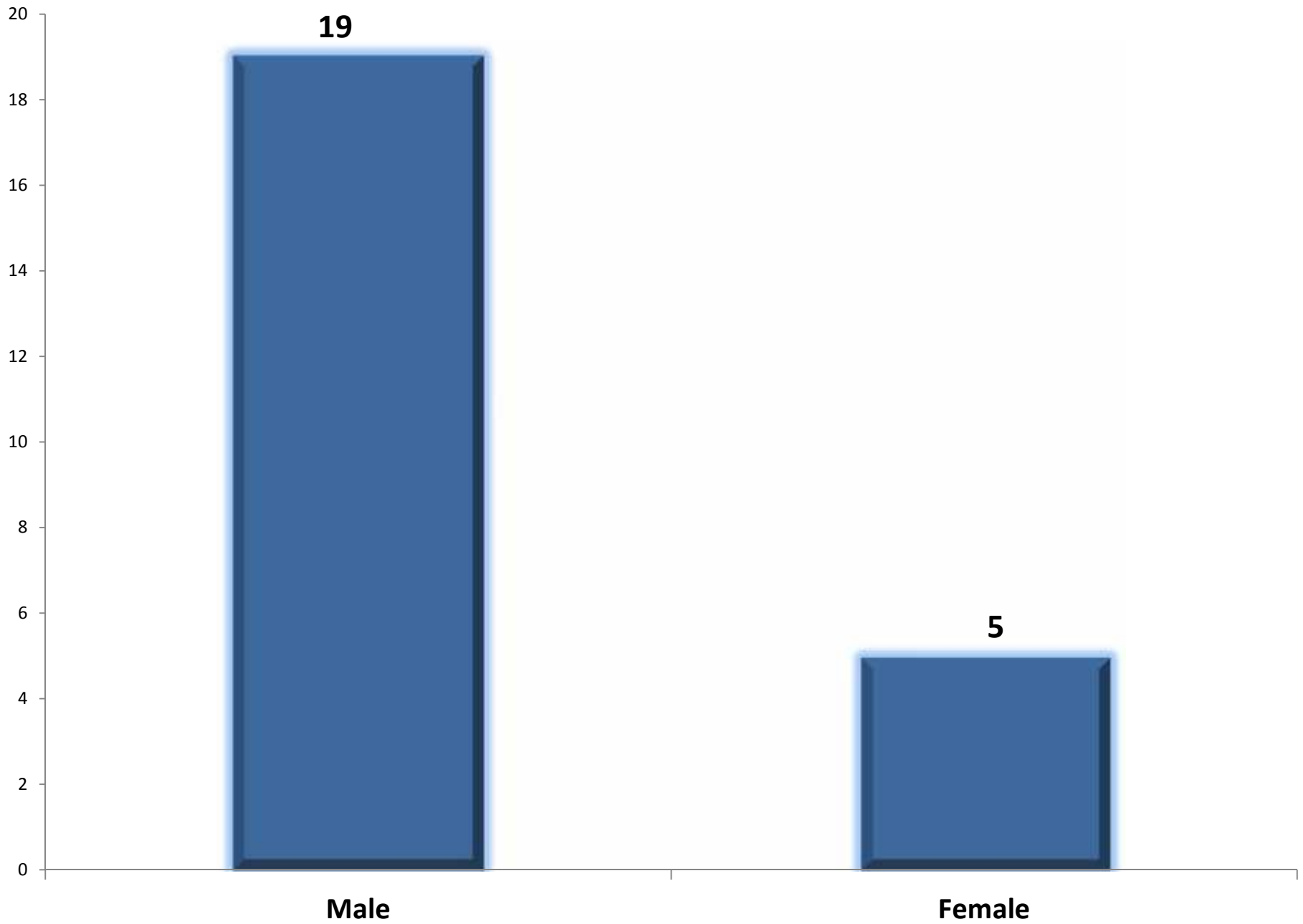
Results

- Data of patients with both, malignant and non-malignant hematological illnesses was analyzed in terms of
 1. rates of Engraftment
 2. Day 100 survival
 3. Disease free survival.

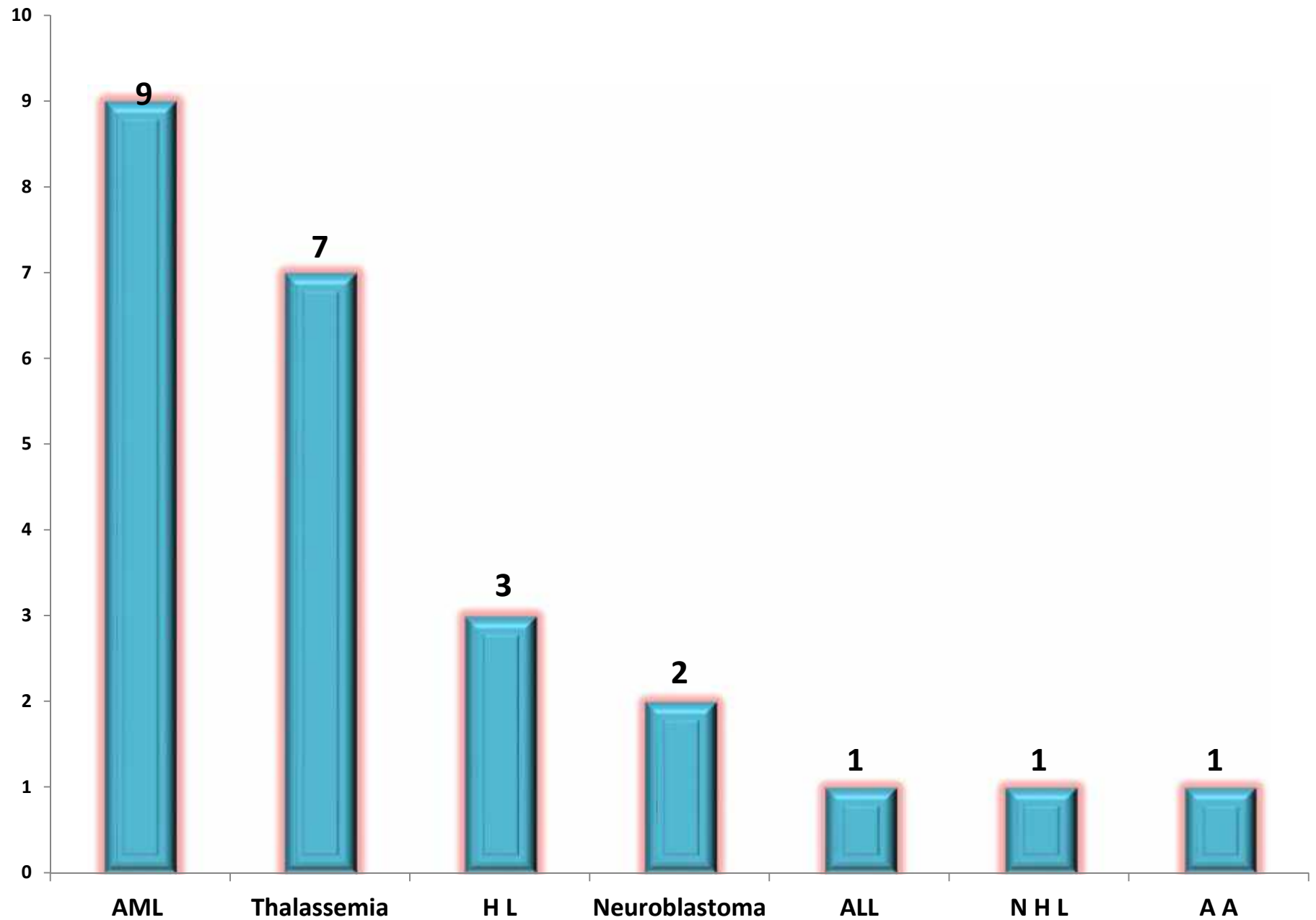
Allogeneic & Autologus Transplant - 24



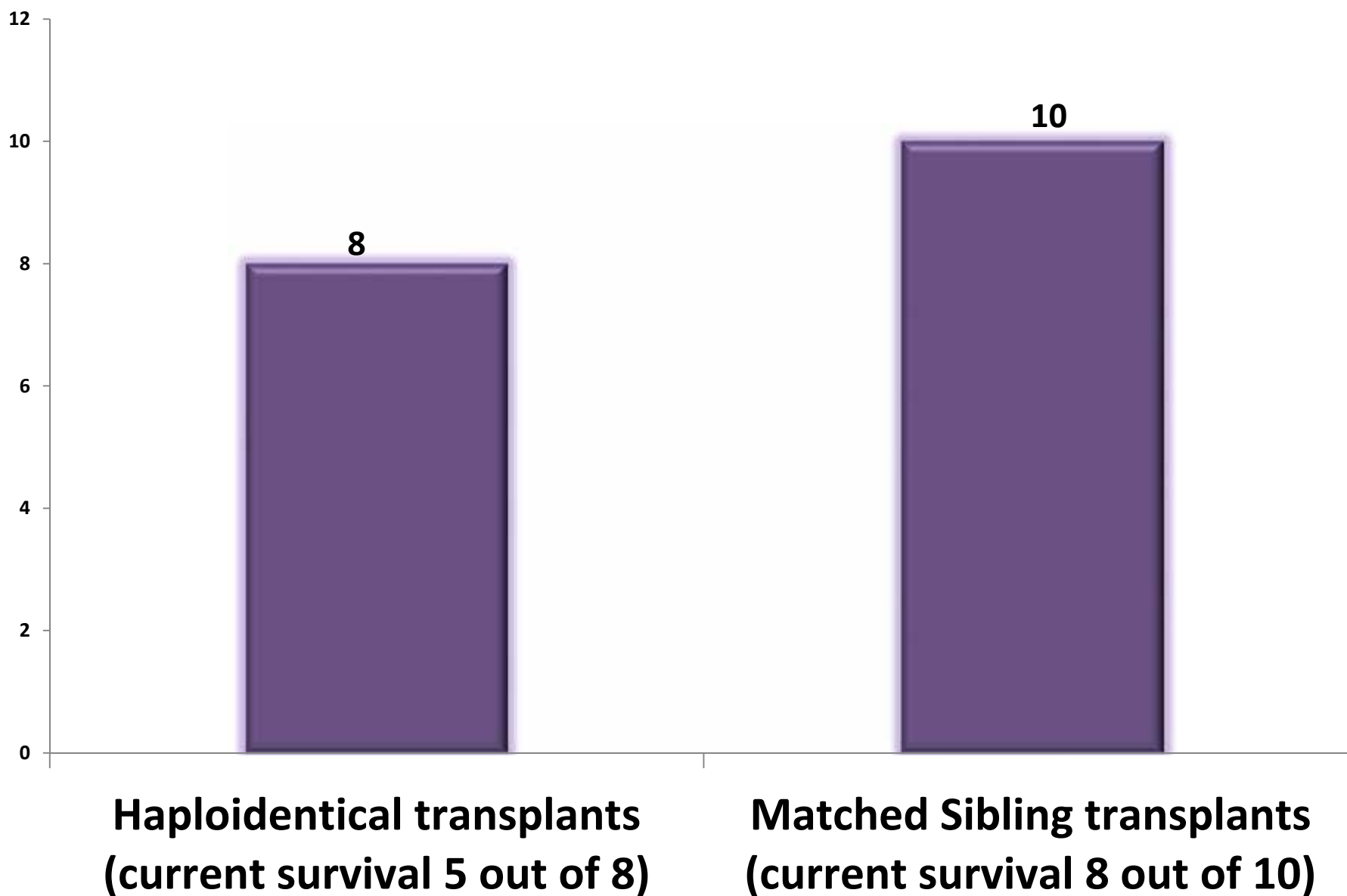
Male & Female Transplant Number - 24



Disease wise Distribution of patients



Haploidentical & Matched Sibling Transplants



Survival Data

Disease	Engraftment	Day 100 Survival	Long Term Survival
AML	67%	83%	56%
Thalassemia	100%	100%	86%
ALL	100%	100%	100%
H L	100%	100%	100%
N H L	100%	100%	100%
A A	100%	100%	100%
Neuroblastoma	100%	100%	50%

Conclusions

- HSCT in pediatric population is an important treatment modality especially for malignancies such as Acute Myeloid Leukemia, Acute Lymphoid Leukemia, Neuroblastoma.
- It is also an important treatment for Serious Non malignant diseases like Thalassemia Major, Sickle cell Anemia, Aplastic anemia and others.
- Children tolerate transplant better than adults, and have significantly better results, including lower mortality, low graft versus host disease.

- For non caucasians, finding a match in unrelated donor registries is very uncommon.
- Haplo-identical transplant is an attractive strategy for patients lacking fully matched donor, especially for high risk patients, in urgent need for transplant, with results comparable to matched unrelated donor transplant.

- Results from our center are comparable to those from other centers where pediatric transplants are performed regularly.
- For diseases such as thalassemia, transplants should be considered early in the course of disease given the better results.
- Same is applicable to Sickle Cell Disease.

Thank you

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