

Acknowledgements



F. Mauro



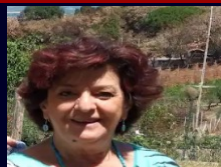
A. Bianchi



A. P. Iori



A. Picardi



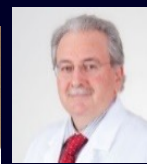
L. De Felice



B. Mariotti



L. Cudillo



G. Avvisati



M. Andreani



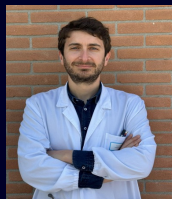
S. Micciché



R. Cerretti



G. De Angelis



E. Santinelli



Salvatore Virginio
Carla Loredana
Ester



E. Perfetti
M. Gasparrini



M. Andreoni



L. Sarmati



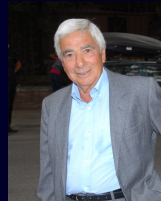
M.C. Tirindelli



R. Ricci



S. Soave



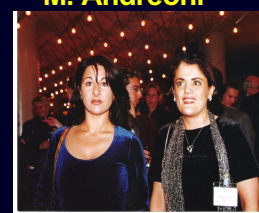
Massimo Ditri



Screnci Iori Livesi



P. Berneschi



Francesca-Ester



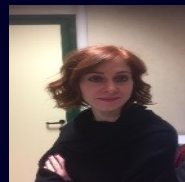
Carmine



G. Treglia



M. Passeri



I. Mangione



A. Bruno



Prof ed Ester



Angelica De Vita



C. Papa



F. Bottani



Massimo
Francesca
Silvia

WILLIAM ARCESE

No Disclosure to Declare

Company name	Research support	Employee	Consultant	Stockholder	Speakers bureau	Advisory board	Other

XX Congresso della Società GITMO

RIUNIONE NAZIONALE GITMO

ROMA, ERGIFE PALACE HOTEL, 7-8 MAGGIO 2026

Evoluzione dell'Algoritmo nella Scelta del Donatore Allogeneico

WILLIAM ARCESE

Policlinico Universitario Campus Bio-Medico, Roma

Review

Allogeneic Hematopoietic Cell Donor Selection: Contemporary Guidelines from the NMDP/CIBMTR

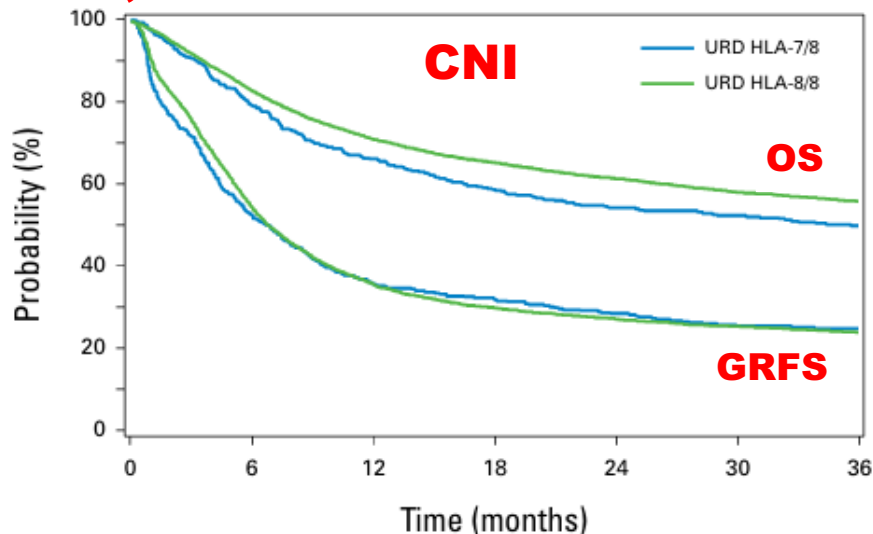
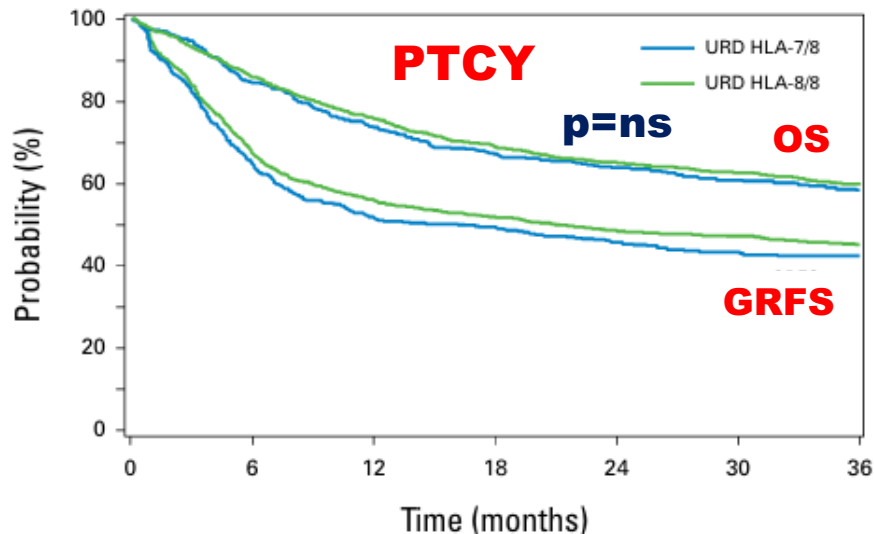
Antonio M. Jimenez Jimenez, Stephen R. Spellman, Ioannis Politikos, Shannon R. McCurdy, Steven M. Devine, Monzr M. AlMalki, Yung-Tsi Bolon, Stephanie J.Lee, Jason Dehn, Joseph Pidala, Martin Maiers, Medhat Askar, Craig Malmberg, Jeffery J. Auletta, Heather Stefanski, Larisa Broglie, Muna Qayed, Mitchell Horwitz, Jennifer S.Wilder, Mahasweta Gooptu, Rohtesh S.Mehta, Marcelo Fernandez-Vi~na, Bronwen E. Shaw, Brian C. Shaffer.

Transplantation and Cellular Therapy, 31(2025), 973-988.

Post-Transplant Cyclophosphamide–Based Graft-Versus-Host Disease Prophylaxis Attenuates Disparity in Outcomes Between Use of Matched or Mismatched Unrelated Donors

Shaffer BC et al. JCO, 2024

Total Patients n=10,025



Number at risk				
OS URD 8/8	1681	1257	838	436
OS URD 7/8	613	439	307	175
GRFS URD 8/8	1650	910	613	313
GRFS URD 7/8	606	300	203	116

Number at risk				
OS URD 8/8	7272	5133	3794	2525
OS URD 7/8	459	297	221	151
GRFS URD 8/8	7136	2638	1705	1054
GRFS URD 7/8	453	162	115	77

Donor Selection for Allogeneic HSC Transplant

VARIABLES

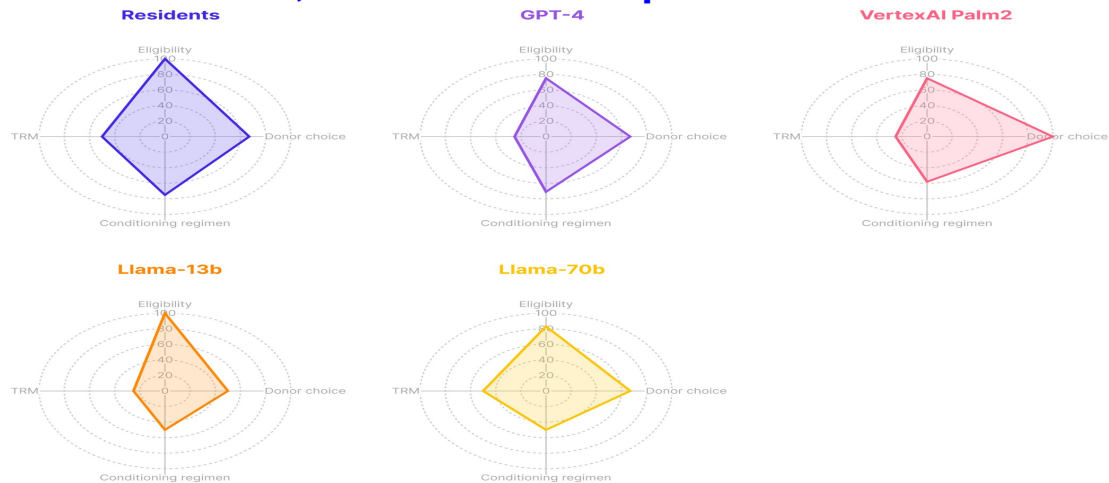
IDEAL DONOR

- | | |
|--|---|
| ■ Grade of HLA Matching | HLA Id. Sib > MUD (HLA 10/10) > MMUD (HLA 9/10 > 8/10) > Haplo > CB |
| ■ HLA Permissiveness: | HLA-C 03:03/03:04; DQB1; DPB1 |
| ■ Age | Young \leq 30 yrs |
| ■ Sex | Male |
| ■ D/R CMV status | D-neg to R-neg
D-pos to R-pos |
| ■ Anti-HLA Donor Specific Antibodies (DSA) | Negative |
| ■ ABO Blood group | Compatible |
| ■ Cell donation preference: BM/PB/None | None |
| ■ KIR alloreactivity in Haplo | Positive |

Evaluating the performance of Large Language Models in haematopoietic stem cell transplantation decision-making

Ivan Civettini et al., Br J Haematol. 2024; 204(4):1523–1528.

Large Language Models (LLMs) are a type of Artificial Intelligence (AI) that employs deep learning techniques and big datasets to understand, summarize and predict new content.



Our triple-blind methodology revealed both their promise and limitations in deciphering complex haematological clinical scenarios. In conclusion, our research underscores the indispensable value of human expertise in HSCT decisions.....

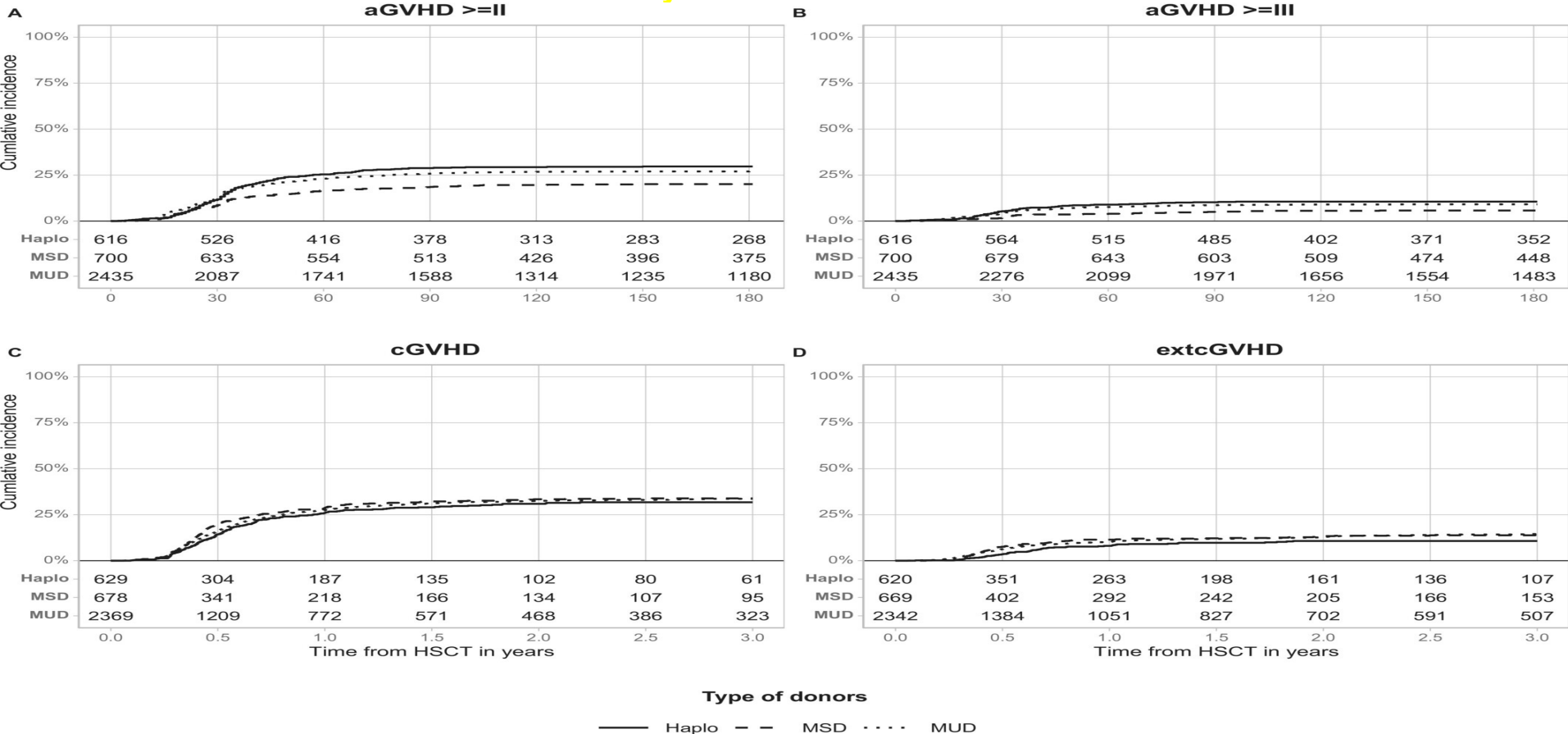
**Secondary AML in 1^o Complete Remission
Total patients
3862**

MSD = 715 vs Haplo = 643 vs MUD = 2504

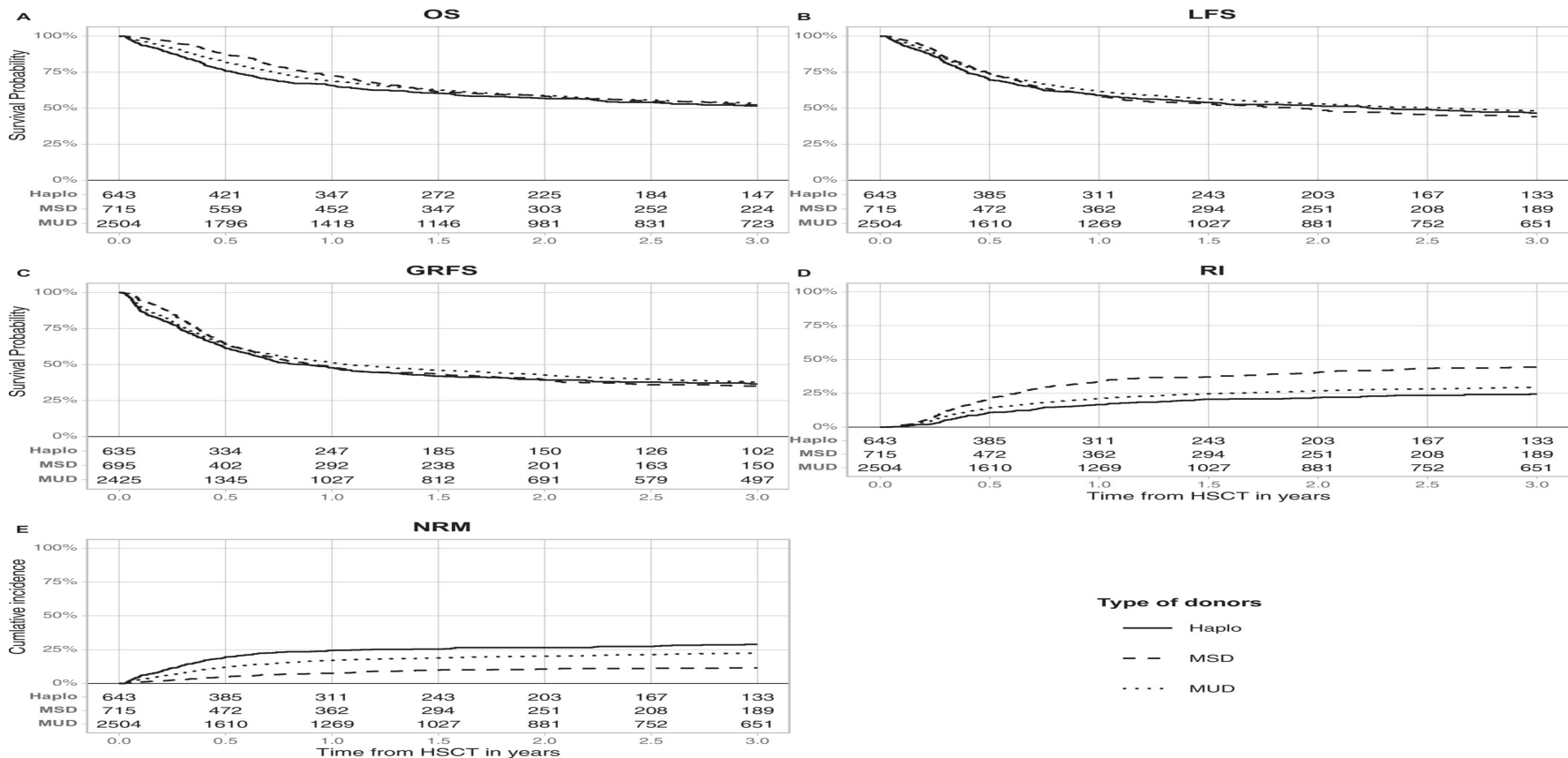
Transplanted between 2010 and 2022

with a median follow-up of 3.3 years

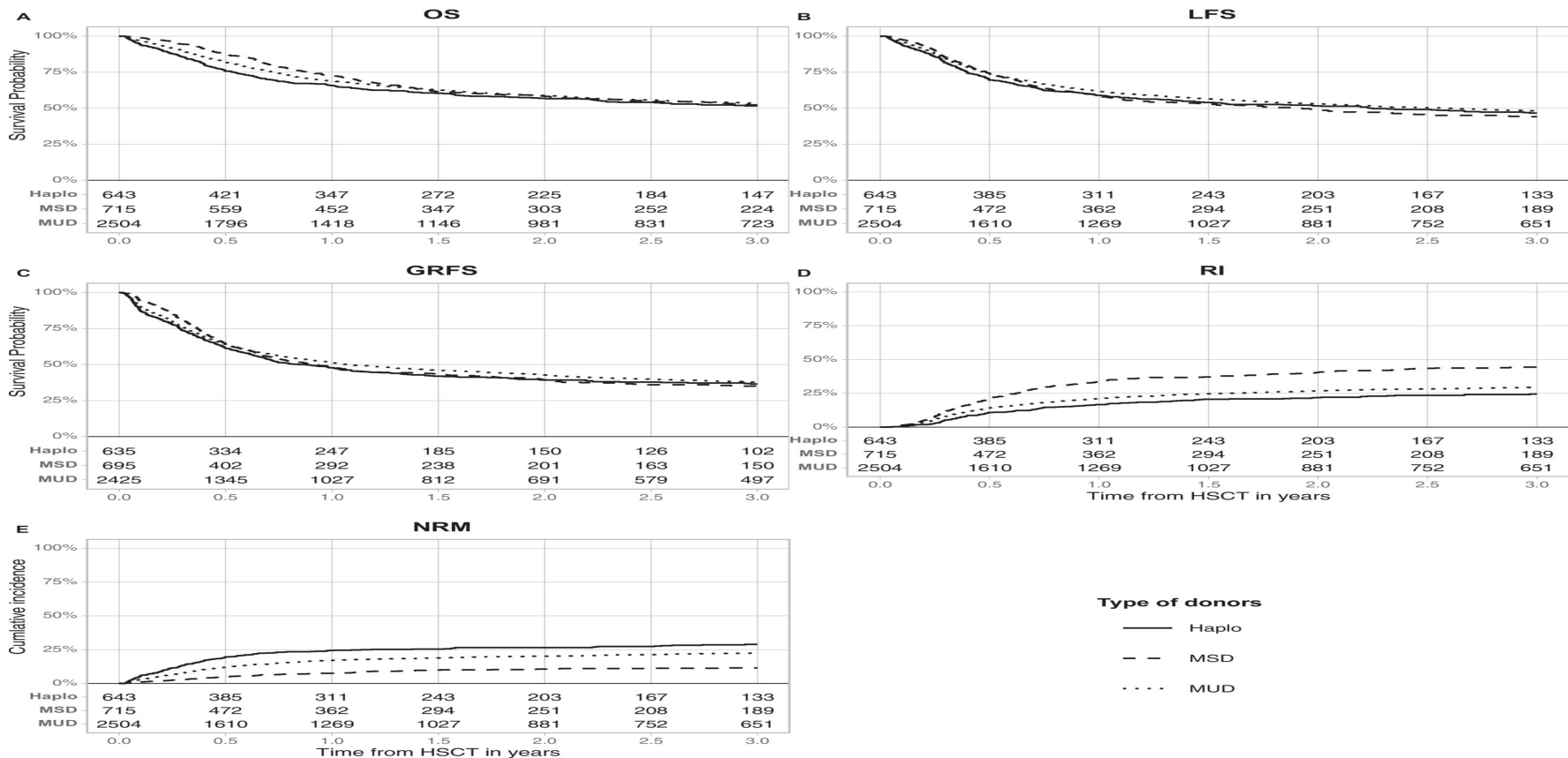
Non-T-Depleted Haploidentical Transplantation Compared to Allogeneic Transplantation From Matched Siblings or Unrelated Donors in Patients With Secondary AML in First Complete Remission: A Study From the ALWP/EBMT



Non-T-Depleted Haploidentical Transplantation Compared to Allogeneic Transplantation From Matched Siblings or Unrelated Donors in Patients With Secondary AML in First Complete Remission: A Study From the ALWP/EBMT



Non-T-Depleted Haploidentical Transplantation Compared to Allogeneic Transplantation From Matched Siblings or Unrelated Donors in Patients With Secondary AML in First Complete Remission: A Study From the ALWP/EBMT



Non-T-Depleted Haploidentical Transplantation Compared to Allogeneic Transplantation From Matched Siblings or Unrelated Donors in Patients With Secondary AML in First Complete Remission:

A Study From the ALWP/EBMT

- **Importance of individualized donor selection in HSCT for sAML.**
- **In the absence of an MSD, both Haplo and MUD are viable options.**
- **Future prospective studies are needed to validate these findings.**

Such studies should integrate novel therapies, MRD assessment, and standardized transplant protocols to enhance our understanding of how donor type, disease biology and post-transplant interventions interact to influence outcomes in sAML.

“Donor Search Prognosis Score”

based on HLA allele Frequencies and Ethnicity
predicts the likelihood of successfully identifying
an 8/8 MUD at HLA-A, -B, -C, and -DR

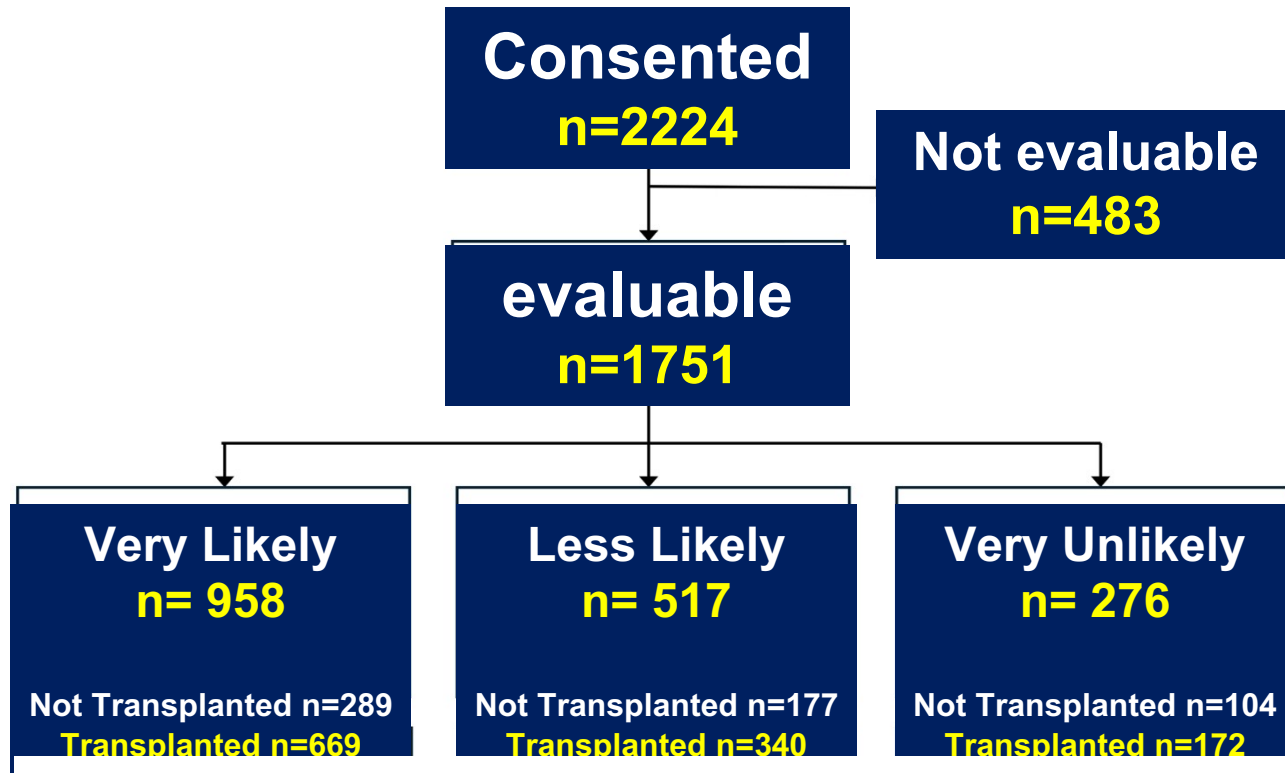
Likelihood of Finding a MUD n=8816 patients

Very Likely
>90%

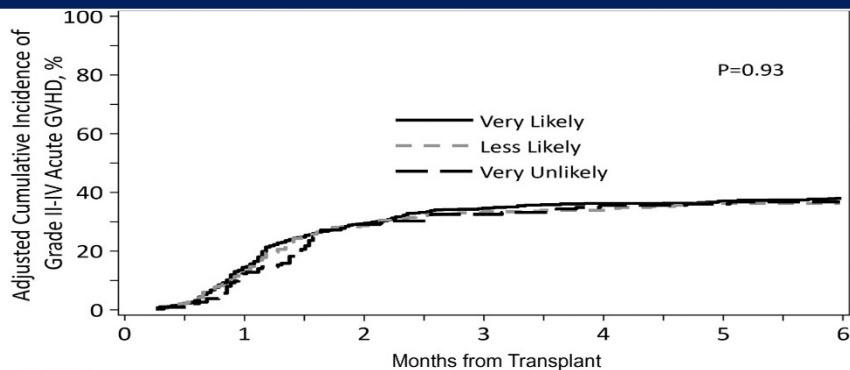
Less Likely
~ 26%

Very Unlikely
<10%

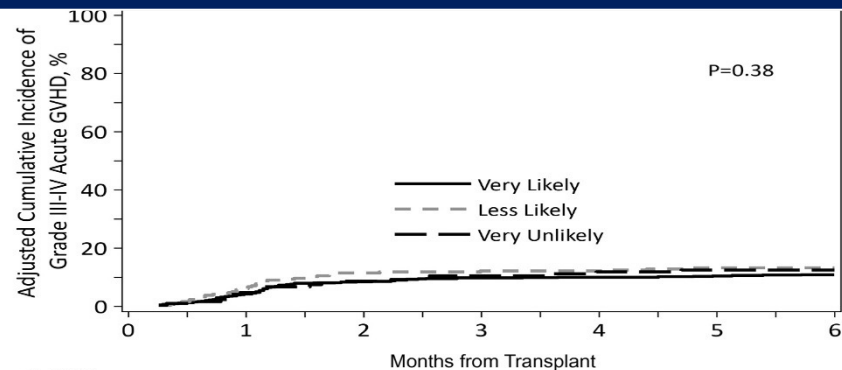
Primary Results from BMT CTN 1702 - Clinical Transplant-related Long-term Outcomes of Alternative Donor Allogeneic Transplantation (CTRL-ALT-D), Stefanie J Lee et al, CIBMTR



Primary Results from BMT CTN 1702 - Clinical Transplant-related Long-term Outcomes of Alternative Donor Allogeneic Transplantation (CTRL-ALT-D), Stefanie J Lee et al, CIBMTR

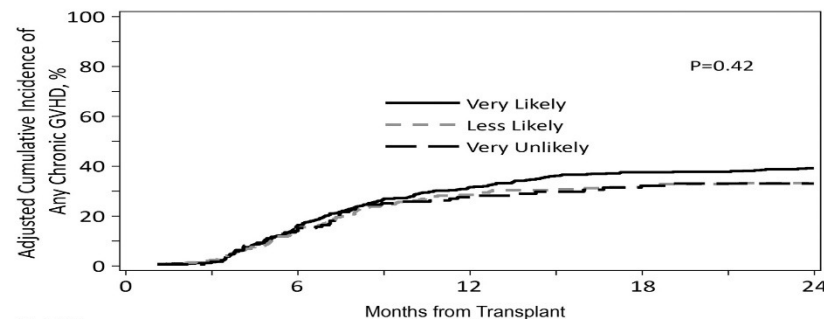


N at Risk		0	1	2	3	4	5	6
Very Likely	665	563	443	400	383	371	351	
Less Likely	335	287	222	206	193	179	171	
Very Unlikely	170	147	114	100	94	89	81	



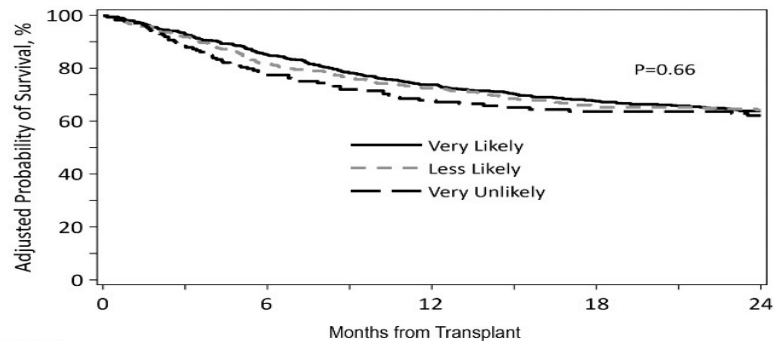
N at Risk		0	1	2	3	4	5	6
Very Likely	662	624	579	560	548	533	511	
Less Likely	334	308	277	273	260	249	238	
Very Unlikely	170	160	147	135	132	126	119	

g)

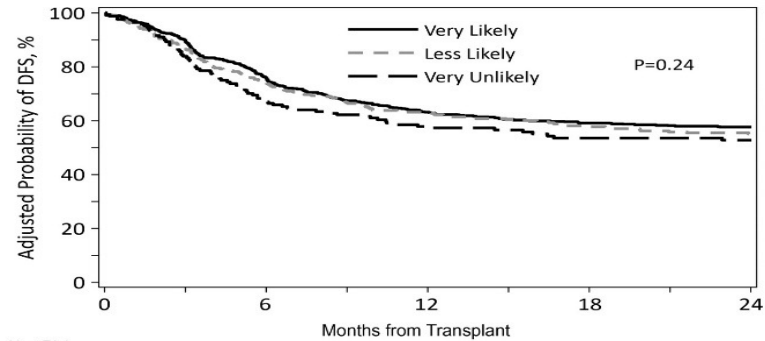


N at Risk		0	6	12	18	24
Very Likely	653	452	284	199	156	
Less Likely	334	224	153	104	74	
Very Unlikely	170	109	70	48	40	

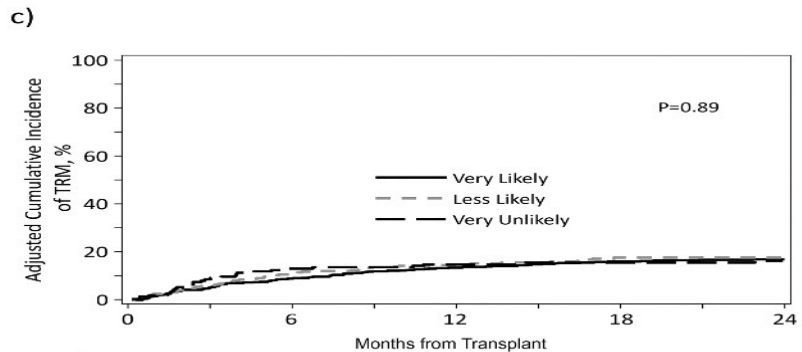
Primary Results from BMT CTN 1702 - Clinical Transplant-related Long-term Outcomes of Alternative Donor Allogeneic Transplantation (CTRL-ALT-D), Stefanie J Lee et al, CIBMTR



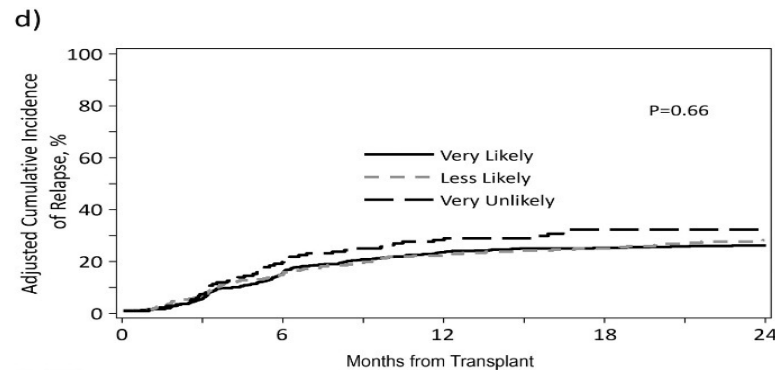
N at Risk	0	6	12	18	24
Very Likely	668	564	481	391	303
Less Likely	340	278	244	182	126
Very Unlikely	170	130	112	86	70



N at Risk	0	6	12	18	24
Very Likely	647	483	393	328	266
Less Likely	328	245	208	158	104
Very Unlikely	167	112	95	71	61



N at Risk	0	6	12	18	24
Very Likely	647	485	394	329	274
Less Likely	328	246	209	159	106
Very Unlikely	167	113	96	72	62



N at Risk	0	6	12	18	24
Very Likely	647	485	394	329	274
Less Likely	328	246	209	159	106
Very Unlikely	167	113	96	72	62

Primary Results from BMT CTN 1702 - Clinical Transplant-related Long-term Outcomes of Alternative Donor Allogeneic Transplantation (CTRL-ALT-D), Stefanie J Lee et al, CIBMTR

Multivariate Uadjusted Analysis

	Very Likely	Less Likely	Very Unlikely
Relapse	1.0 overall P=0.66	1.15 (0.87–1.52) P=0.32	1.40 (1.01–1.96) P=0.047
Treatment-related mortality	1.0 overall P=0.89	1.09 (0.77–1.54) P=0.64	1.06 (0.69–1.64) P=0.78
Disease-free survival	1.0 overall P=0.24	1.11 (0.90–1.38) P=0.33	1.25 (0.96–1.62) P=0.10
Overall survival	1.0 overall P=0.66	1.03 (0.82–1.31) P=0.78	1.15 (0.86–1.52) P=0.36
Grade II-IV acute GVHD	1.0 overall P=0.93	0.97 (0.77–1.22) P=0.80	0.95 (0.71–1.27) P=0.71
Grade III-IV acute GVHD	1.0 overall P=0.38	1.33 (0.89–1.98) P=0.16	1.13 (0.67–1.91) P=0.65
Any chronic GVHD	1.0 overall P=0.42	0.85 (0.66–1.09) P=0.19	0.92 (0.67–1.26) P=0.59

Primary Results from BMT CTN 1702 - Clinical Transplant-related Long-term Outcomes of Alternative Donor Allogeneic Transplantation (CTRL-ALT-D), Stefanie J Lee et al, CIBMTR

Conclusions

- **Survival and all other major transplant outcomes did not differ between patients Very Likely and those Very Unlikely to find an 8/8 MUD, supporting the donor search strategy used in this study.**
- **Patients Very Unlikely to have an 8/8 MUD should be directed to alternative donors without a prolonged search for a MUD.**

Key Points in the Patient Management

- **Candidacy to Transplant**
- **Eligibility to Transplant**
- **Intention to Transplant**
- **Time to Transplant**

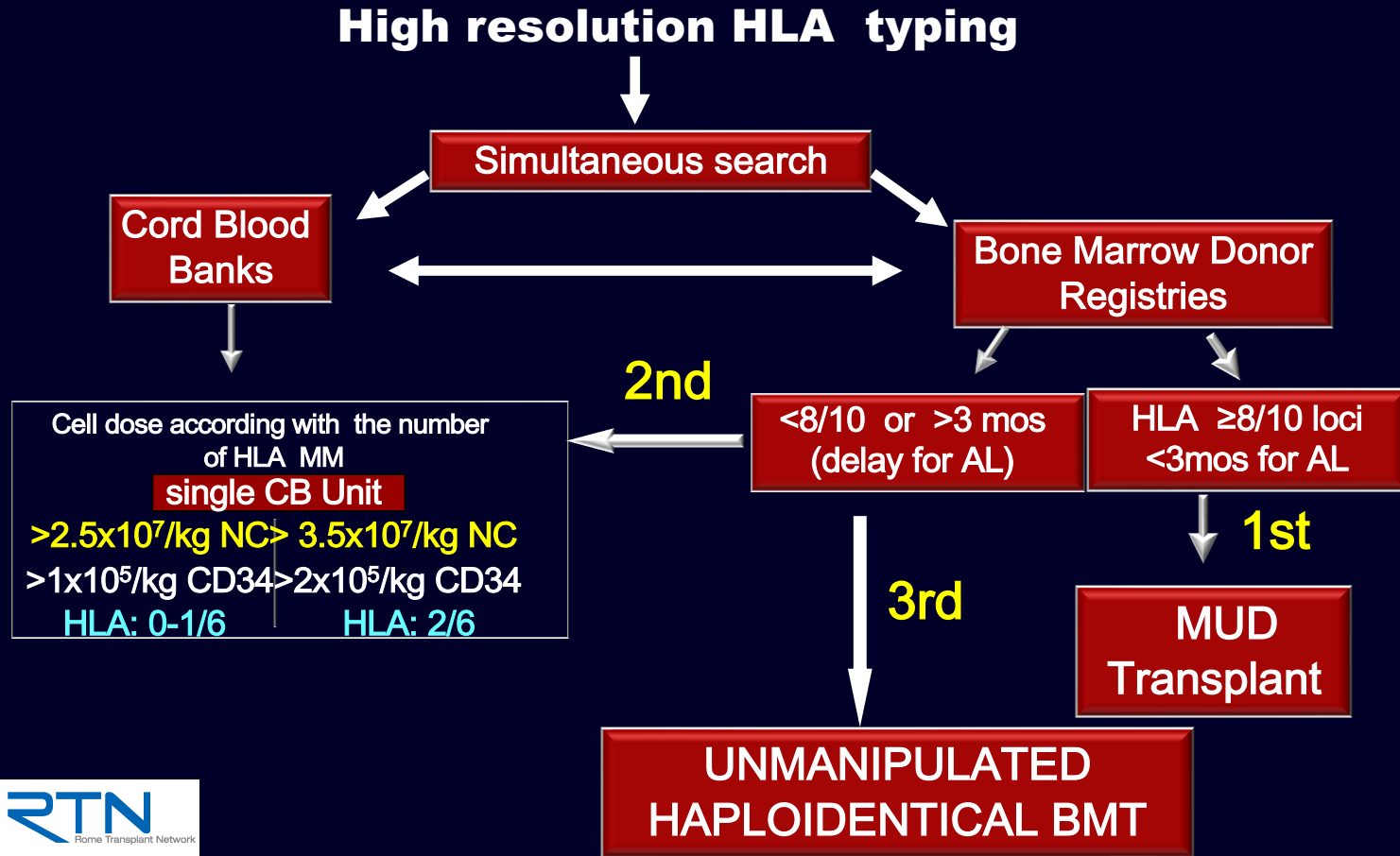


Allogeneic Transplant Policy

AIM

Identification of a suitable donor for the majority of eligible patients in order to perform an allogeneic transplant in adequate timing

Strategy for alternative stem cell donor search in adults with malignant disorders



Strategy and Policy of RTN for Allogeneic Transplantation

Summary

Patient Selection	Age \geq 16 years < 70 years
Hierarchy of donor source	1st HLA Id. Sib. 2nd MUD 3rd CB 4th Haplo Transplant < 3 months for high-risk patients
Conditioning Regimen	TBF-MAC : \leq 55 yrs and a SI \leq 2 TBF-RIC : >55 yrs or \leq 55 yrs with a SI >2
GVHD Prophylaxis	According to the donor source
Antinfectious Policy	Identical
Supportive Care	Identical
Transfusion Policy	Identical

Identical Conditioning Regimen: TBF Protocol

Myeloablative
≤55 yrs with a Sorrow Index <2

MAC →

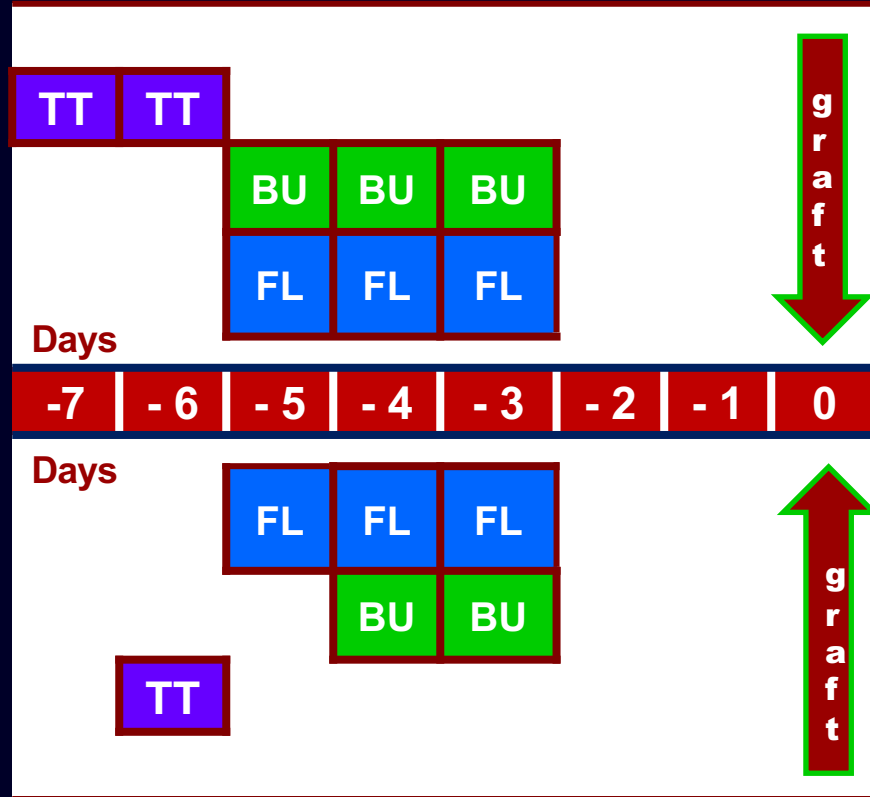
TT -Thiotepa 5 mg/kg

BU -Busilvex 3.2 mg/kg i.v.

FL -Fludarabine 50 mg/m²

RIC →

Reduced Intensity
>55 yrs or ≤ 55 yrs with
a Sorrow Index >2

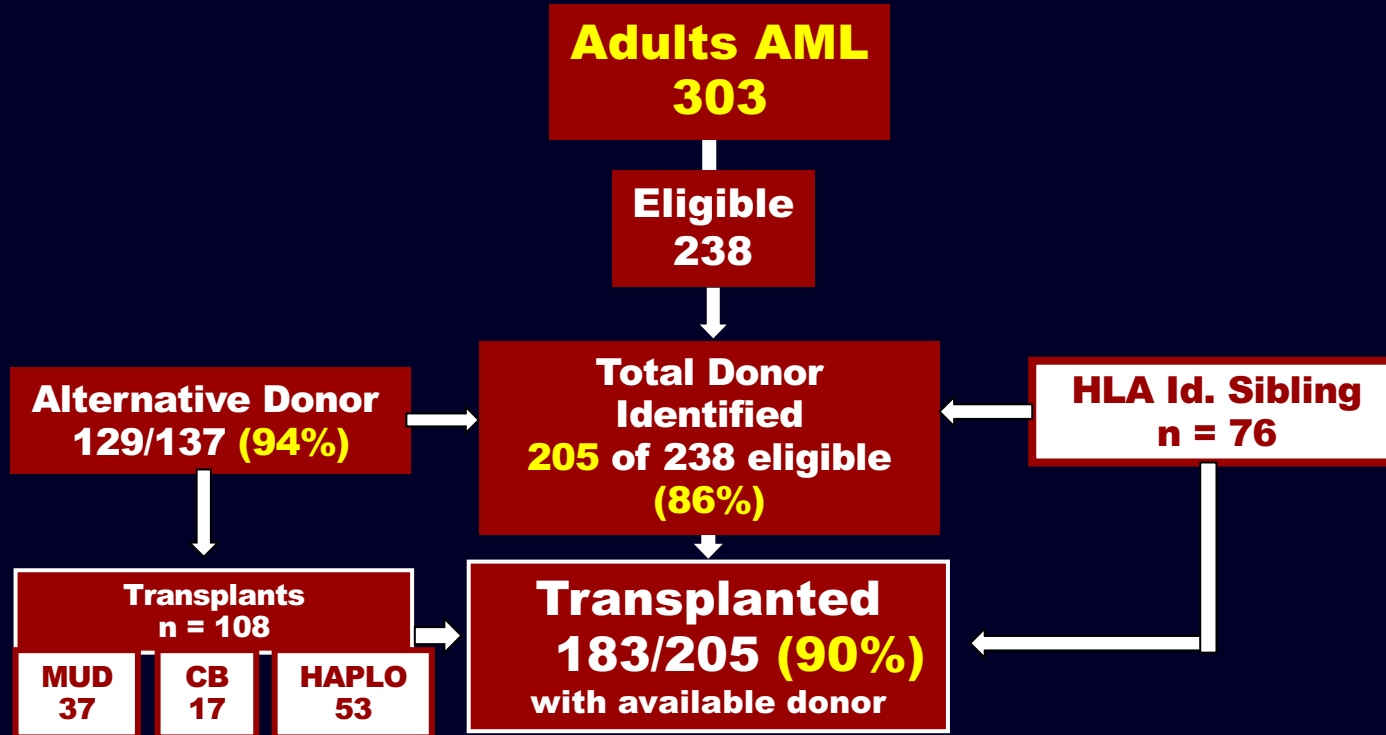


GVHD Prophylaxis

	Drugs	Dosage	days
SIBLING	Cyclosporine	1.5 mg/Kg i.v.	-7 to -2
		3 mg/Kg i.v.	-1 to +21
		6 mg/Kg os	+22 to +365
	Methotrexate	15 mg/m ² i.v.	+1
		10 mg/m ² i.v.	+3, +6,+11

ALGORITHM OF ALLOGENEIC TRANSPLANT IN AML

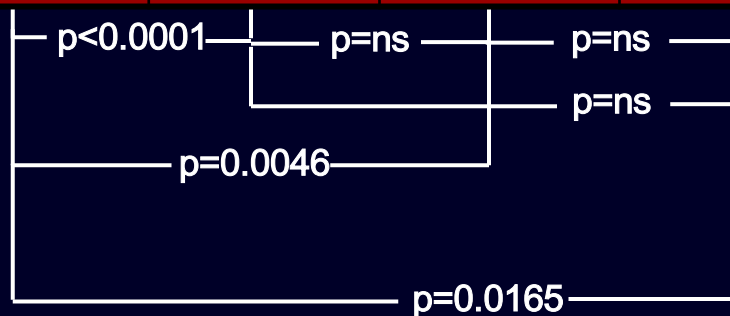
Candidates to HSCT 2006-2014
Total n=1037 - Adults n=747 - Adults AML n=303



Allogeneic Transplants in Adults

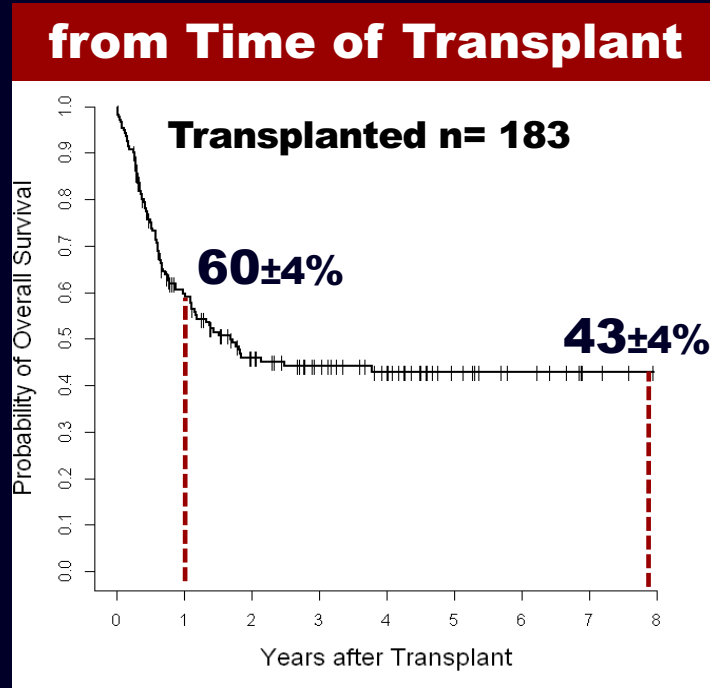
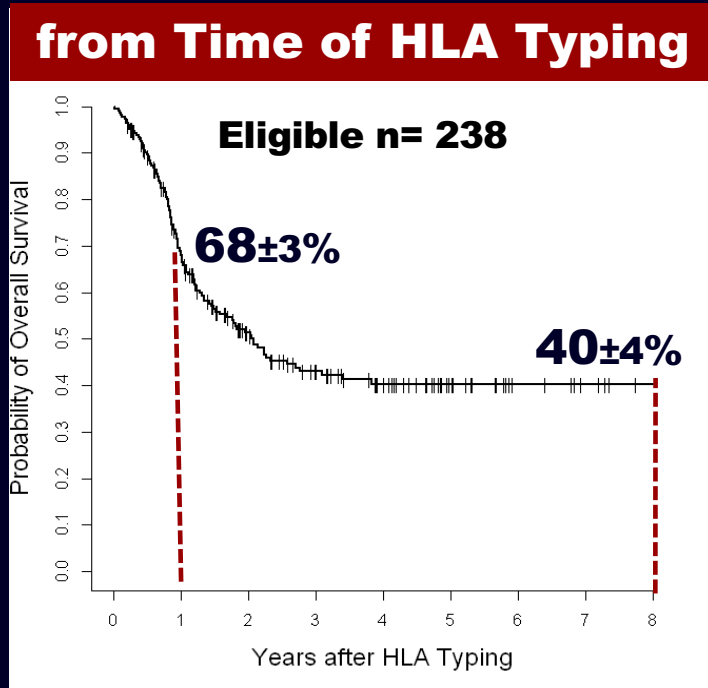
Median Days from HLA Typing to Transplant

Ident.Sib.	MUD	CB	Haplo
119 (14-985)	175 (101-1122)	169 (26-530)	185 (9-827)



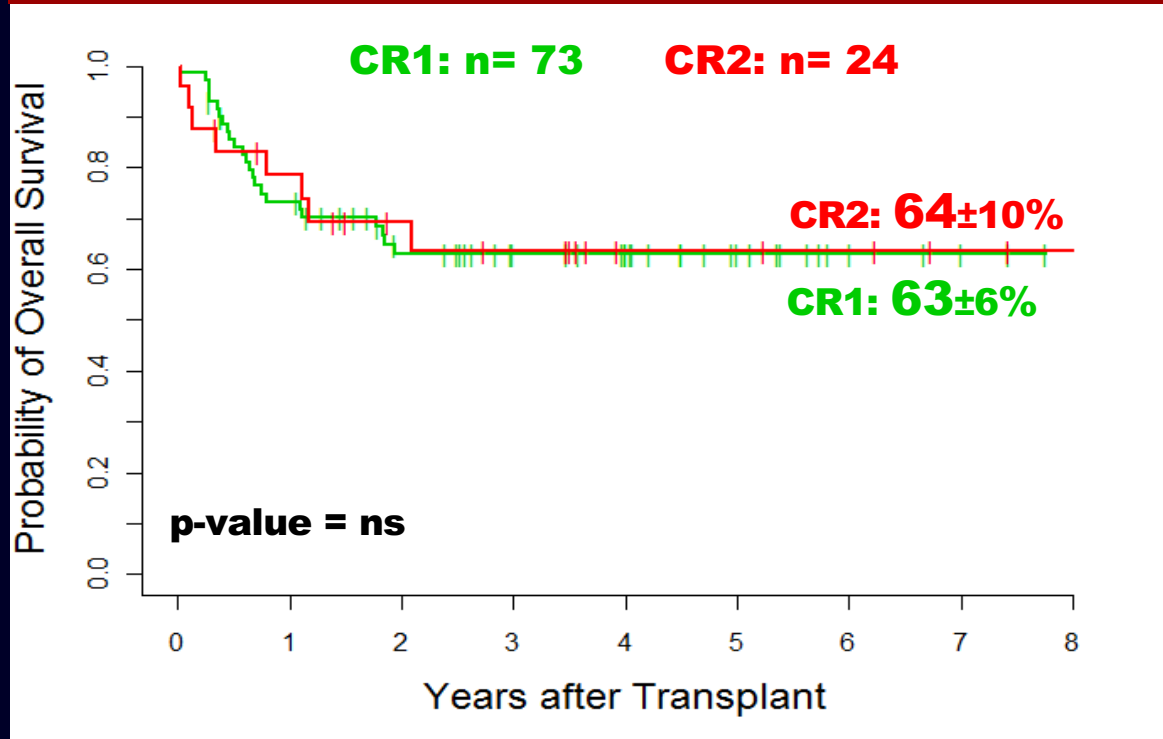
Allogeneic Transplants in Acute Myeloid Leukemia

Overall Survival by Intention to Transplant and by Transplant



Early Stage and MAC Regimen

Overall Survival by Disease Status

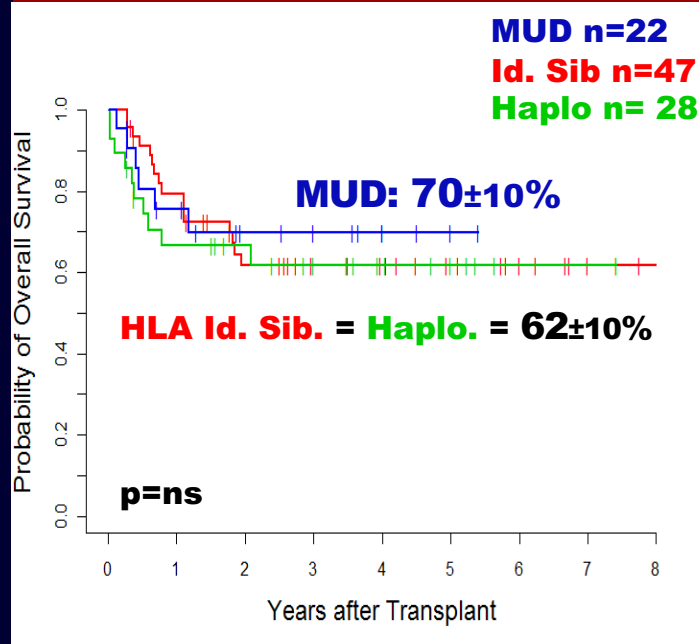


Allogeneic Transplants in Acute Myeloid Leukemia

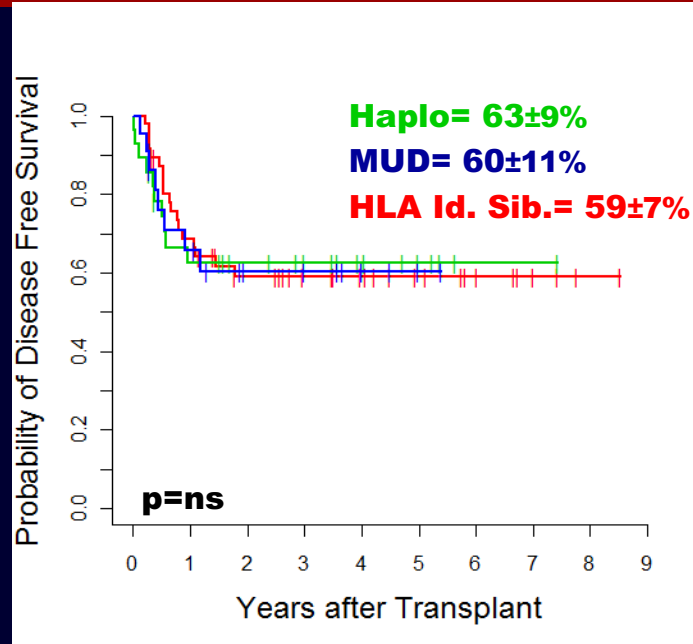
Early Stage AML and MAC Regimen

SURVIVAL by Transplant Donor

OVERALL



Disease Free



Analysis restricted to **97** patients transplanted in **Early Stage (1st and 2nd CR)** and prepared with an identical Myeloablative Conditioning Regimen

The following variables were considered:

- **Patient age**
- **Donor age**
- **Donor/Recipient combinations by:**
 - **Age**
 - **Sex**
 - **CMV status**

Allogeneic Transplants in Acute Myeloid Leukemia

Early Stage AML and MAC Regimen

Median Patient Age n=97		
Sibling n=47	MUD n=22	Haplo n=28
45 yrs	42 yrs	41 yrs
16-59	20-53	18-54
p=ns		

median 43 yrs (range 16-59)

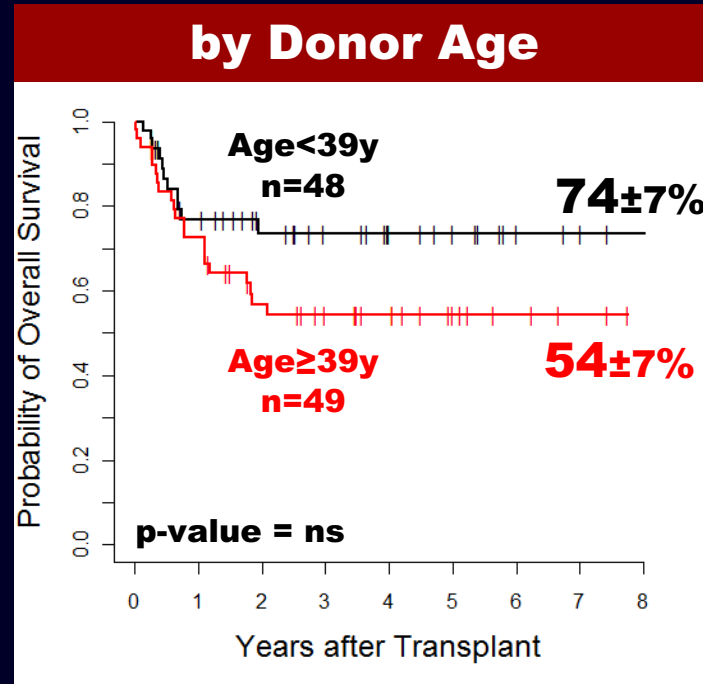
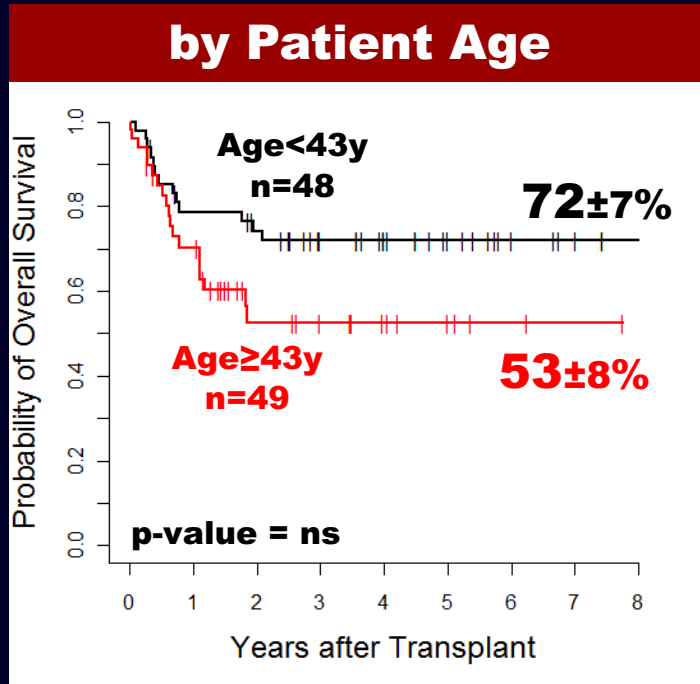
Median Donor Age n=97		
Sibling n=47	MUD n=22	Haplo n=28
42	29	44
15-65	18-61	18-70
p=0.0001 (Sibling vs MUD), p=0.006 (MUD vs Haplo)		

median 39 yrs (range 18-70)

Allogeneic Transplants in Acute Myeloid Leukemia

Early Stage AML and MAC Regimen

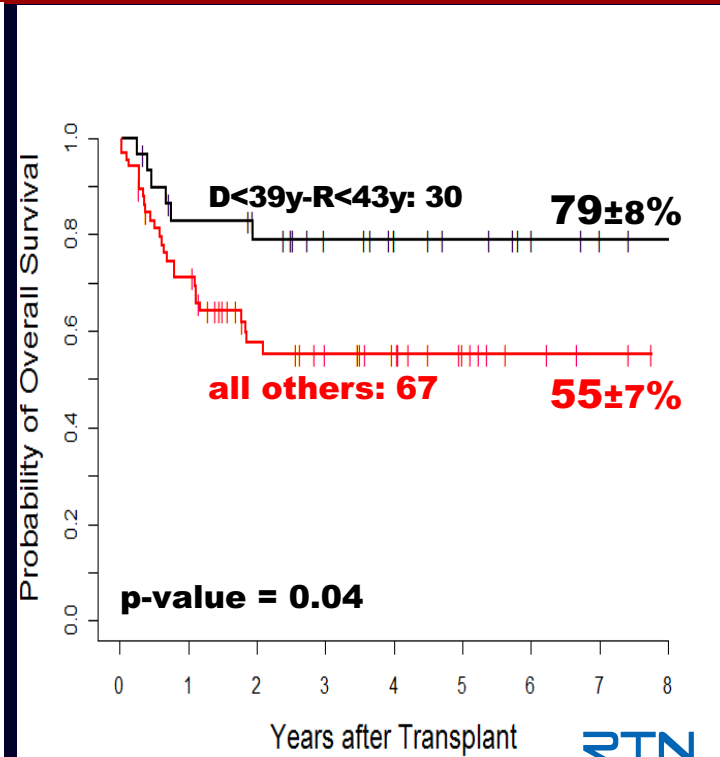
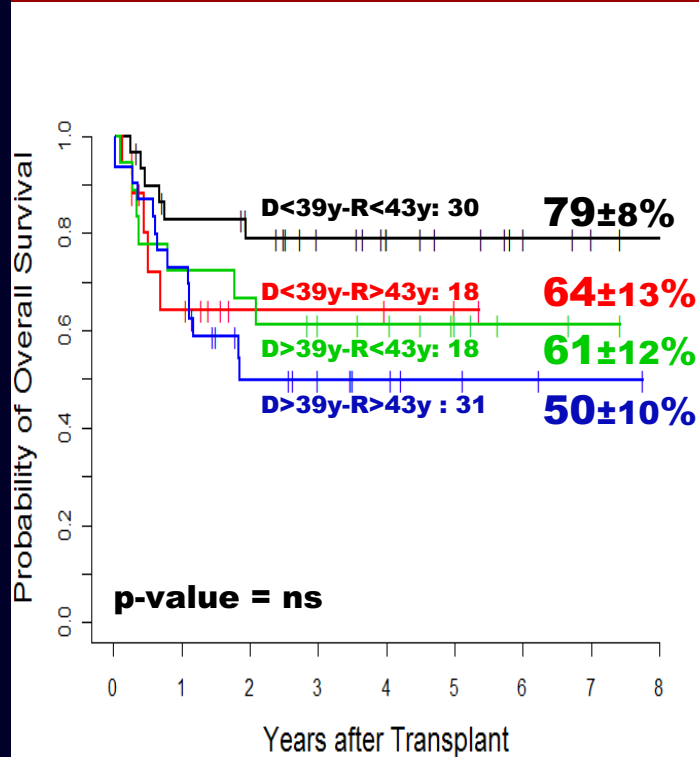
Overall Survival



Allogeneic Transplants in Acute Myeloid Leukemia

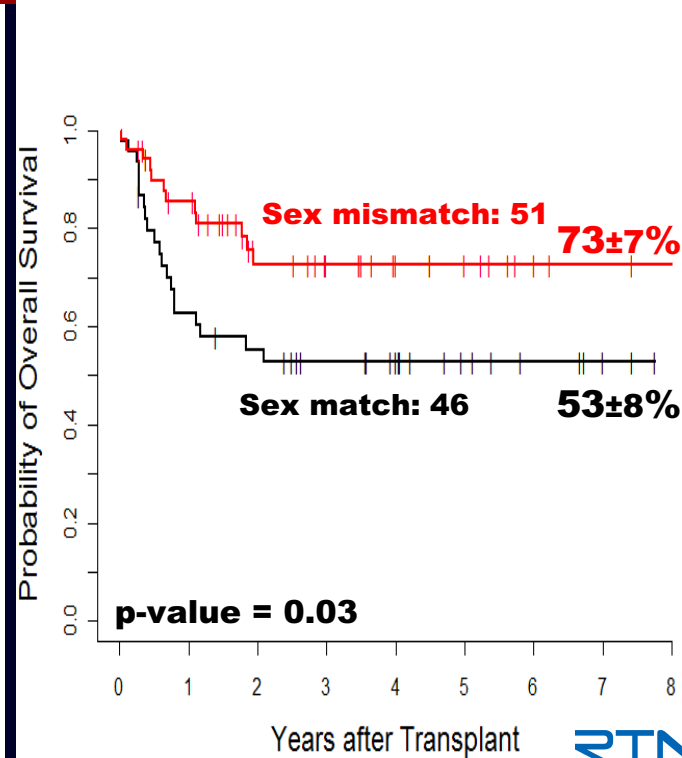
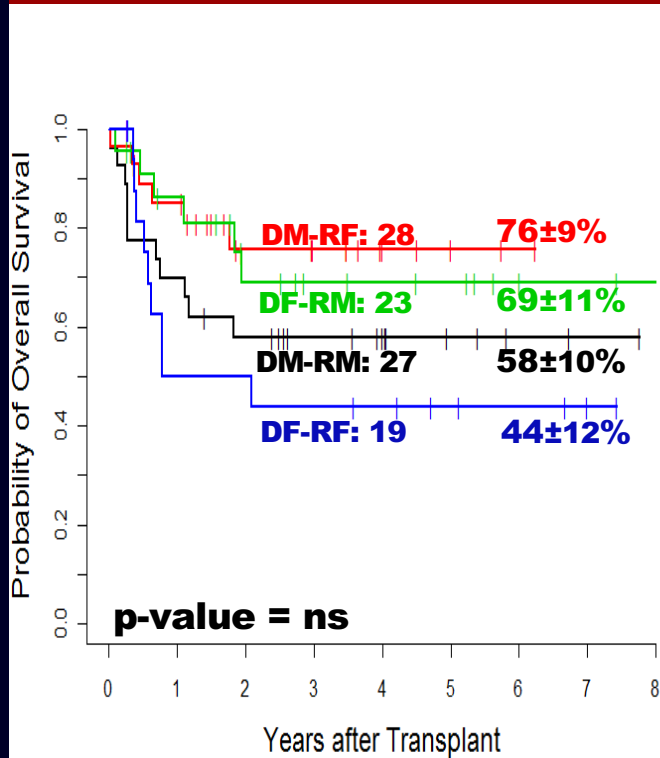
Early Stage AML and MAC Regimen

Overall Survival by D/R Age Combinations



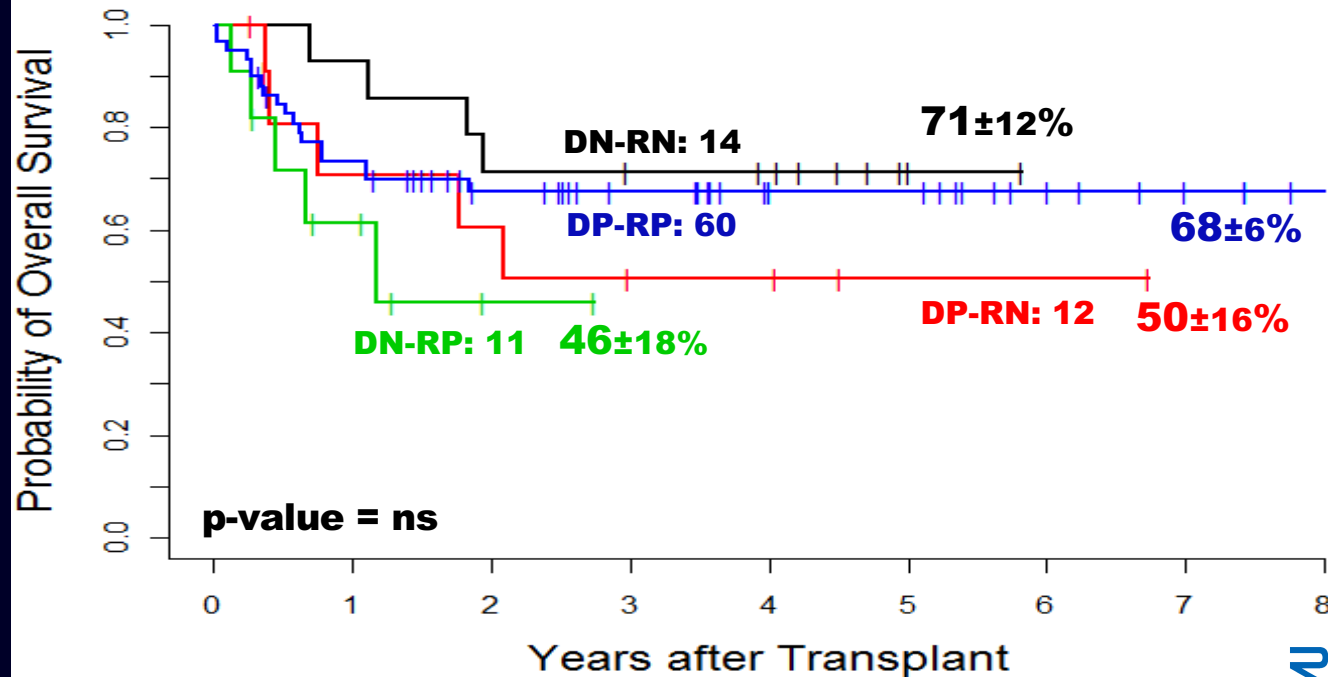
Early Stage AML and MAC Regimen

Overall Survival by D/R Sex Combinations



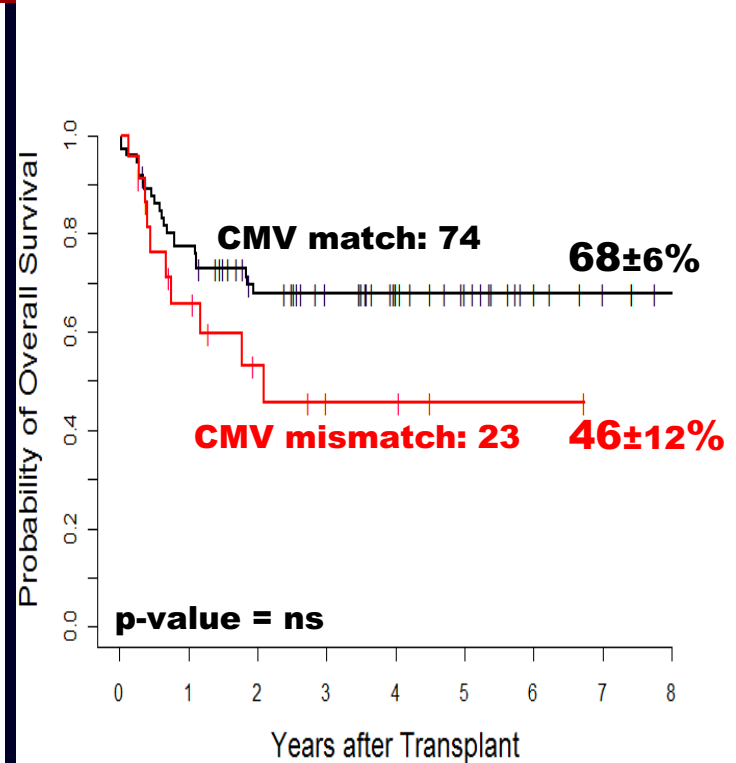
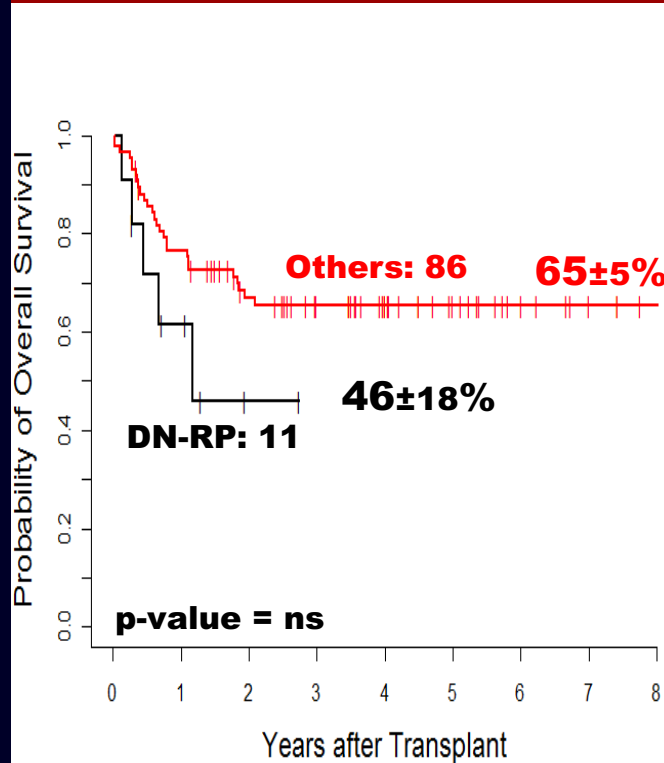
Early Stage AML and MAC Regimen

Overall Survival by D/R CMV Status



Early Stage AML and MAC Regimen

Overall Survival by D/R CMV Status



Allogeneic Transplants in Acute Myeloid Leukemia

Early Stage AML and MAC Regimen

Multivariate Analysis of Overall Survival

Variable	Hazard Ratio	p-value
HSC Source (Id Sib vs MUD)	1.364	0.58
HSC Source (Haplo vs MUD)	1.624	0.44
D-R Age (D<39y-R<43y vs Others)	2.087	0.05
D-R Sex (Mismatched vs Matched)	2.159	0.02
D-R CMV (DNeg-RPos vs Others)	4.194	0.04

Established criteria of donor choice

1st

Ident. Sib.

MUD

Haplo



2nd

The Best Donor/Recipient Combination for

AGE

SEX

CMV

Evolving criteria of donor choice

1st

The Best Donor/Recipient Combination for

AGE

SEX

CMV



2nd

Ident. Sib.

MUD

Haplo

Criteria of donor choice

Old question:

Who is the best ~~alternative~~ donor ?

New question:

Who is the best donor ?

Conclusion

In perspective, the HLA matching is unlikely to remain the first criterion for donor identification, but other factors known to affect the transplant outcomes such as features of donor-recipient combinations could drive the search for the best donor.

Main Issues for the Future

- **Grade-Extension of HLA Typing for MUD, MMUD and Haplo**
- **Differential Weighting to other non-HLA factors:
age, sex, ABO, CMV**
- **Search for the Best Algorithm in the Donor Choice**
- **Evaluation of Transplant Results by:**
 - **Intention-to-Transplant**
 - **Different Algorithms**
 - **Different Donor Sources**
 - **Uniform Transplant Policy**

EBMT Meeting 2026, Educational Session on Donor Selection for Allo-SCT: Does HLA Matching Still Matter ?

Conclusions

- **The dominance of HLA matching in donor selection is being challenged**
- **In the PT-Cy era, HLA mismatch is no longer prohibitive**
- **The expansion of the donor pool allows for true donor choice**
- **Donor Age has emerged as a key determinant, possibly outweighing HLA in some situations**
- **Multidimensional decision including other non-HLA factors (sex, CMV, ABO)**
- **How to intentionally exploit HLA mismatching to enhance GVL ?**

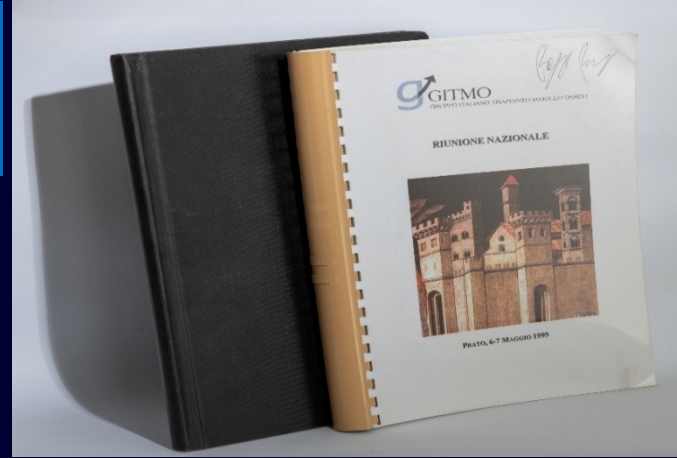
Prime Riunioni Nazionali GITMO

Firenze 14-15 Maggio 1998

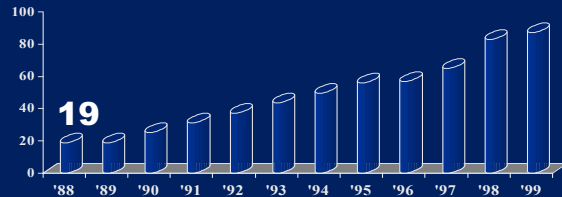
Prato 6-7 Maggio 1999



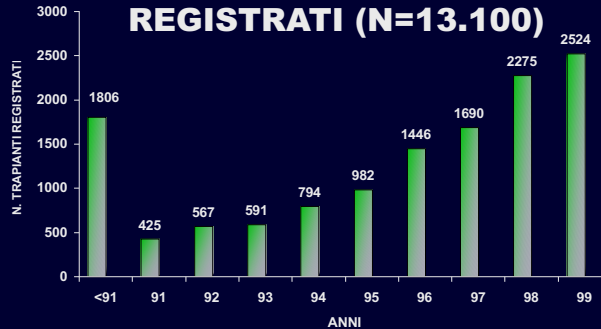
**Primo
Regolamento
GITMO**



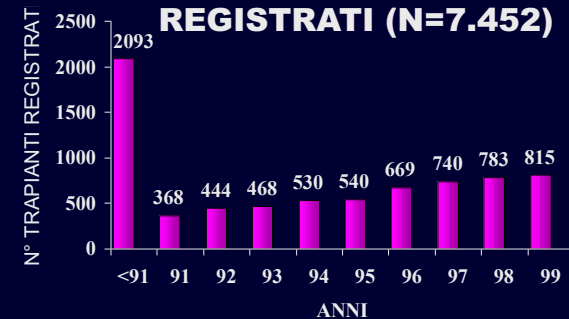
**GITMO INCREMENTO CENTRI
1988 - 1999**



**AUTOTRAPIANTI
REGISTRATI (N=13.100)**



**ALLOTTRAPIANTI
REGISTRATI (N=7.452)**



Organigramma 3° Presidenza GITMO 1997-2001

• **Presidente**



William Arcese

• **Coordinatori**

• Sezione Autologo



Corrado Tarella

• Sezione Allogenico



Giuseppe Bandini

• Sezione Pediatrica



Franco Locatelli

• Sezione Tumori Solidi



Giovanni Rosti

Commissione MUD



Alberto Bosi

Registri

Autologo Marco Vignetti



Allogenico Andrea Bacigalupo



AIEOP-TMO Andrea Pession

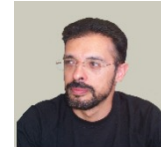


Tumori Solidi Giovanni Rosti



Sezione Infermieri

Presidente

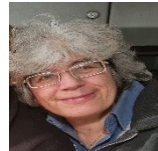


Roberto Ricci

Grant



Segreteria Nazionale



Antonietta Martinucci

