

Post EBMT 2026 Konditionierung für allogene SZT

Christoph Faul

Disclosure of conflicts of interest

1. Employment or Leadership Position

None

2. Advisory Role or Expert Testimony

None

3. Stock Ownership

None

4. Patent, Copyright, Licensing

None

5. Honoraria

none

6. Financing of Scientific Research

None

7. Other Financial Relationships

None

8. Immaterial Conflicts of Interest

None



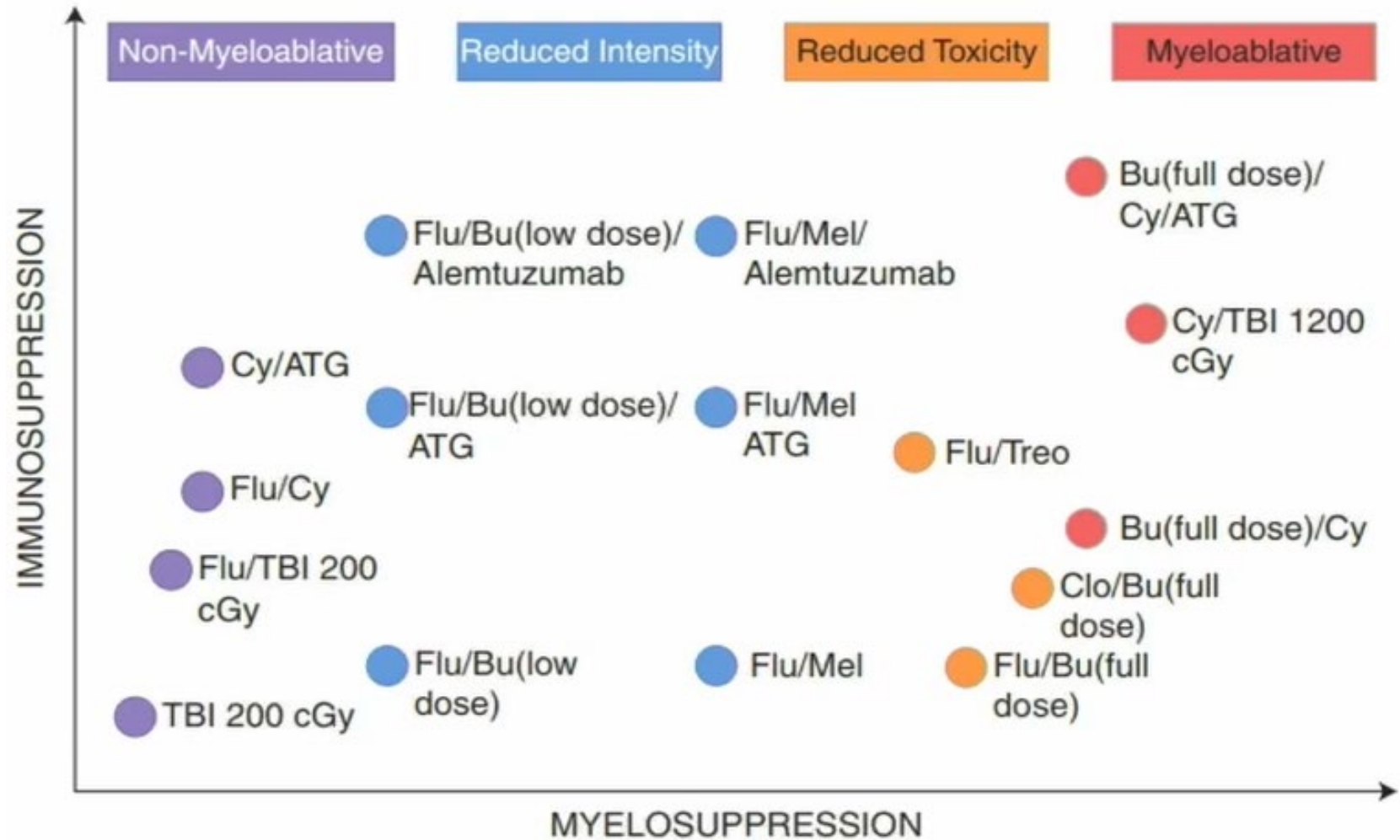
**Universitätsklinikum
Tübingen**

Konditionierung

1. Immunsuppression
2. Myelosuppression
3. Morbidität/Mortalität



Spektrum

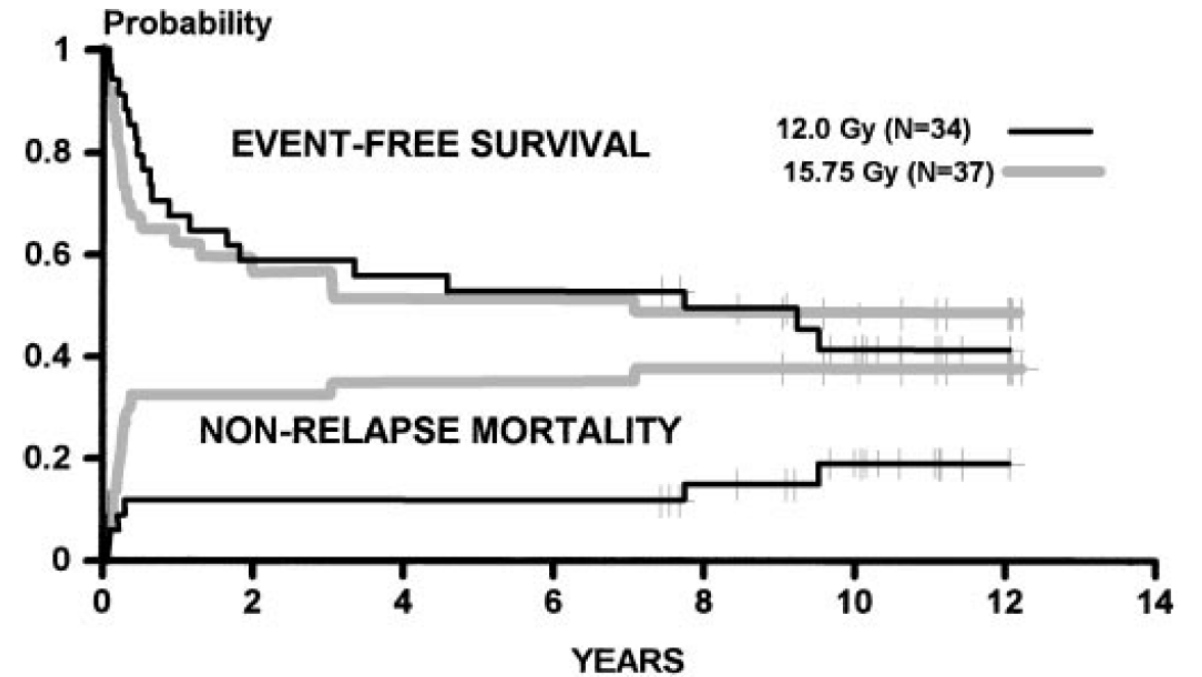
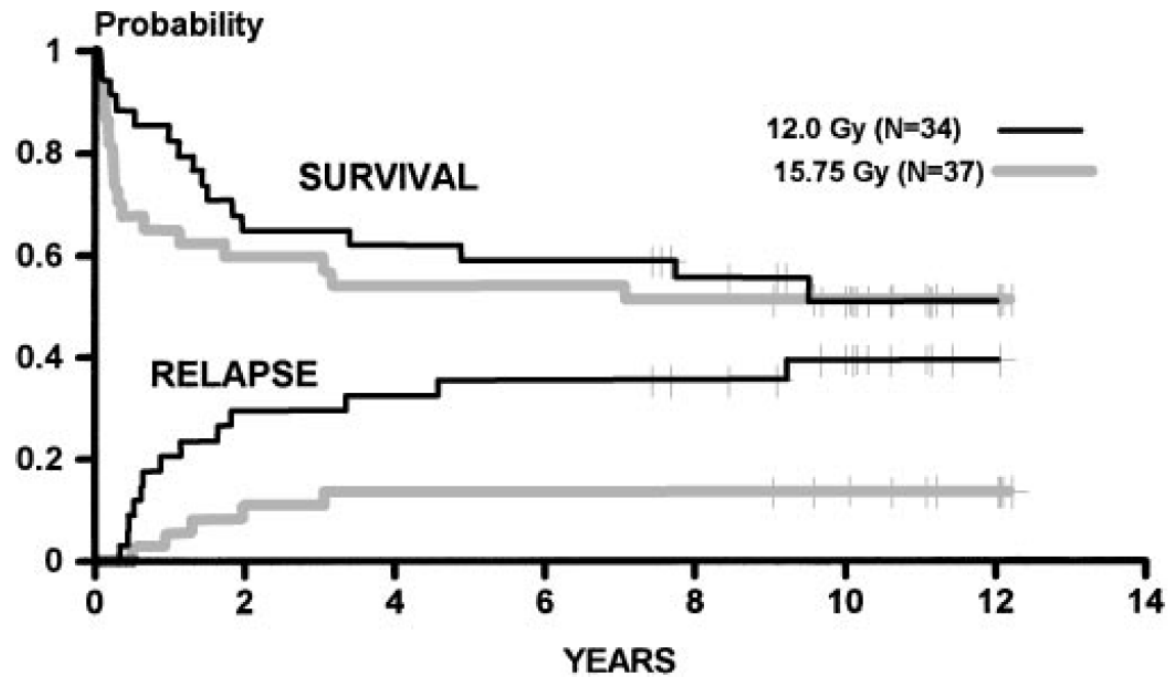


1985 - 1988



1985 - 1988

Randomized Trial of Two Irradiation Regimens (AML)



Clift RA et al. Blood 1998; 92: 1455-1456.



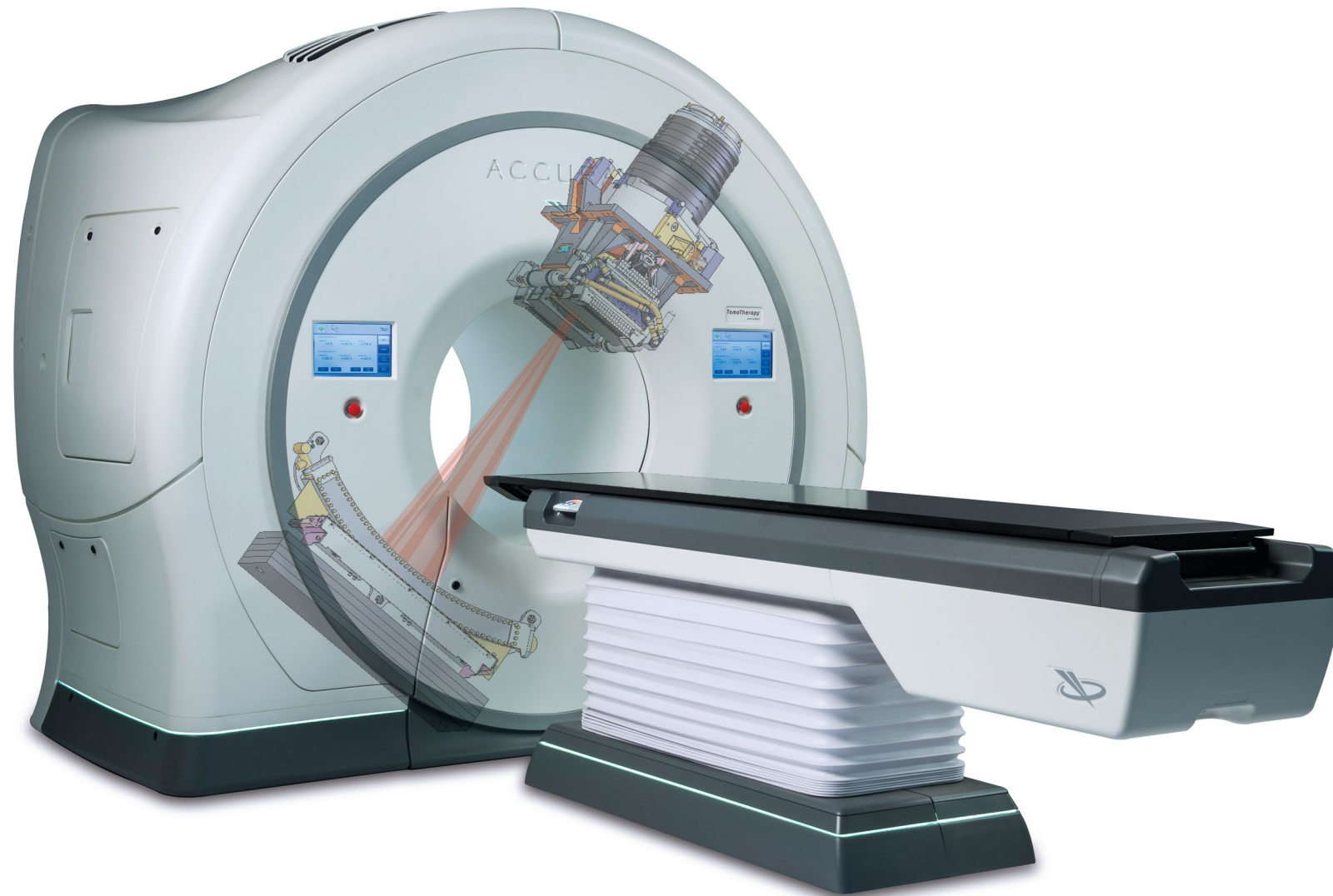


Total Marrow and Lymphoid Irradiation in Combination with Post-Transplant Cyclophosphamide-Based Graft Versus Host Disease Prophylaxis Confers Favorable GVHD/Relapse-Free Survival and Quality of Life in Patients with Acute Myeloid Leukemia in Remission

Anthony Stein, Monzr M Al Malki, Dongyun Yang, Haoyue Shan, Ibrahim Aldoss, Vaibhav Agrawal Haris Ali, Idoroenyi Amanam, Ahmed Aribi, Andrew Artz, Brian Ball, Pamela Becker, Amanda Blackmon, Savita Dandapani, Chunhui Han, Leonardo Farol, Susanta Hui, Paul Koller, An Liu, Ryotaro Nakamura, Salman Otoukesh, Hoda Pourhassan, Vinod Pullarkat, Firoozeh Sahebi, Amandeep Salhotra, Karamjeet Sandhu, James Sanchez, Eileen Smith Stephanie Yoon, Guido Marcucci, Stephen J Forman, Joycelynne Palmer, Jeffrey Wong

Department of Hematology/Hematopoietic Cell Transplantation, City of Hope
City of Hope
March 23, 2026



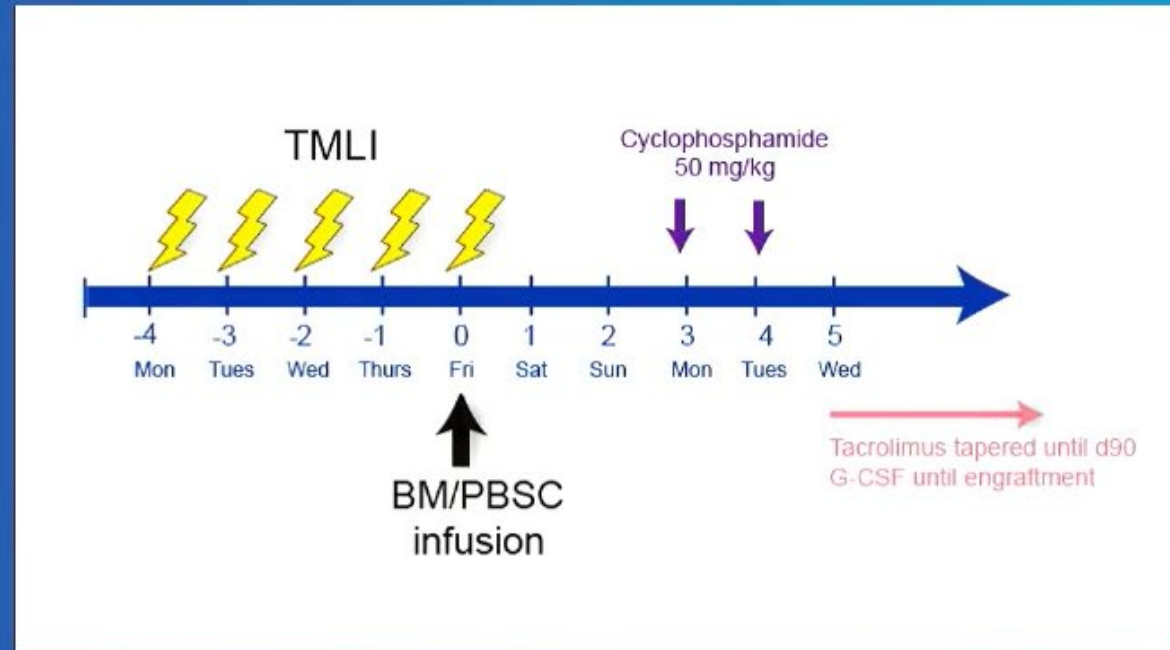




Zverava A et al. Poster A008.



Study schema

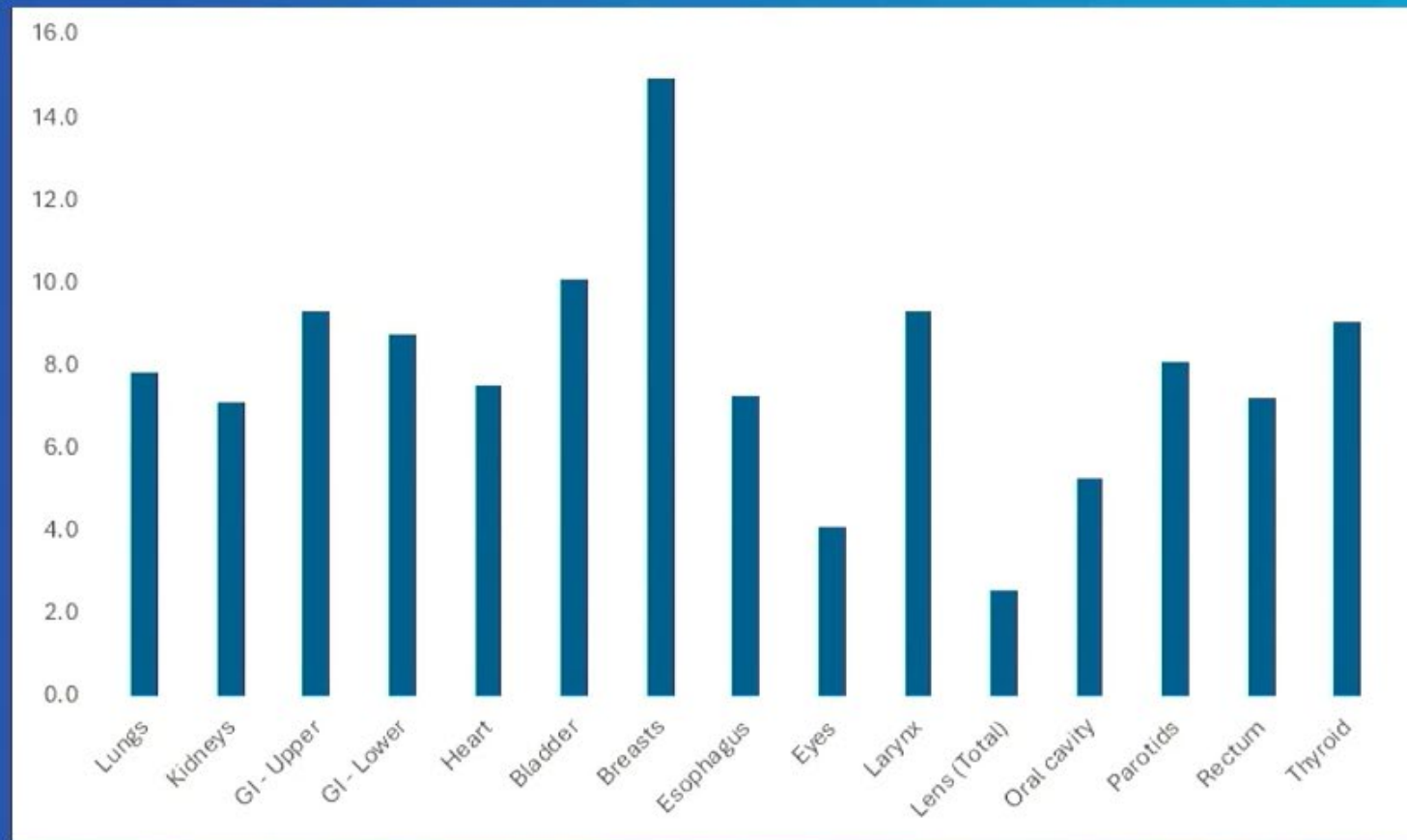


- Target regions (up to 20 Gy): skeletal bone, major lymph node chains, testes, spleen, ribs, sternum, skull.
- Target regions kept at 12 Gy: liver, brain.
- Non-target regions: all other organs (e.g., lungs, heart, intestines, kidneys, eyes, bladder, stomach).
- Maintenance therapy was allowed.

Patient characteristics

Disease Status	
1st Remission	38 (88.4%)
2nd Remission	5 (11.6%)
Cytogenetic risk by ELN 2022	
Favorable (2 in 2 nd CR)	4 (9.3%)
Intermediate	24 (55.8%)
Adverse	15 (34.9%)

Median organ dose (Gy)



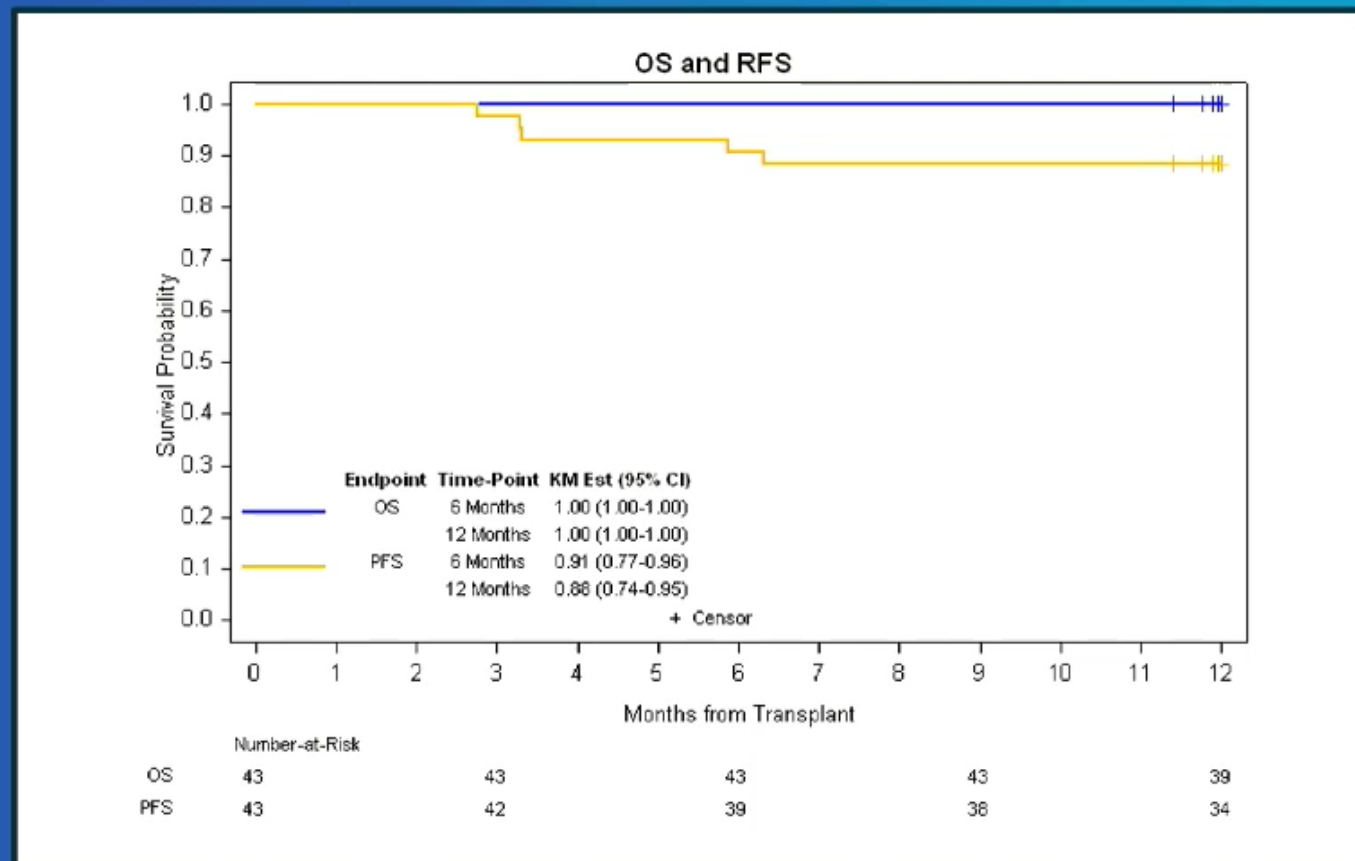
Results: Bearman Toxicities

	Grade				
	Grade 0	Grade 1	Grade 2	Grade 3	Grade 4
	N	N	N	N	N
Toxicity					
Cardiac Toxicity	42	1	0	0	0
Bladder Toxicity	37	3	3	0	0
Renal Toxicity	43	0	0	0	0
Pulmonary Toxicity	41	2	0	0	0
Hepatic Toxicity	43	0	0	0	0
CNS Toxicity	40	3	0	0	0
Stomatitis	34	8	1	0	0
GI Toxicity	20	23	0	0	0

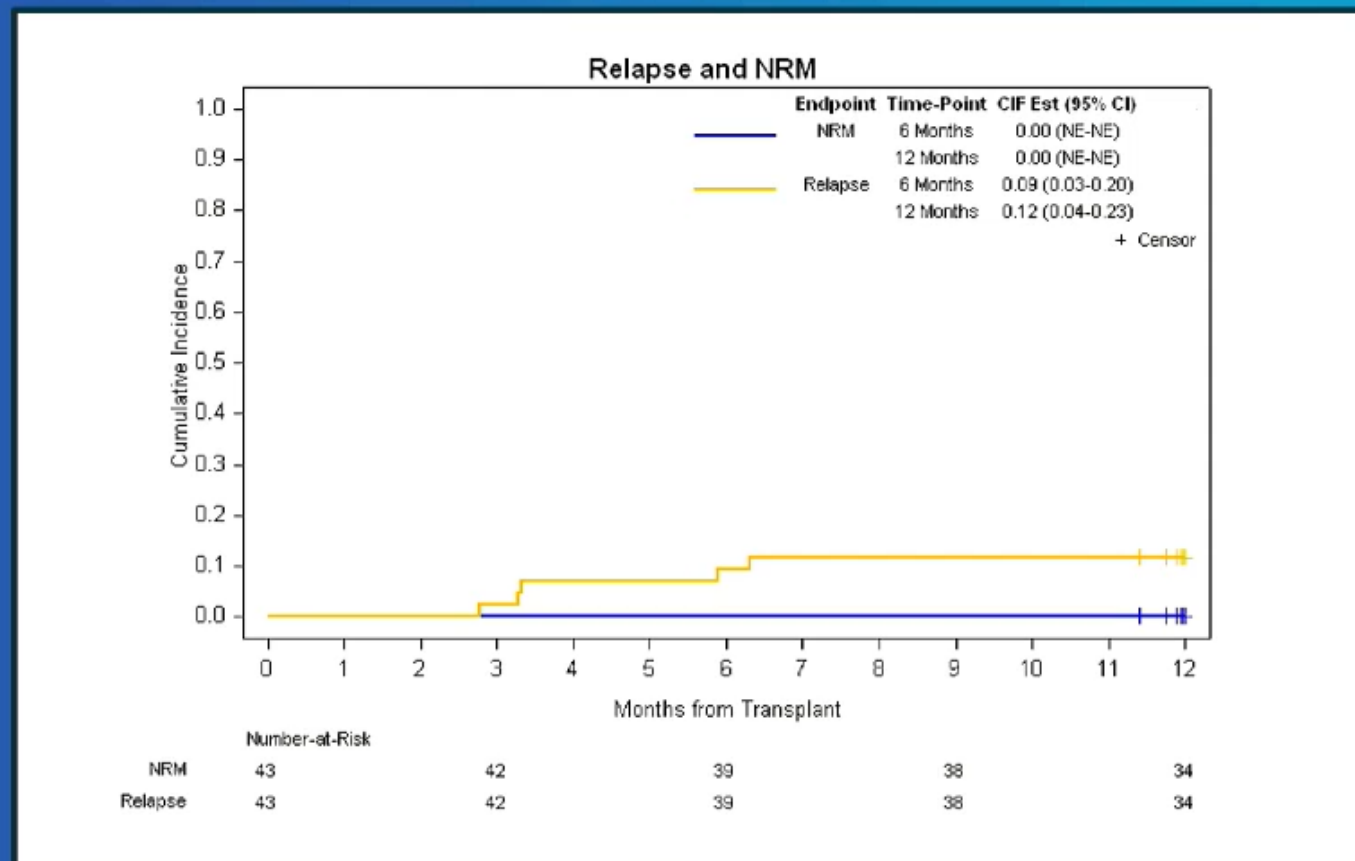
No >grade 2 toxicities were encountered



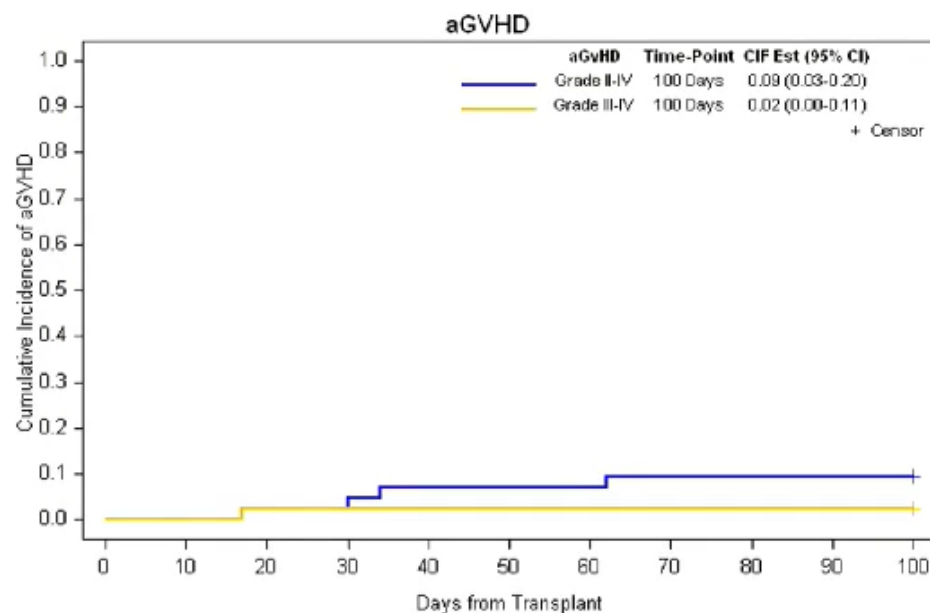
Results: OS/RFS



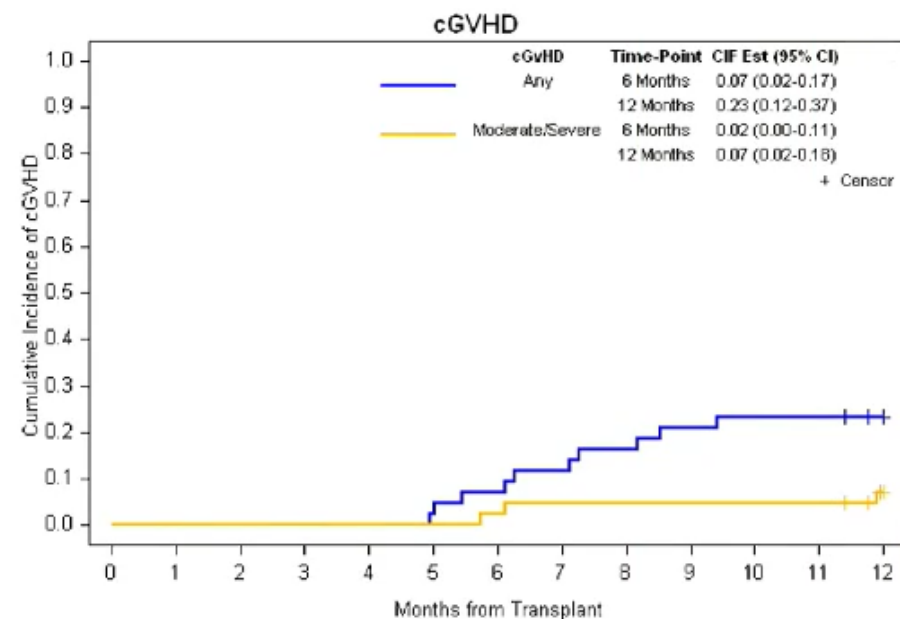
Results: Relapse and NRM



Results: aGVHD and cGVHD

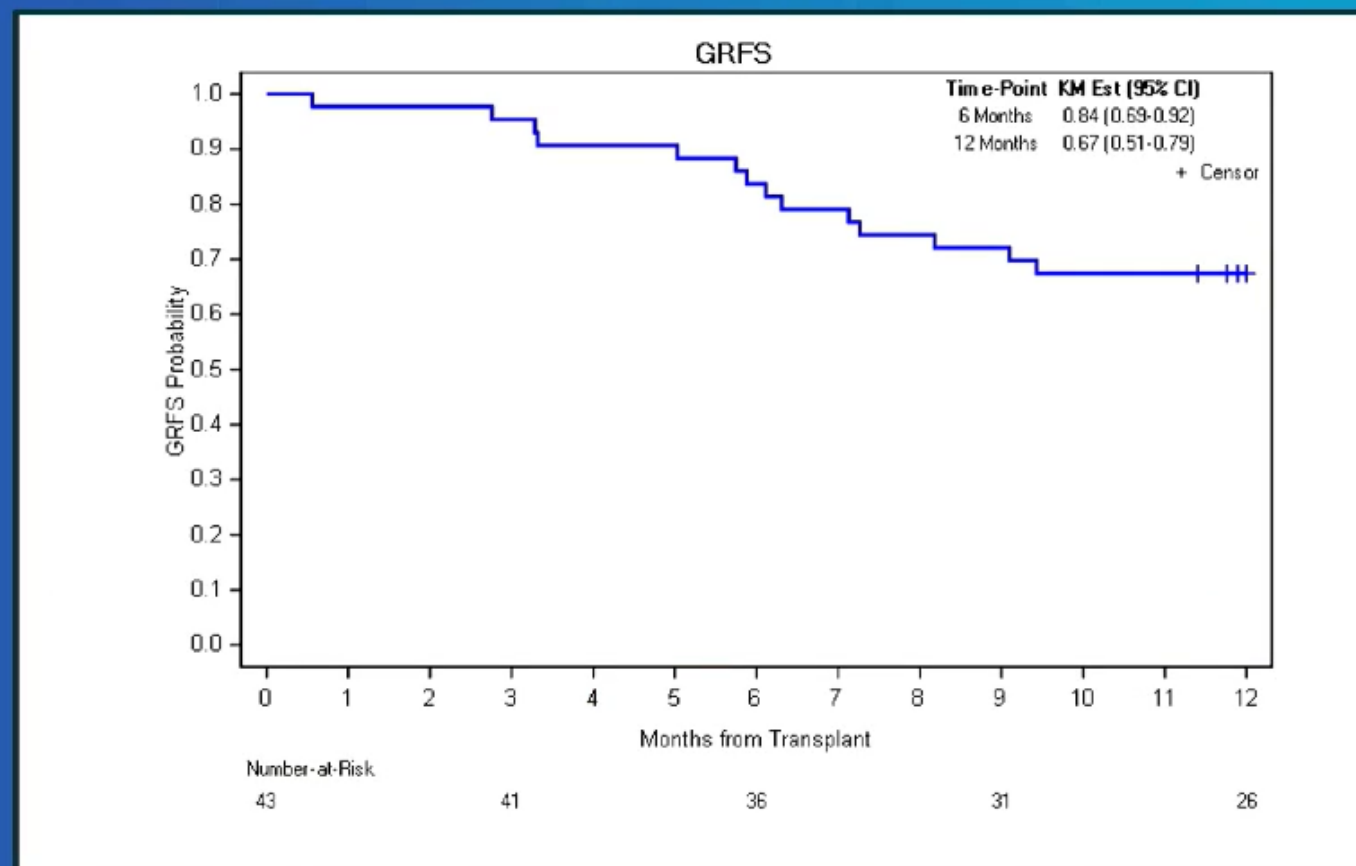


Number-at-Risk											
Grade II-IV	43	43	42	42	40	40	40	39	39	38	38
Grade III-IV	43	43	42	42	42	42	42	42	42	41	41



		Number-at-Risk				
Any		43	42	37	30	27
Moderate/Severe		43	42	38	36	32

Results: GRFS



Conclusions

100%

Gesamtüberleben (OS)

*6 und 12 Monate
(KM-Schätzer)*

0%

Non-Relapse Mortality

*0% bei 6 und
12 Monaten*

88%

Rezidivfreies Überleben (PFS)

*12 Monate
(95% CI: 74–95%)*

9%

Akute GVHD Grad II–IV

*bei 100 Tagen
(CIF 0,09)*



23%

Chronische GVHD (any)

Universitätsklinikum
Tübingen

*bei 6 Monaten
Mäßig/Schwer: 7%*

67%

GRFS – Primärendpunkt

*GVHD-freies
rezidivfreies Überleben*



MYELOABLATIVE IS NOT ALWAYS BETTER: DISMANTLING THE ONE-SIZE-FITS-ALL APPROACH TO HAPLOIDENTICAL CONDITIONING INTENSITY

Yosra M. Aljawai, Denai Milton, George Chen, Betul Oran, Portia
Smallbone, Partow Kebriaei, Uday Popat, Richard Champlin, Elizabeth Shpall,
Rohtesh Mehta

THE UNIVERSITY OF TEXAS
MDAnderson
Cancer Center
Making Cancer History®



3/23/3026

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Abstract with ID 1803

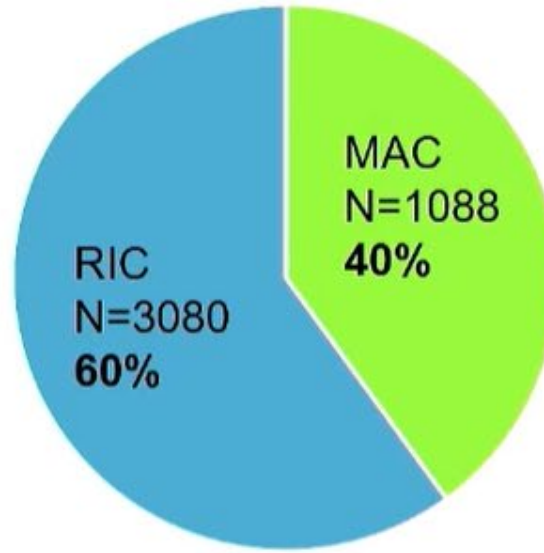


Study Design and Methods

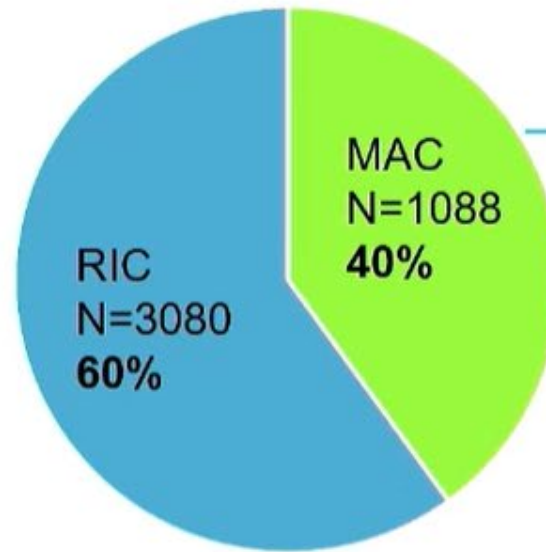
- CIBMTR publicly available dataset 2017-2021
- Adult consecutive patients n= 5143
- First allogeneic HCT was included
- All patients received post-transplant cyclophosphamide (PTCy)- based GVHD prophylaxis.
- Patient age:
 - AML: ≤ 55 vs > 55 years
 - MPN/MDS: ≤ 60 vs > 60 years
 - ALL: ≤ 40 vs > 40 years



Distribution of Conditioning Regimens



Distribution of Conditioning Regimens



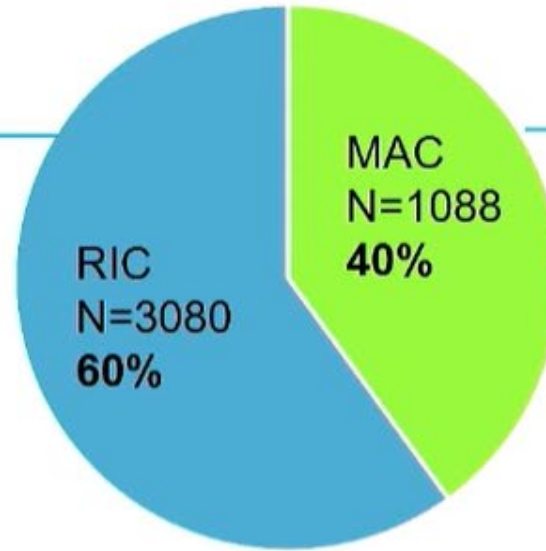
Myeloablative Conditioning (MAC)		
	Frequency	% of MAC
1. MAC/ TBI	1088	53%
TBI/Flu	897	44%
*other	191	8%
2. MAC/ no TBI	969	47%
Flu/Bu +/- TT	619	30%
Bu/Cy	259	13%
**other	91	4%

* Other MAC/TBI: TBI + (Flu/Cy, Mel, Cy, Flu/Cy/TT)

** Other MAC/ no TBI: TBI + (Bu/Mel, Flu/Mel+/-TT, Flu/cy, treosulfan)



Distribution of Conditioning Regimens



Reduced Intensity Conditioning (RIC)		
	Frequency	% of RIC
3. RIC/ Flu/Cy/TBI	1869	61%
Flu/Cy/TBI	1869	61%
4. RIC/ all other	1211	39%
TBI/Mel	399	13%
TBI/Flu	262	8%
Flu/Mel +/-TT	260	8%
Flu/Bu +/-TT	201	7%
*Other	85	3%

* Other: Bu/cy, Flu/cy

Myeloablative Conditioning (MAC)		
	Frequency	% of MAC
1. MAC/ TBI	1088	53%
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*other	191	8%
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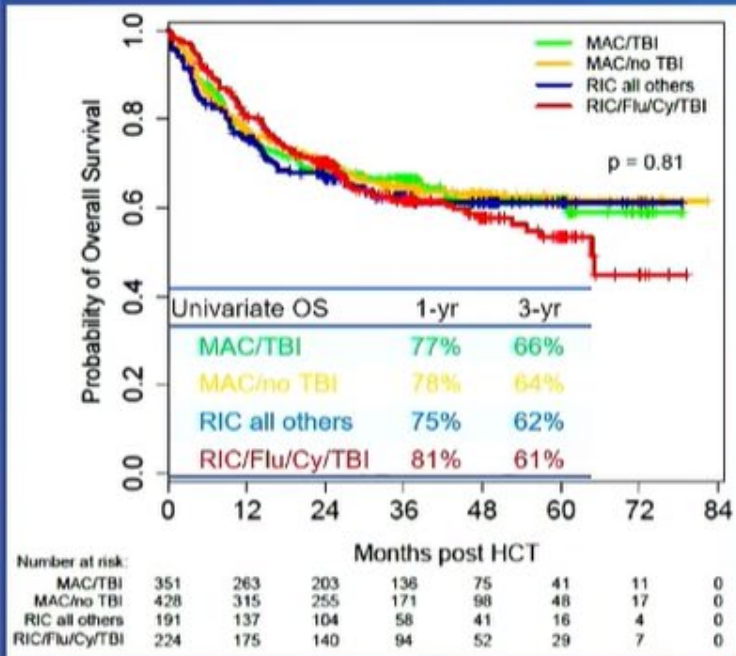
* Other MAC/TBI: TBI + (Flu/Cy, Mel, Cy, Flu/Cy/TT)
 ** Other MAC/ no TBI: TBI + (Bu/Mel, Flu/Mel+/-TT, Flu/cy, treosulfan)



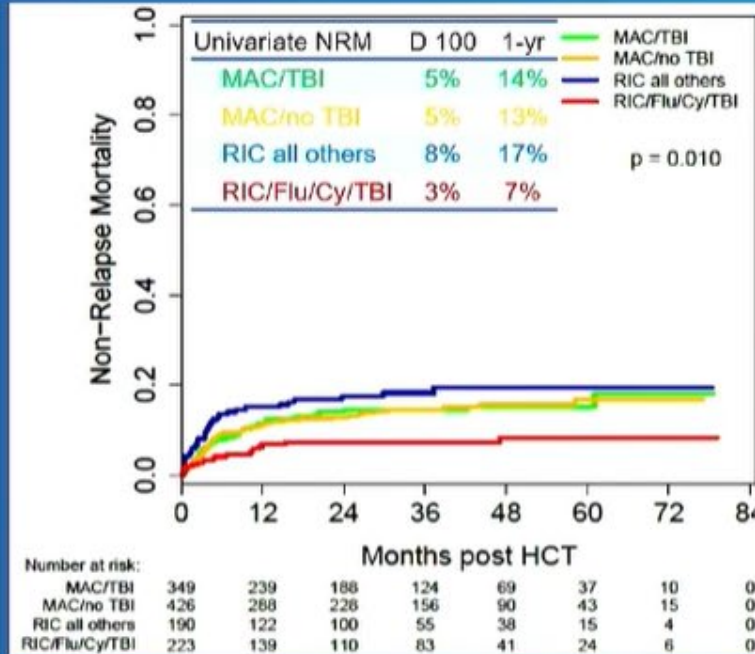
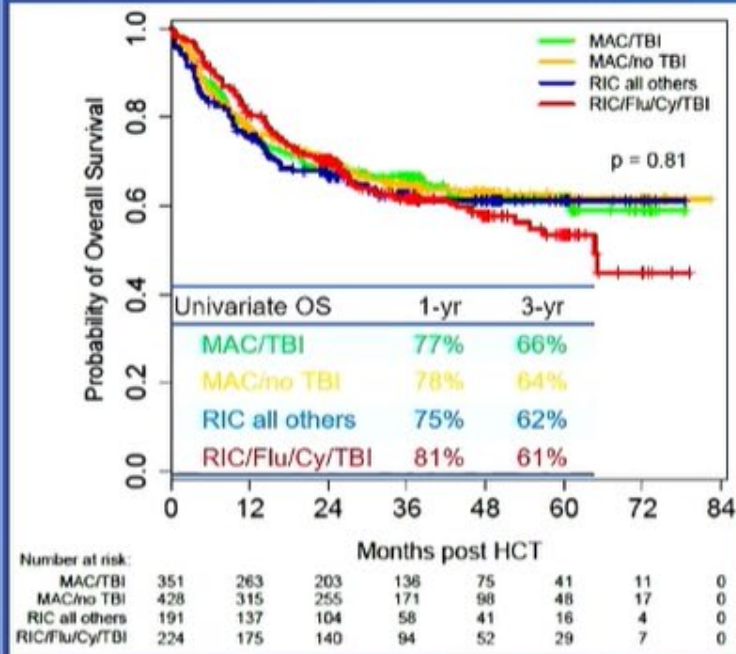
AML



AML ≤ 55 years: Myeloablative Regimens Are Not Associated With Survival Advantage

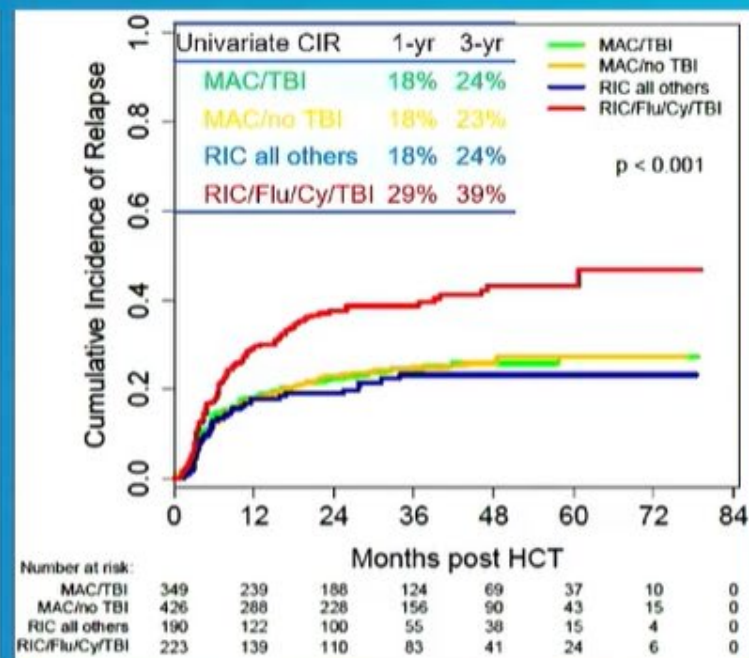
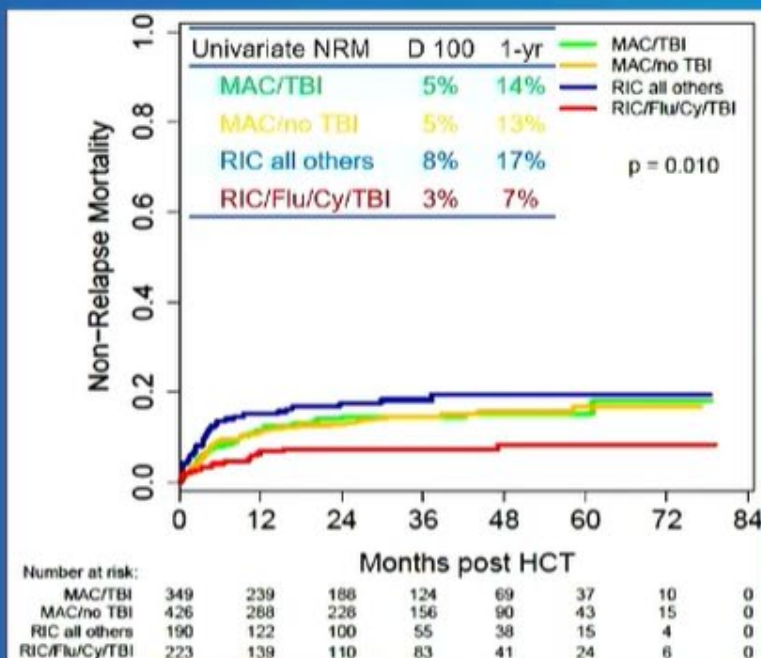
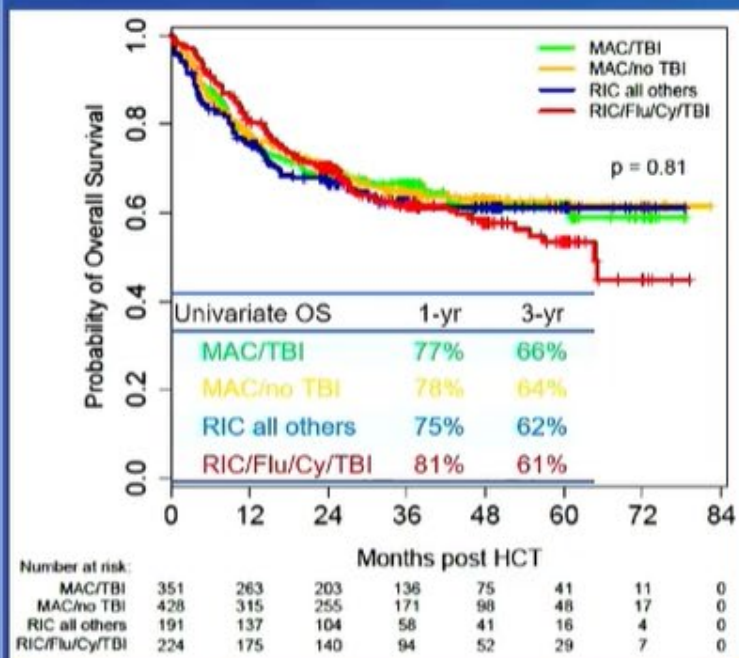


AML ≤ 55 years: Myeloablative Regimens Are Not Associated With Survival Advantage



RIC/Flu/Cy/TBI 0.50 (0.29, 0.89) 0.017

AML ≤ 55 years: Myeloablative Regimens Are Not Associated With Survival Advantage

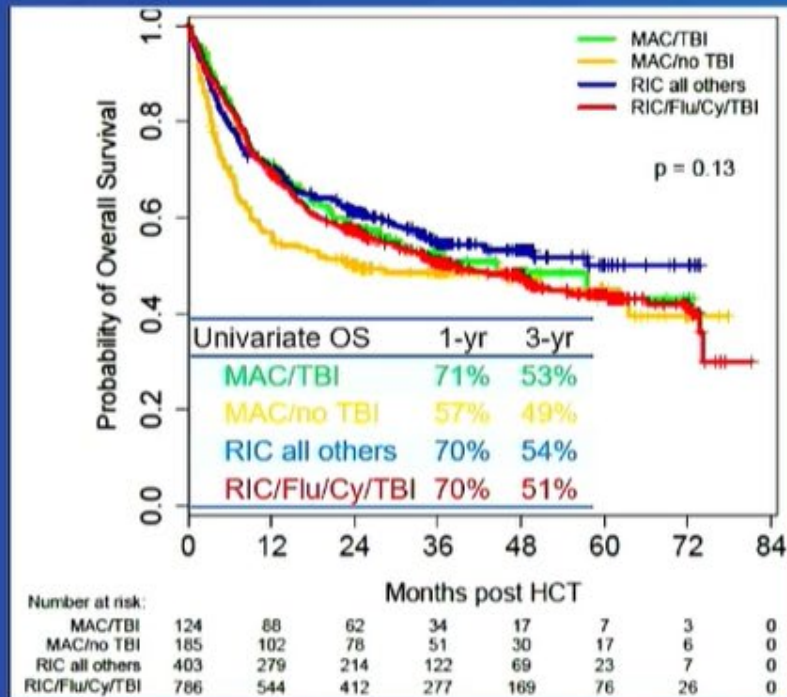


RIC/Flu/Cy/TBI 0.50 (0.29, 0.89) 0.017

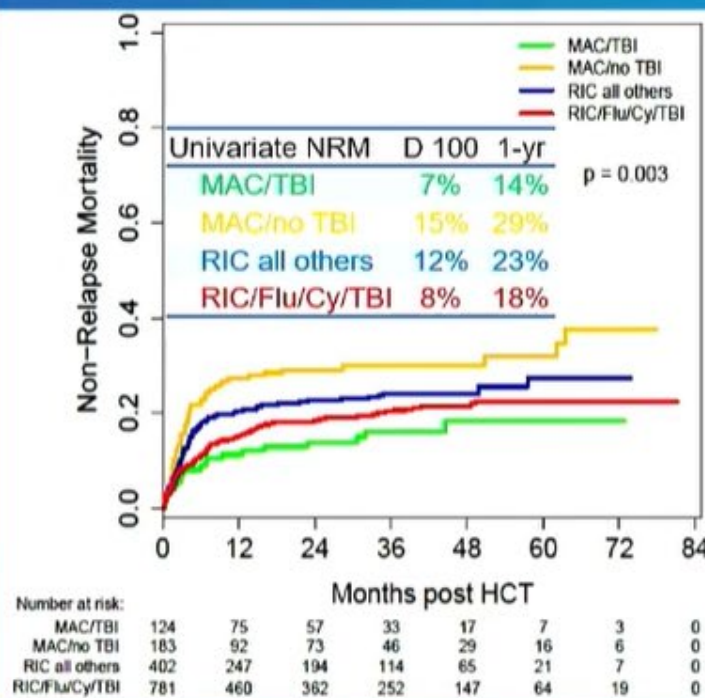
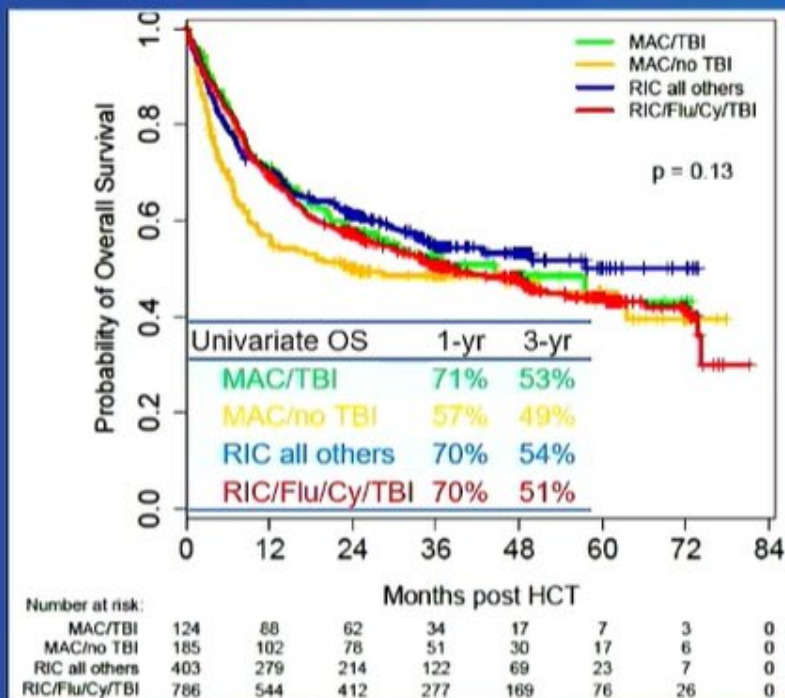
RIC/Flu/Cy/TBI 1.98 (1.42, 2.74) < 0.001



AML > 55 Years: Myeloablative Regimens Are Not Associated With Survival Advantage

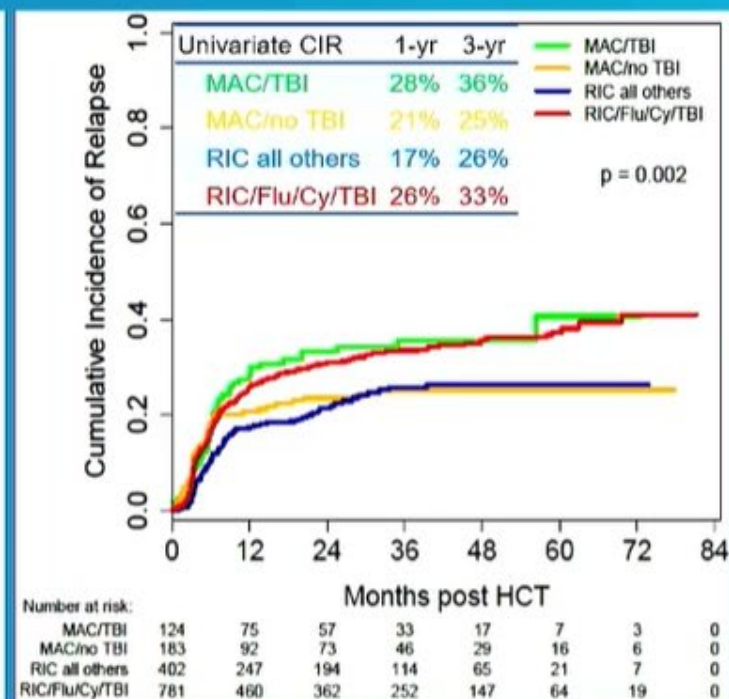
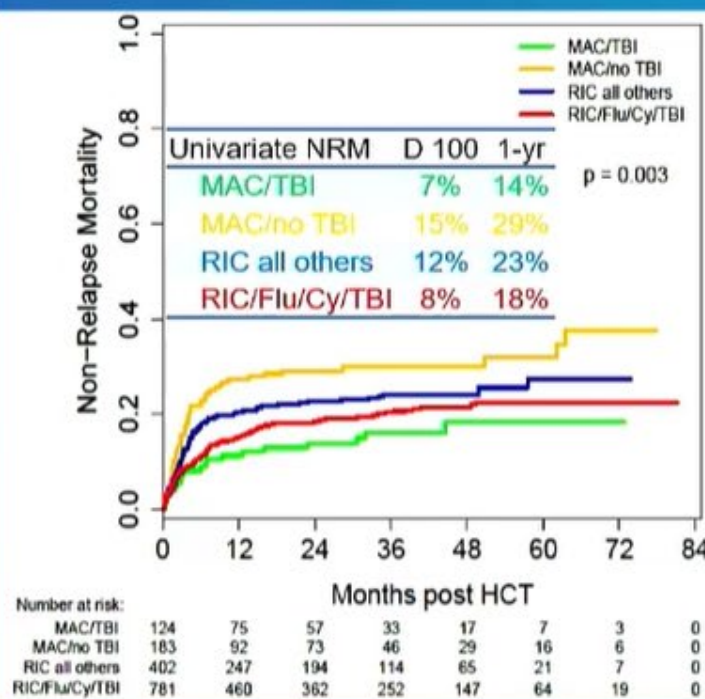
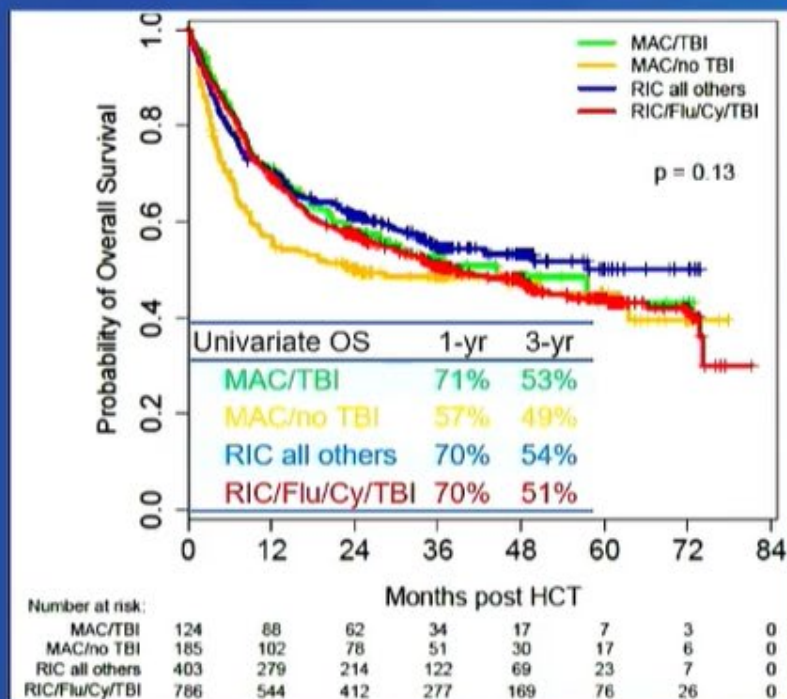


AML > 55 Years: Myeloablative Regimens Are Not Associated With Survival Advantage



MAC/no TBI 2.16 (1.30, 3.59) 0.003

AML > 55 Years: Myeloablative Regimens Are Not Associated With Survival Advantage



MAC/no TBI 2.16 (1.30, 3.59) 0.003

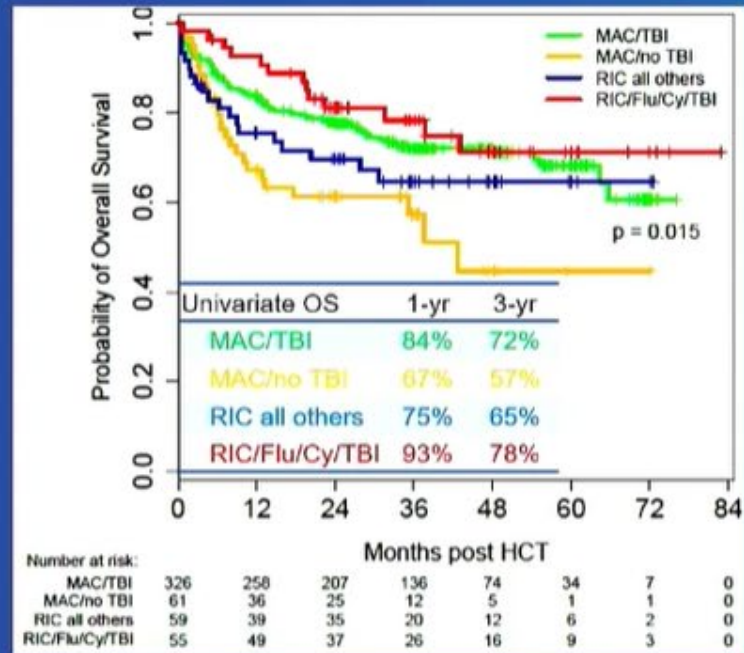
RIC all others 0.65 (0.45, 0.95) 0.025



ALL

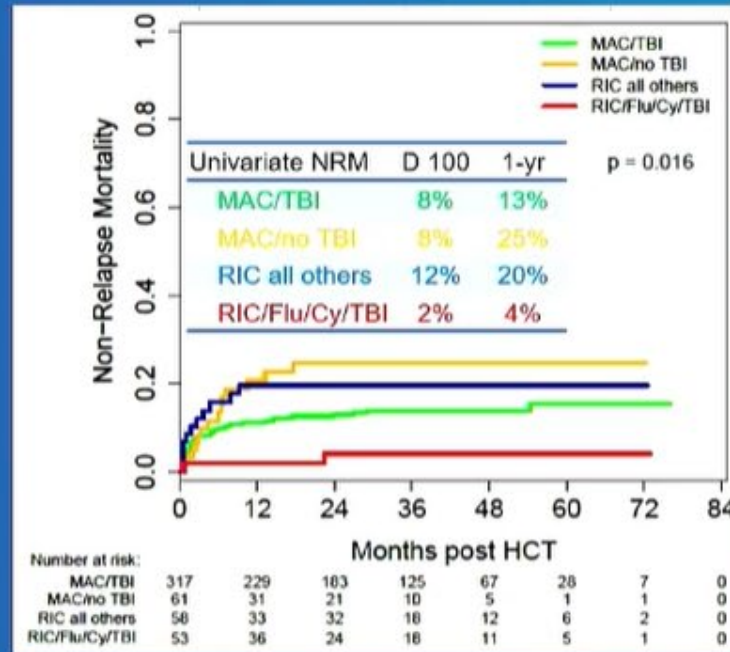
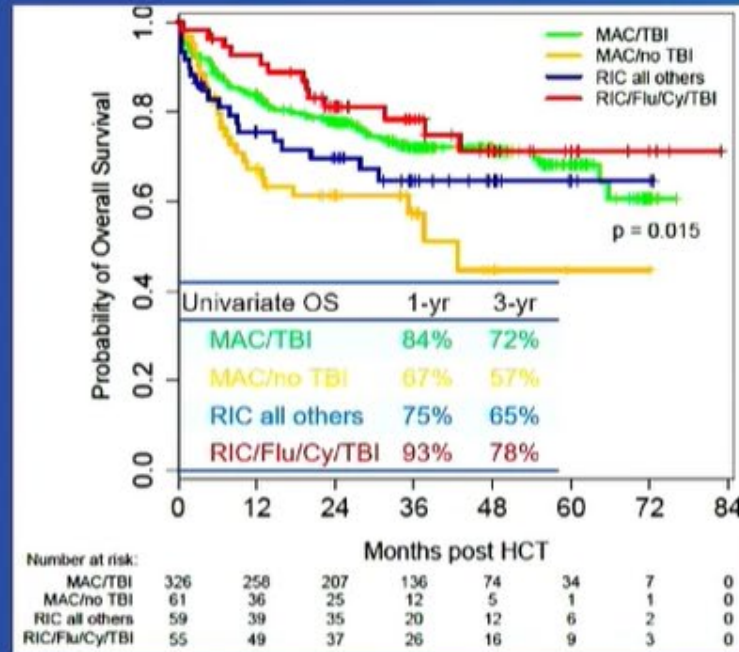


ALL Patients ≤ 40 Years: MAC/TBI and Flu/ Cy/ TBI Show Comparable OS



MAC/no TBI 1.50 (0.94, 2.39) 0.09

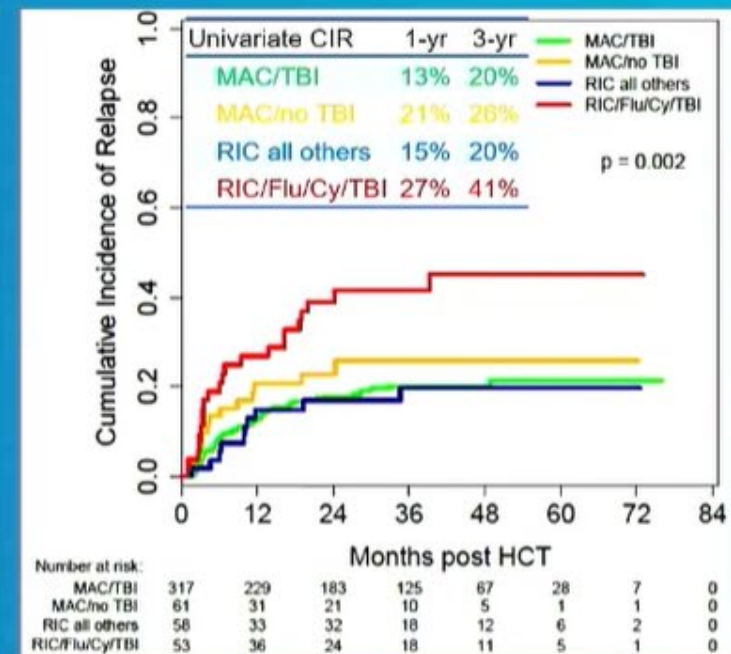
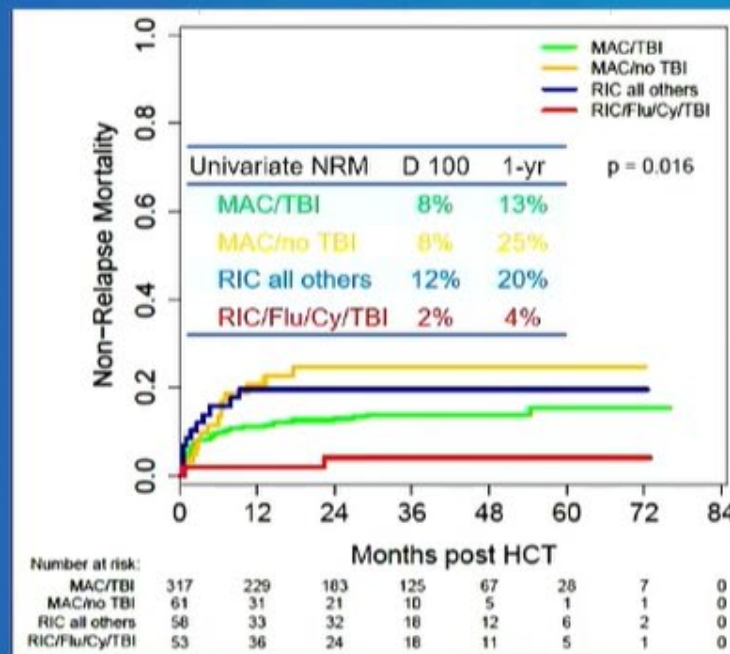
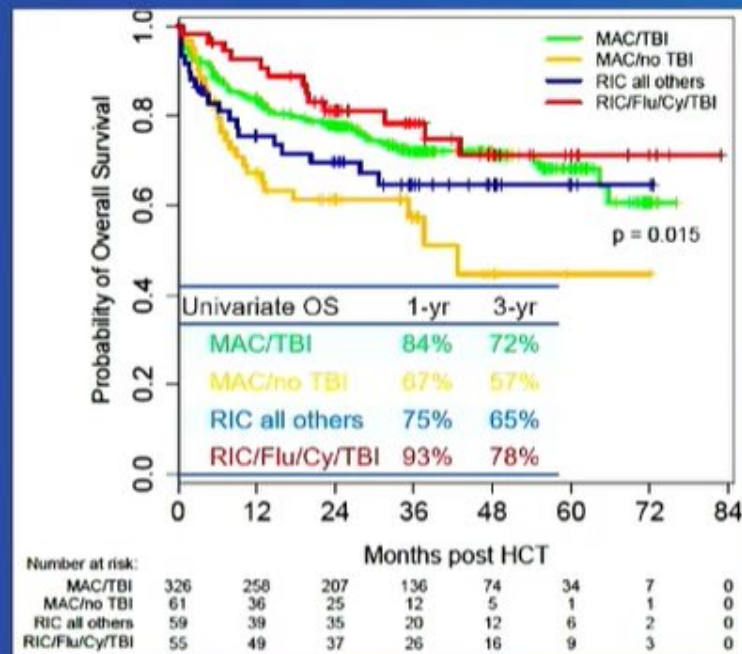
ALL Patients ≤ 40 Years: MAC/TBI and Flu/ Cy/ TBI Show Comparable OS



MAC/no TBI 1.50 (0.94, 2.39) 0.09

RIC/Flu/Cy/TBI 0.22 (0.05, 0.97) 0.046

ALL Patients ≤ 40 Years: MAC/TBI and Flu/ Cy/ TBI Show Comparable OS



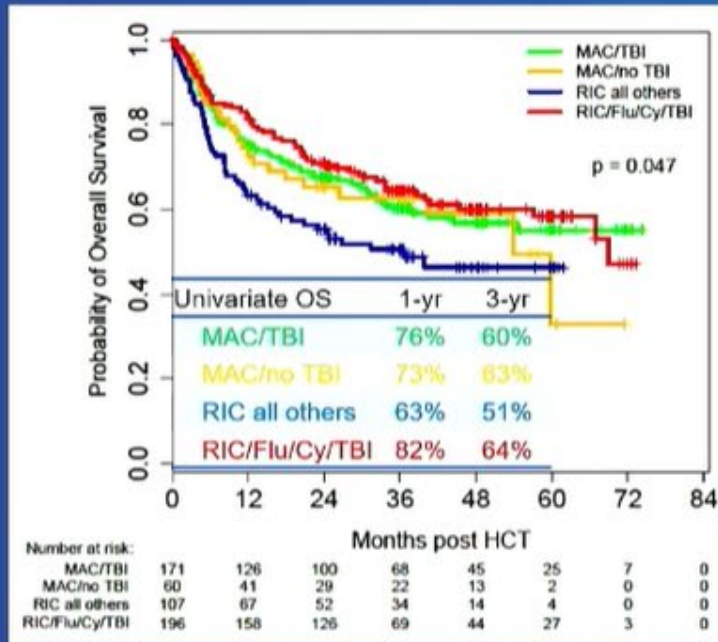
MAC/no TBI 1.50 (0.94, 2.39) 0.09

RIC/Flu/Cy/TBI 0.22 (0.05, 0.97) 0.046

RIC/Flu/Cy/TBI 2.32 (1.37, 3.92) 0.002



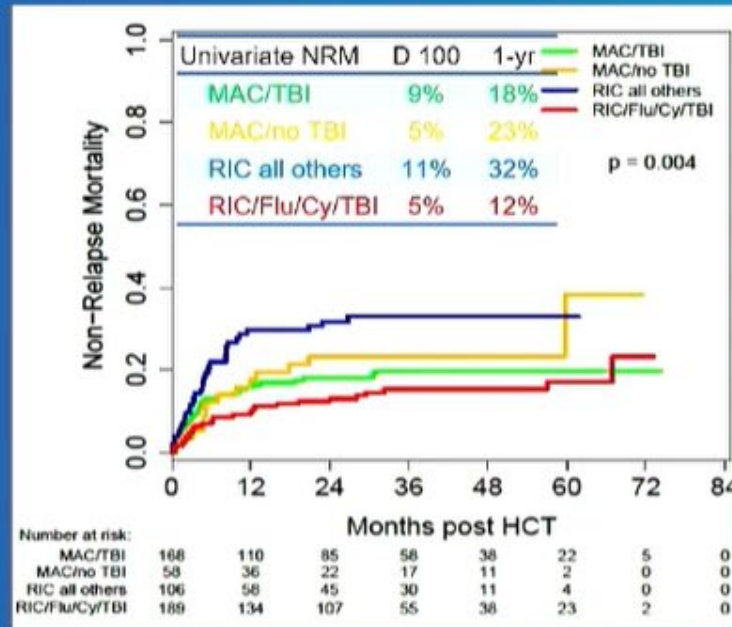
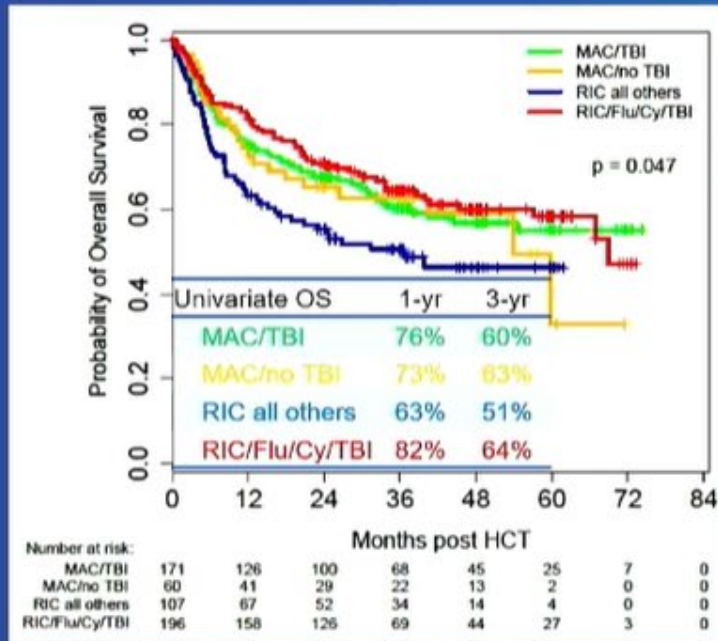
ALL > 40 Years: Flu/ Cy/ TBI is Associated With Superior OS Compared to Other Regimens



RIC/Flu/Cy/TBI 0.57 (0.38, 0.85) 0.006



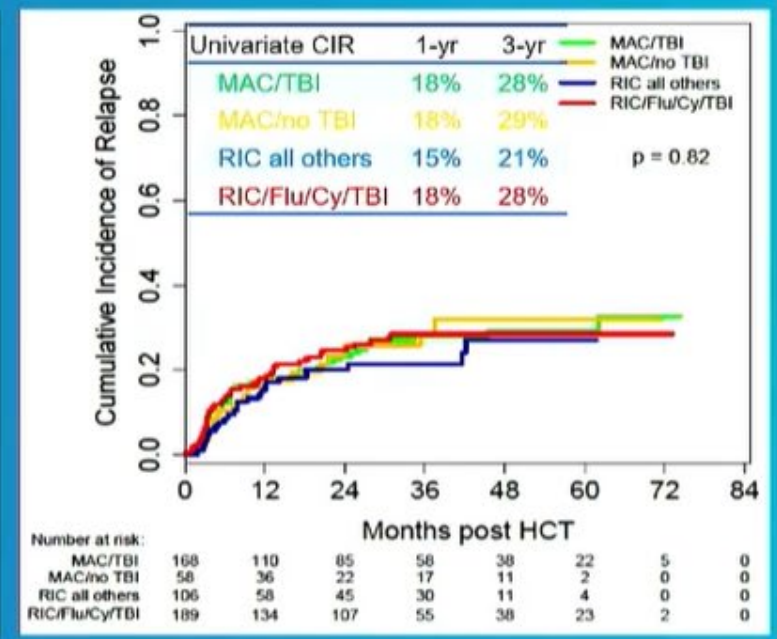
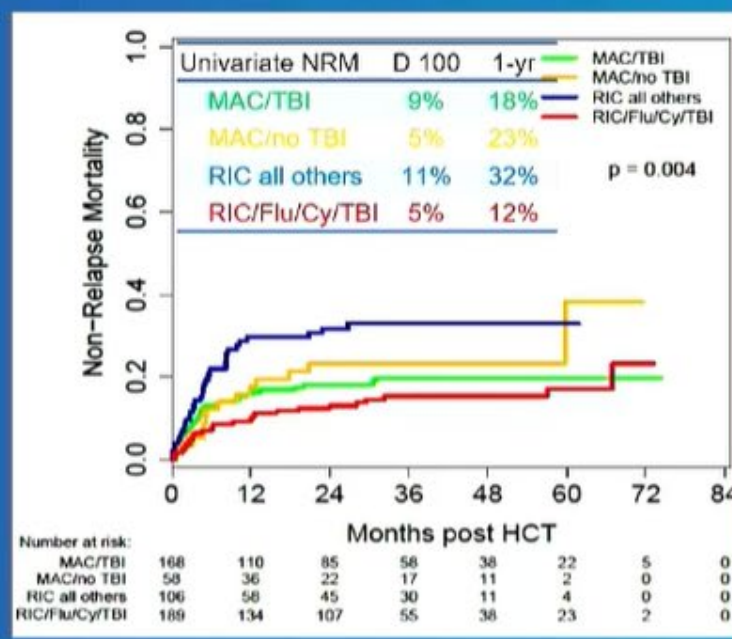
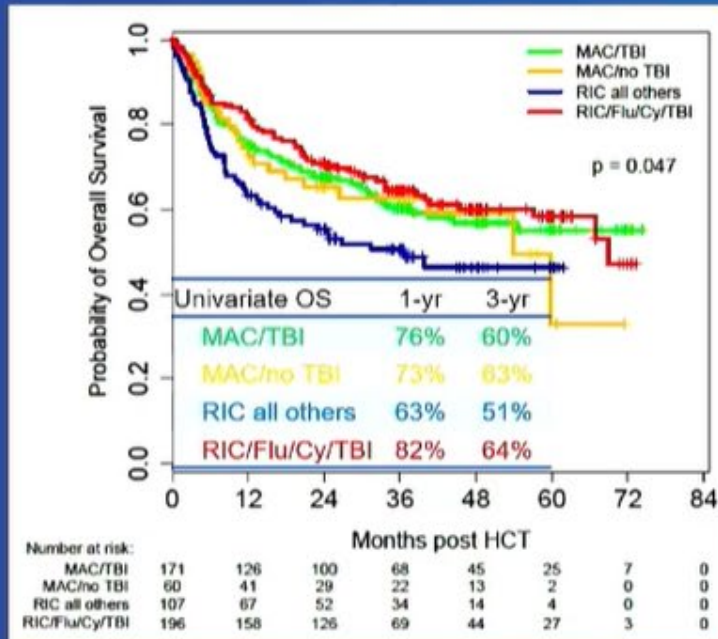
ALL > 40 Years: Flu/ Cy/ TBI is Associated With Superior OS Compared to Other Regimens



RIC/Flu/Cy/TBI 0.57 (0.38, 0.85) 0.006

RIC/Flu/Cy/TBI 0.50 (0.26, 0.95) 0.034

ALL > 40 Years: Flu/ Cy/ TBI is Associated With Superior OS Compared to Other Regimens



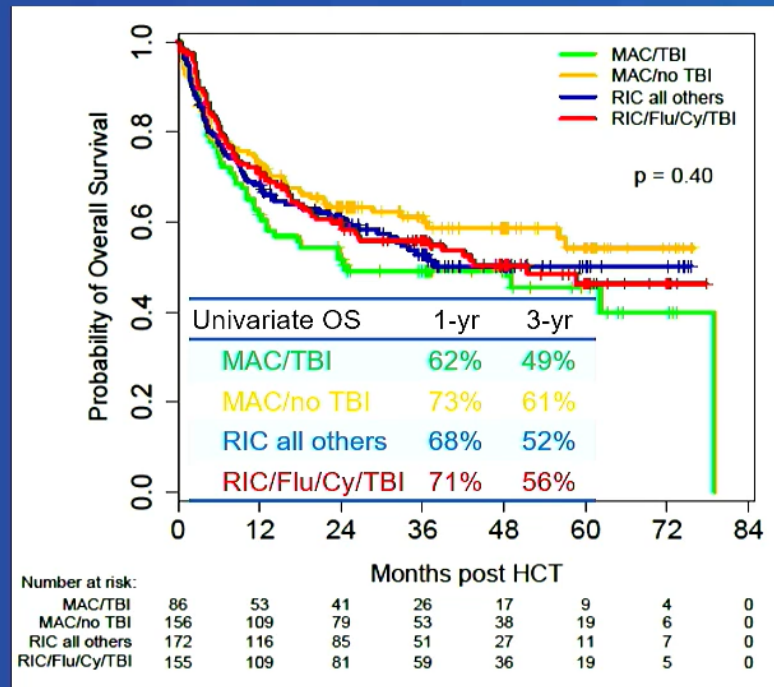
RIC/Flu/Cy/TBI 0.57 (0.38, 0.85) 0.006

RIC/Flu/Cy/TBI 0.50 (0.26, 0.95) 0.034

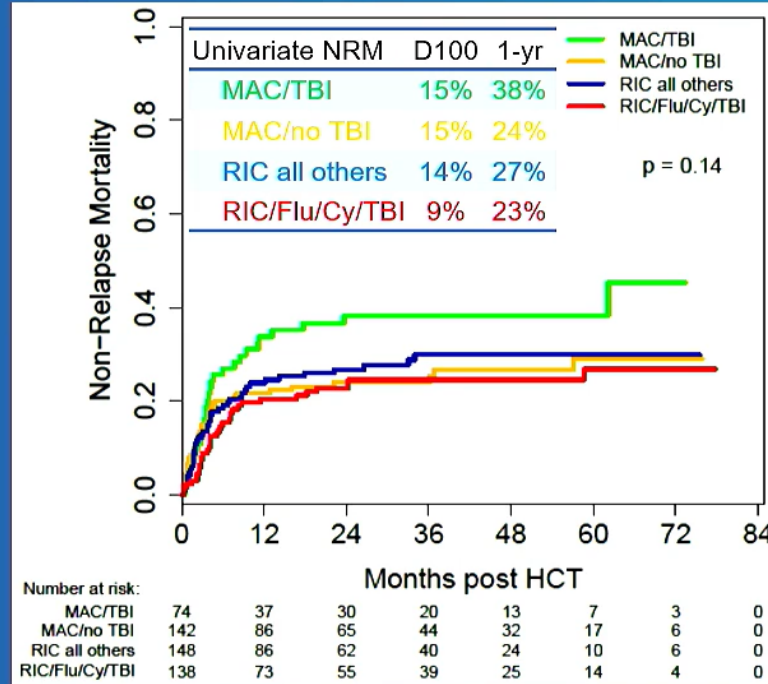
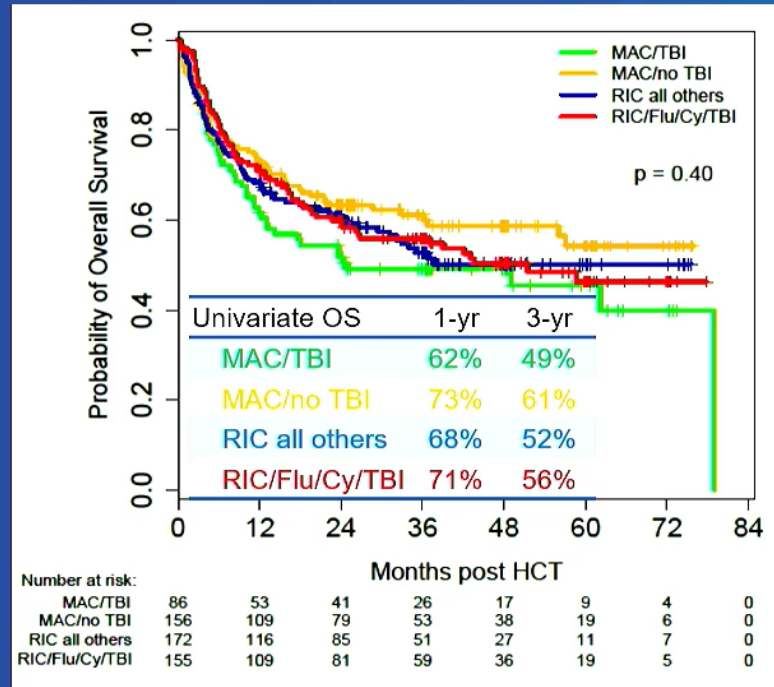
MPN/ MDS



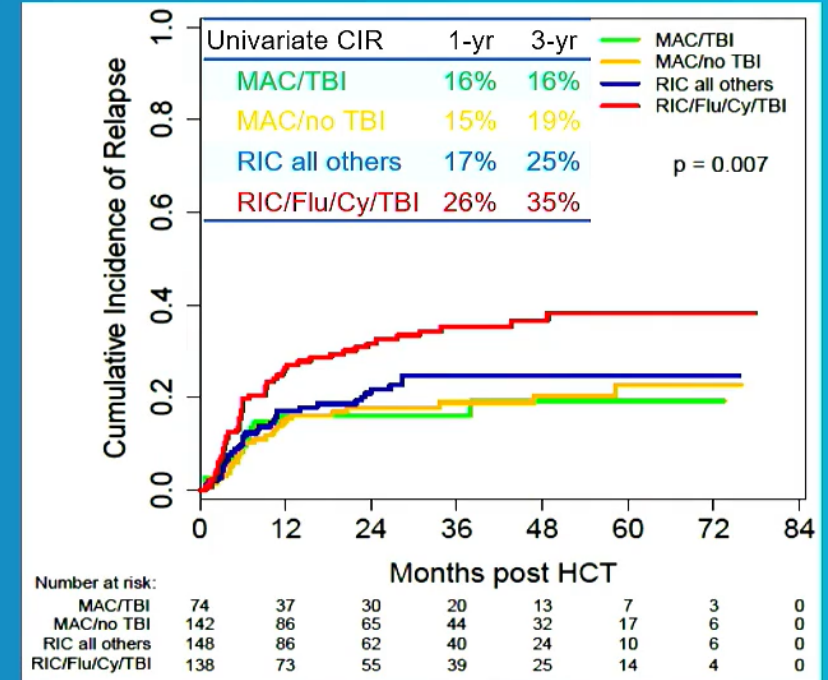
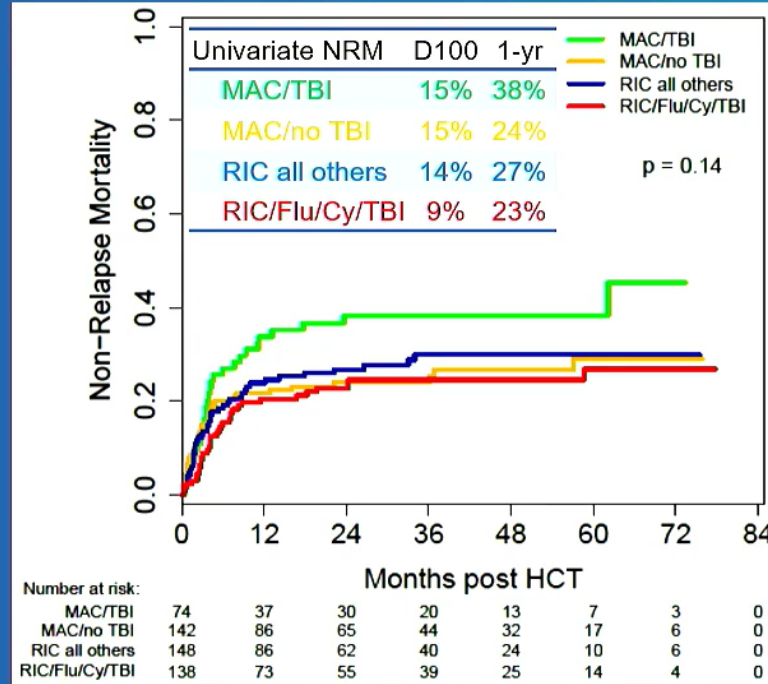
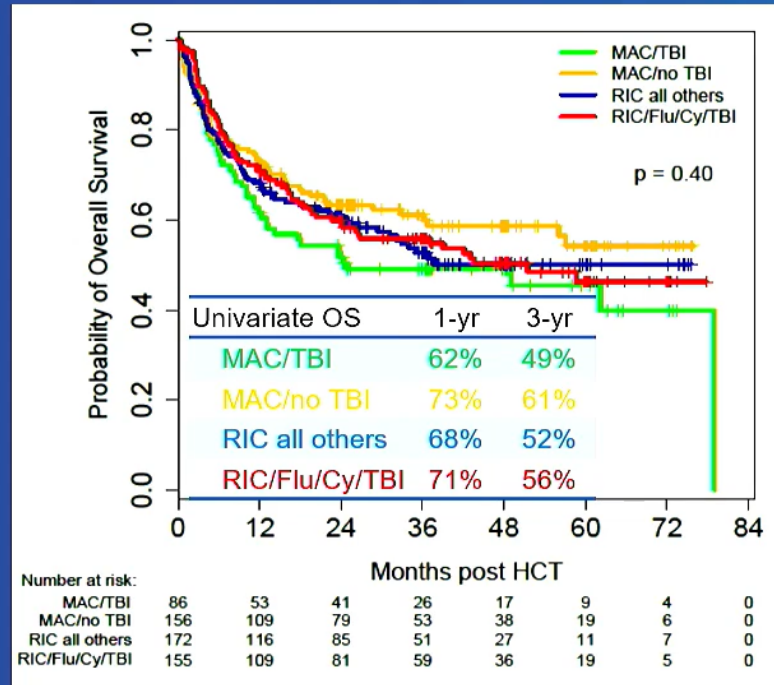
MPN/MDS ≤ 60 Years: Myeloablative Regimens Are Not Associated With Survival Advantage



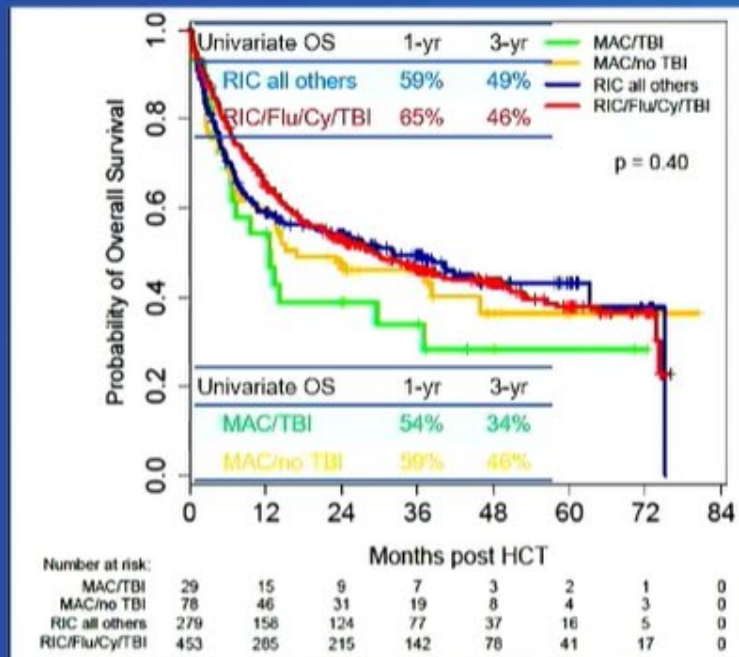
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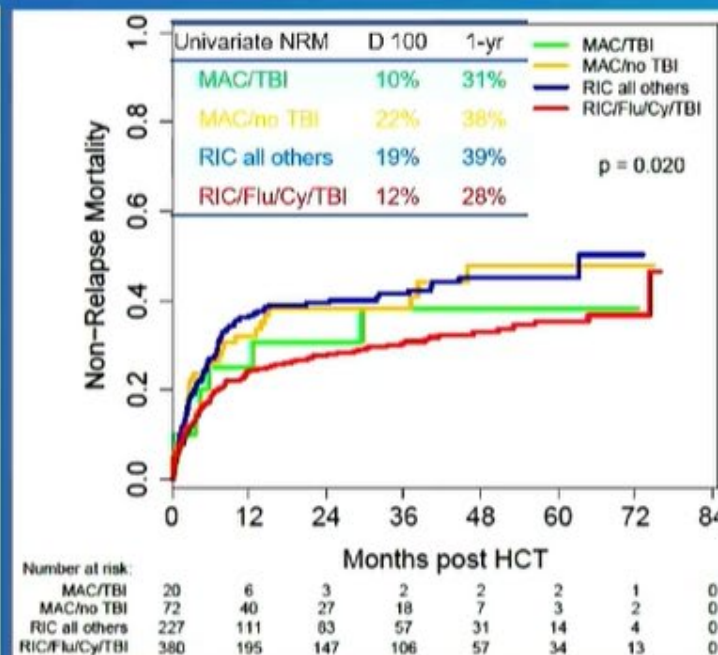
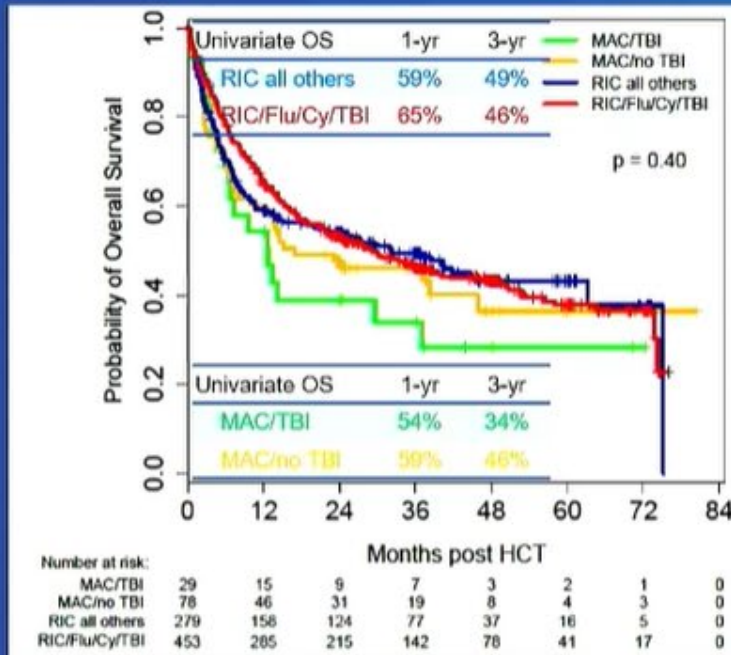


MPN/MDS > 60 Years: Reduced Intensity Regimens Show Superior OS Compared to MAC/ TBI



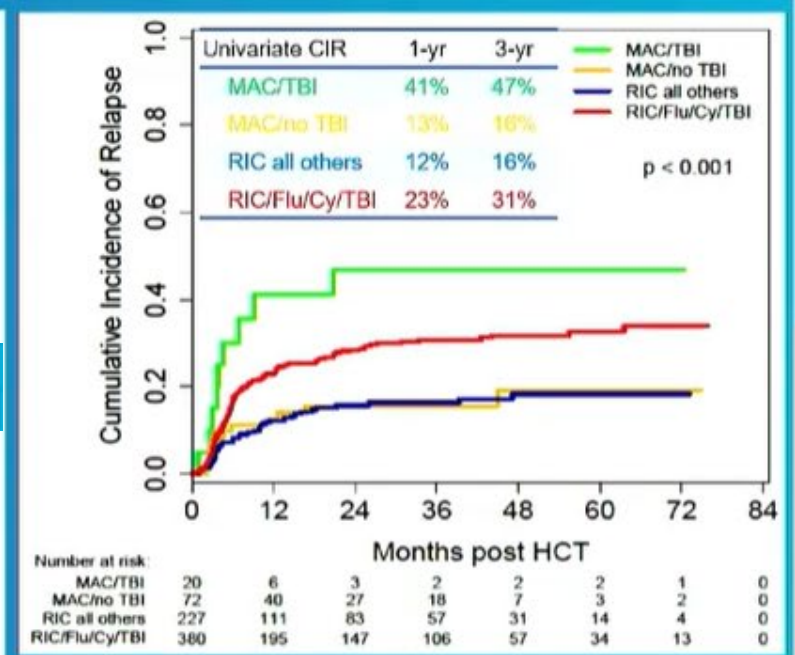
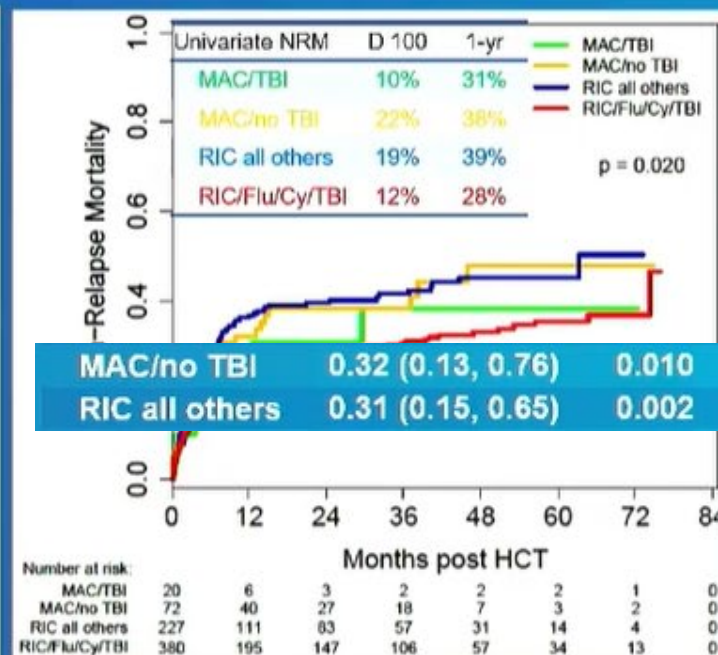
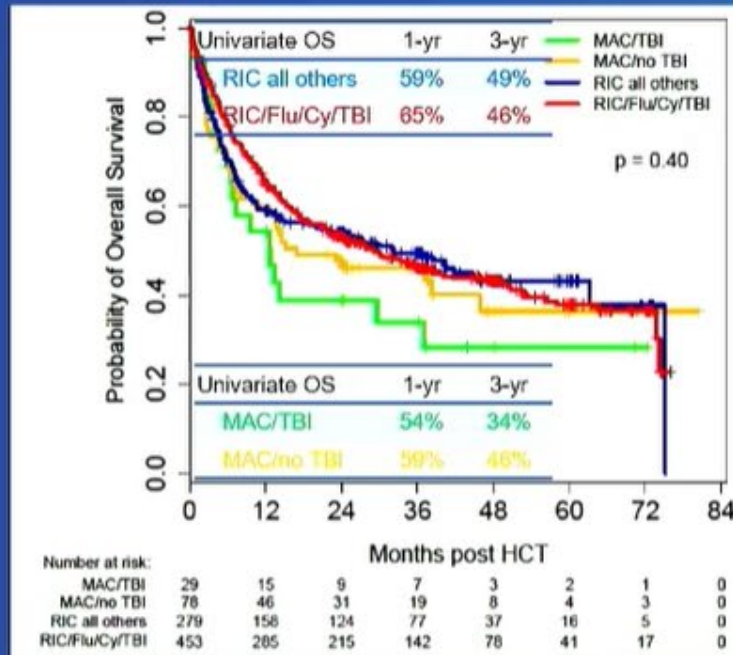
RIC all others	0.61 (0.37, 1.00)	0.049
RIC/Flu/Cy/TBI	0.60 (0.37, 0.98)	0.042

MPN/MDS > 60 Years: Reduced Intensity Regimens Show Superior OS Compared to MAC/ TBI



RIC all others	0.61 (0.37, 1.00)	0.049
RIC/Flu/Cy/TBI	0.60 (0.37, 0.98)	0.042

MPN/MDS > 60 Years: Reduced Intensity Regimens Show Superior OS Compared to MAC/ TBI



RIC all others 0.61 (0.37, 1.00) 0.049

RIC/Flu/Cy/TBI 0.60 (0.37, 0.98) 0.042

MAC/no TBI 0.32 (0.13, 0.76) 0.010

RIC all others 0.31 (0.15, 0.65) 0.002



Conclusions: No One Regimen Fits All

AML ≤ 55 J.

MAC nicht besser als RIC

RIC/Flu-Cy-TBI: niedrigste NRM (3% bei 1 J., HR 0,50; $p=0,017$). OS vergleichbar.

AML > 55 J.

MAC nicht besser als RIC

MAC/kein TBI: sign. höhere NRM (HR 2,16; $p=0,003$). Flu-Cy-TBI: bestes NRM/Rezidiv-Gleichgewicht.

MPN/MDS ≤ 60 J.

MAC nicht besser als RIC

Kein OS-Unterschied ($p=0,40$). Relapse unter RIC/andere tendenziell höher.

MPN/MDS > 60 J.

RIC klar überlegen

RIC-Regime signifikant besser als MAC/TBI (HR 0,60–0,61; $p<0,05$).

ALL ≤ 40 J.

MAC/TBI und Flu-Cy-TBI vergleichbar

Flu-Cy-TBI: niedrigste NRM (HR 0,22; $p=0,046$). Höheres Rezidivrisiko (HR 2,32; $p=0,002$).

ALL > 40 J.

Flu-Cy-TBI klar überlegen

Bestes OS: 82%/64% (1J./3J.). MVA OS HR 0,57 ($p=0,006$). Niedrigste NRM.

Post EBMT 2026 Konditionierung für allogene SZT

Christoph Faul