

ALL: PEDİATRİK REJİMLER Mİ KÖK HÜCRE NAKLİ Mİ?

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GENİŞ ÖLÇEKLİ ALL ÇALIŞMALARI: Tedavide standard yok

Çalışma	Yıl	Sayı	Yaş (medyan)	KHN	TY	Erken ölüm	Sağkalım (%/yıl)
CALGB-9111	1998	198	35 (16-83)	Ph (+)	% 85	% 8	% 41 (3)
İsveç	2002	153	42 (16-82)	PR	% 75	Ø	% 28 (5)
GIMEMA 0496	2005	450	(16-60)	Ø	% 80	Ø	% 33 (5)
Pethema ALL-93	2005	222	27 (15-50)	HR	% 82	% 6	% 34 (5)
GMALL 05/93	2001	1163	35 (15-65)	PR	% 83	Ø	% 35 (5)
LALA 94	2004	922	33 (15-55)	PR	% 84	% 5	% 36 (5)
MDACC	2004	288	40 (15-92)	Ph (+)	% 92	% 5	% 38 (5)
MRC XII/ECOG E 2993	2005	1521	(15-59)	PO	% 91	Ø	% 38 (5)
UCLA	2002	84	27 (16-59)	PR	% 93	% 1	% 47 (5)
NIGL 08/96	2001	121	35 (15-74)	PR	% 84	% 8	% 48 (5)
JALSG-ALL 93	2002	263	31 (15-59)	PO	% 78	% 6	% 30 (6)
EORTC ALL-3	2004	340	33 (14-79)	PO	% 74	Ø	% 36 (6)*
GOELAL02	2004	198	33 (15-59)	HR	% 86	% 2	% 41 (6)
GIMEMA0288	2002	767	28 (12-60)	-	% 82	% 11	% 27 (9)
LALA87	2000	572	33 (15-60)	PO	% 76	% 9	% 27 (10)
Ağırlıklı ortalama		7262			% 84	% 7	% 35

PO: Donörü olan tüm hastalara KHN; PR: Risk modeli temelinde KHN;

HR: Sadece yüksek riskli hastalara KHN; Ø: Bildirilmemiş(-): Uygulanmamış; * : Tam yanıtli olgularda sağkalım

Temel gerçekler

Uzun dönem sağkalım
Pediatrik yaş grubu: $\approx 90\%$ ¹
Erişkinler: $\approx 40\%$ ²

Erişkinler
İndüksiyon tedavisi ile CR $\approx 90\%$
Nüks $\approx 50\%$
Nüks sonrası uzun dönem sağkalım $\approx 7-10\%$ ^{3,4}

CR₁: köprüden önceki son çıkış!
En iyi konsolidasyon: KT? vs HKHN?

¹Sci Rep 2014; 4: 4227, ²Plos ONE 2014; 9: e8554

³Blood 2007; 109(3): 944-50, ⁴Haematologica 2010; 95(4): 589-96

Risk Sınıflamasında Sorunlar

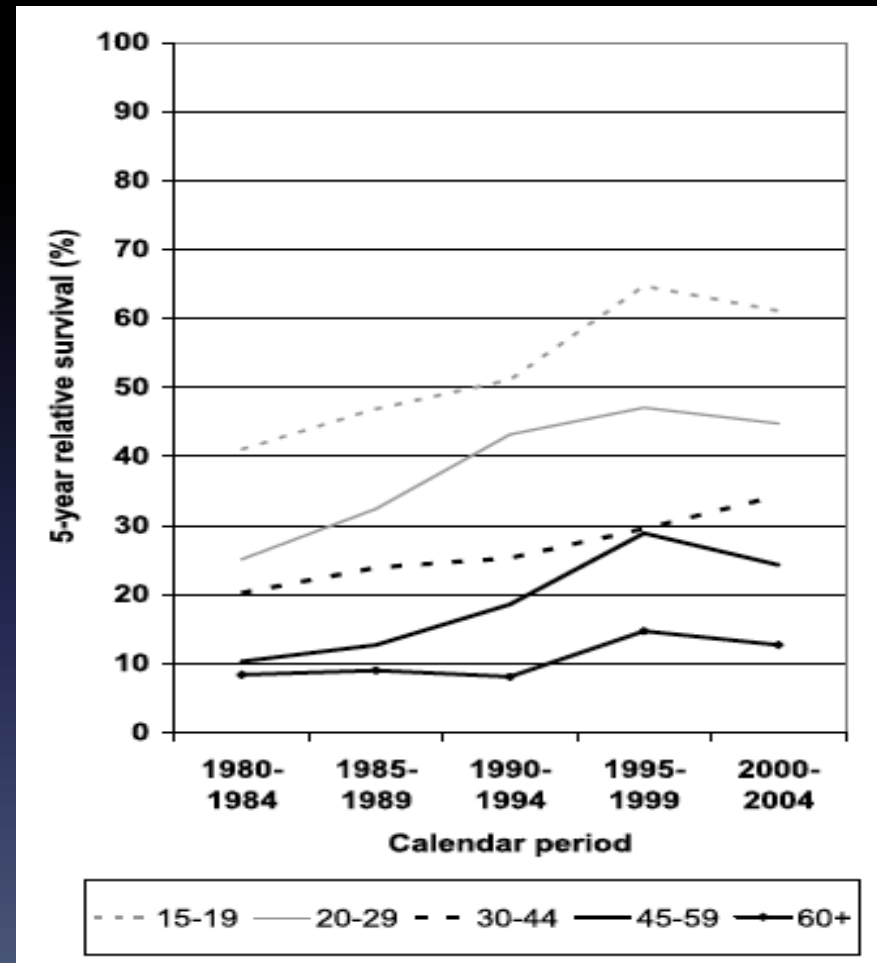
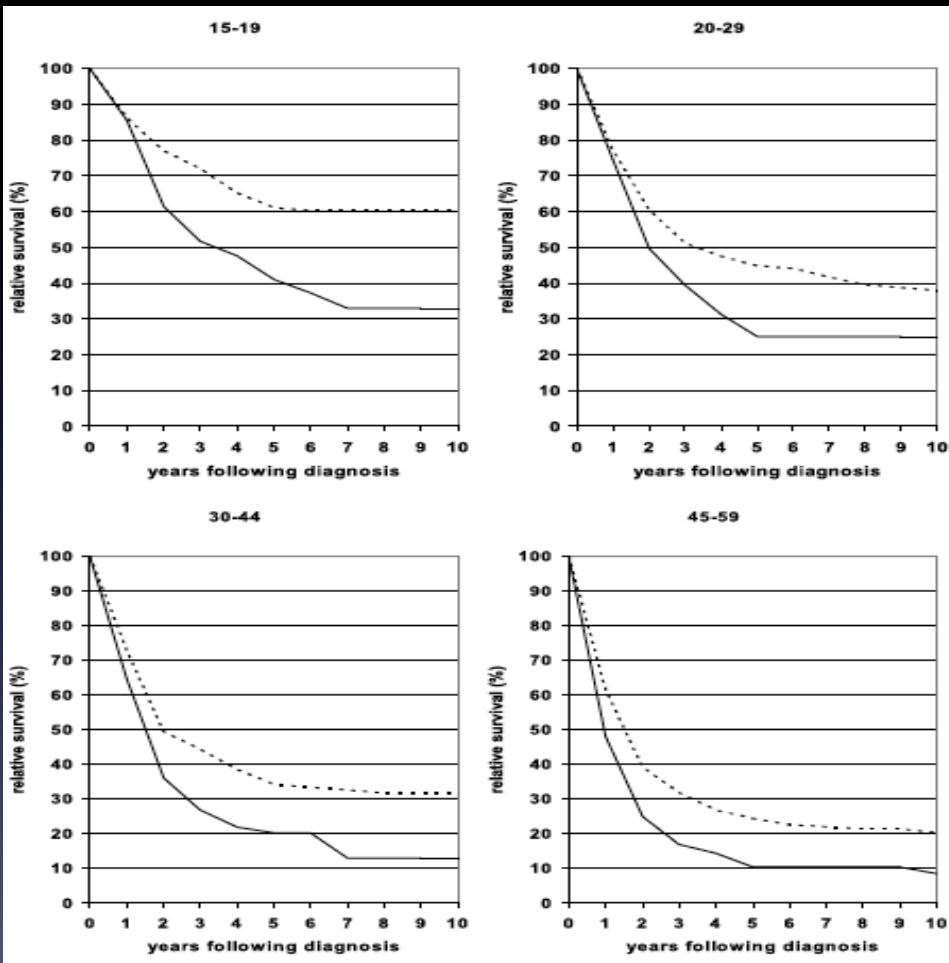
- Risk sınıflamasında standardizasyon yok.
- Birçok risk faktörünün önemi zamana ve uygulanan tedaviye göre değişebiliyor .

Study	Year	Patient No.	Age		Risk Factors					Definition of Risk Group*	OS/DFS by Risk Group
			Median	Range	Age	WBC ($\times 10^9/L$)	IM	Cytog†	Other‡		
GMALL ³	1988	368	25	15-85	> 35	> 30	BCP CD10-	—	CR > 4w	SR: 0; HR: 1-3	5-year DFS: 62% in SR v 28% in HR (P = .0001)
MSKCC ⁴	1988	199	≥ 15		> 60	> 20	BCP	Ph+	CR > 5w	SR: 0; IR: CR > 5 w plus 1 HR: > 1	5-year DFS: 61% in SR v 43% in IR v 20% in HR
CALGB ⁵	1995	197	32	16-80	> 60	> 30	—	Ph+, t(4;11)	L3, Mod-	SR: 0-1; HR: 2-4	3-year OS: 58%-100% in SR v 0%-26% in HR
GIMEMA ⁶	2002	794	27	12-60	> 30	> 50	—	Ph+	PPR	NR	8-year DFS: influx of age, WBC count and prednisone response confirmed in multivariate analysis (P < .05)
JALSG ⁷	2002	263	31	15-59	> 30	> 30	—	Ph+	—	SR: 0; IR: 1; HR: 2/Ph+	6-year OS: 53% in SR v 33% in IR v 15% in HR (P < .0001)
MDACC ¹¹	2004	288	40	15-92	—	> 50	—	Ph+	ECOG 3-4, L2, d 14 BM+	SR: 0-1; IR: 2-3; HR: > 3	5-year DFS: 52% in SR v 37% in IR v 10% in HR (P < .05)
GOELAMS ⁸	2004	215	33	15-59	> 35	> 30	BCP	Ph+, t(4;11), t(1;19)	CR > 1 c	SR: 0; HR1: 1-2; HR2: 2-3	Median DFS: 70-70.8 months in HR1 v 10.9-6.4 months in HR2 (P = 10^{-5}); SR, not reported
LALA ¹²	2004	922	33	15-55	—	> 30	Myeloid marker	Ph+, t(4;11), 11q23, t(1;19)	CR > 1c, CNS+	SR: 0; HR: ≥ 1 Ph+ CNS+	5-year DFS: 35% in SR v 30% in HR v 20% in Ph+ v 41% in CNS+; in multivariate analysis age > 35 (P = .01), and lack of day 8 response (P = .02) were significant risk factors
PETHEMA ⁹	2005	222	27	15-50	30-50	> 25	—	Ph+, t(4;11), 11q23, t(1;19)	—	SR: 0; HR: ≥ 1	5-year DFS: 35% in SR, not reported
MRC-ECOG ¹⁰	2008	1,913	NR	15-64	> 35	> 30 (BCP), > 100 (TCP)	—	Ph+	—	SR: 0; HR: ≥ 1	5-year OS by donor v no donor analysis in Ph-negative: 62% v 52% in SR (P = .02), 41% v 35% in HR (P = .2)
GRAALL ¹³	2008	225	31	15-60	—	> 30 (BCP)	—	Ph+, t(4;11), t(1;19), lo-hypo, near-tr	CR > 1c, PPR, d8 BM+, CNS+	SR: 0; HR: ≥ 1	3.5-year DFS: 68% in SR v 52% in HR (P = .05)
HOVON ¹⁴	2009	433	NR		—	> 30 (BCP), > 100 (TCP)	—	Ph+, t(4;11), t(1;19)	CR > 4w	SR: 0; HR: ≥ 1	5-year OS: 50% in SR v 30% in HR (P < .001)
GMALL ^{15,16}	2006, 2007	713	34	15-55	—	> 30 (BCP)	pro-B, early/mature T	Ph+, t(4;11)	CR > 3w	SR: 0; MRD-HR: ≥ 1, MRD+ VHR: Ph+	5-year survival of CR patients: 59% in SR v 55% in HR v 49% in VHR; 3-year DFS in SR by MRD: 100% in MRD- v 53% in MRD± v 6% in MRD+ (P < .001)
Prospective MRD evaluation in SR											
NILG ¹⁷	2009	280	38	16-66	—	> 30 (BCP) > 100 (TCP)	pro-B, early/mature T	Ph+, t(4;11), adverse	CR > 1c	SR: MRD-HR: MRD+VHR: Ph+, t(4;11)+	5-year OS: 49% in SR v 27% in HR v 24% in VHR (P = .0005); 5-year DFS by MRD: 72% in MRD- v 14% in MRD+ (P = .001)
Prospective MRD evaluation in SR and HR											

20 yılda ne değişti? SEER: 1980-1984 vs 2000-2004 NIH, Surveillance, Epidemiology, and End Results Program

Relative survival by patient group (age or sex)	1980-1984		2000-2004		Increase*	P†
	PE	SE	PE	SE		
5-year						
All	21.5	2.0	33.2	1.8	+11.7	< .001
15-19	41.0	4.9	61.1	4.4	+20.1	.001
20-29	25.1	4.8	44.8	4.7	+19.7	.003
30-44	20.2	4.8	34.3	3.9	+14.1	.002
45-59	10.3	4.9	24.3	3.4	+14.0	.001
≥ 60	8.4	3.4	12.7	2.9	+4.3	.48
Male	23.1	2.6	31.9	2.3	+8.8	< .001
Female	19.1	3.2	35.3	2.8	+16.2	.001
10-year						
All	17.4	2.3	29.9	1.8	+12.5	< .001
15-19	33.0	4.9	60.4	4.4	+27.4	< .001
20-29	25.1	4.8	38.0	4.5	+12.9	.005
30-44	13.0	5.1	31.7	4.0	+18.7	< .001
45-59	8.4	4.4	20.2	3.4	+11.8	.001
≥ 60	5.1	3.9	9.3	2.8	+4.2	.49
Male	18.3	3.2	29.3	2.3	+11.0	< .001
Female	16.0	3.1	30.2	2.9	+14.2	.001

En büyük kazanım: genç erişkinler



ADOLESAN GRUPTA TEDAVİ PEDIATRİK vs ERİŞKİN PROTOKOLLER

ÇALIŞMA	YAŞ	SAYI	TY (%)	SK (%) (yıl)
CCG (P)	16-20	197	90	63 (7)
CALGB (E)		124	90	34 (7)
FRALLE93 (P)	15-20	77	94	67 (5)
LALA94 (E)		100	83	41 (5)
DCOG (P)	15-18	47	98	69 (5)
HOVON (E)		44	91	34 (5)
ALL97 (P)	15-17	61	98	65 (5)
UKALLXII (E)		67	94	49 (5)
AIEOP (P)	14-18	150	94	80 (2)
GIMEMA (E)		95	89	71 (2)

(1) Blood 2008; 112: 1646-54; (2) J Clin Oncol. 2003;21:774-780; (3) Leukemia 2004; 18: 2032-2035; (4) Pediatr Blood Cancer 2006; 47: 748-56; (5) Blood. 2004;104:1954a.

AYA (Adolescent and Young Adult)

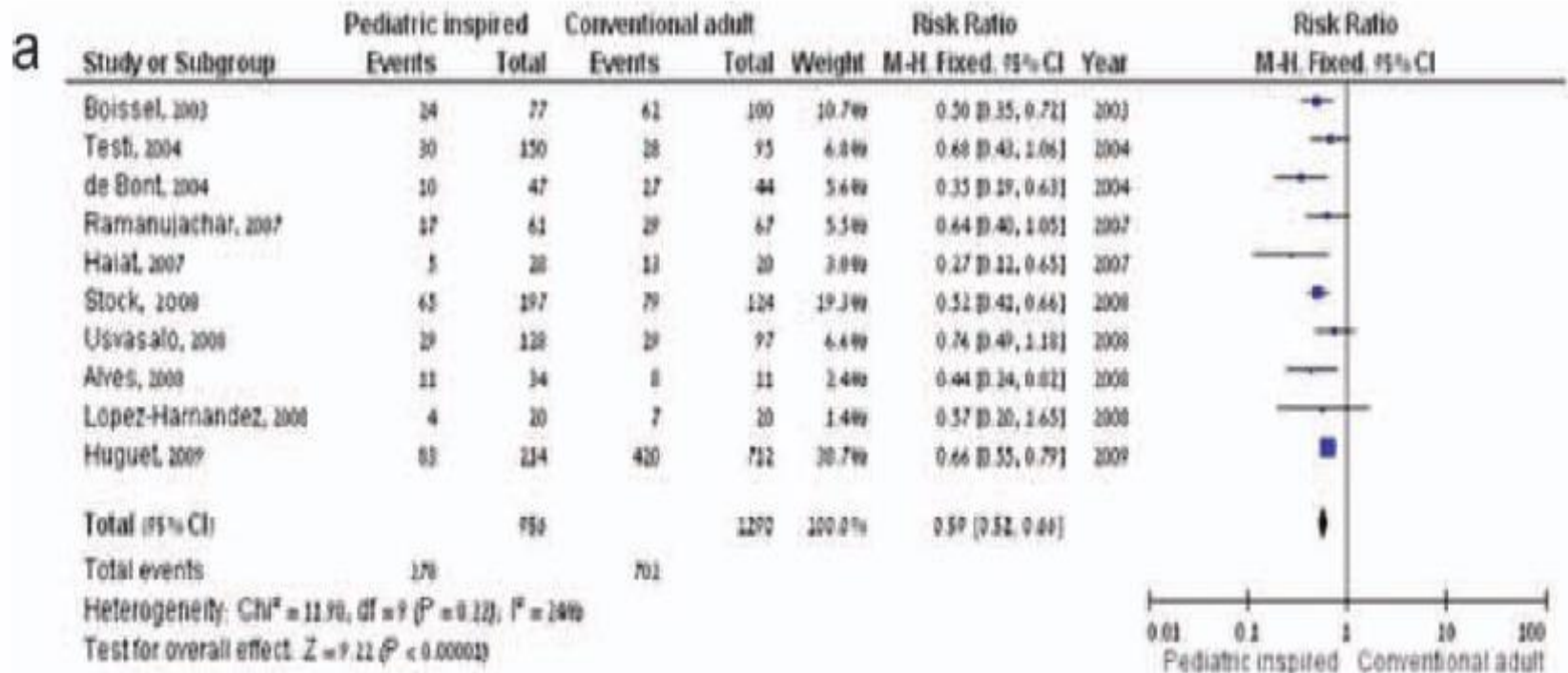
- 15-20 yaş grubu
- Pediatrik vs erişkin protokoller
- EFS (5 yıl): %63-74 vs %34-49
- 5 çalışmanın ağırlıklı ortalaması
- ✓ n: 776
- ✓ Pediatrik protokoller ile %27 EFS avantajı

Cancer 2006; 107: 1551-61
Leukemia 2004; 18: 2032-35
Blood 2008; 112: 1646-54
J Clin Oncol 2003; 21: 774-80
Pediatr Blood Cancer 2007; 48(3): 254-61

Adolescents and young adults with acute lymphoblastic leukemia have a better outcome when treated with pediatric-inspired regimens: Systematic review and meta-analysis

Ron Ram,^{1,2*} Ofir Wolach,^{1,2} Liat Vidal,^{1,2} Anat Gafter-Gvili,^{1,2} Ofer Shpilberg,^{1,2} and Pia Raanani^{1,2}

11 çalışma, 2489 AYA-ALL
8/11 çalışmada üst yaş sınırı 26



AYA ALL: Metanaliz

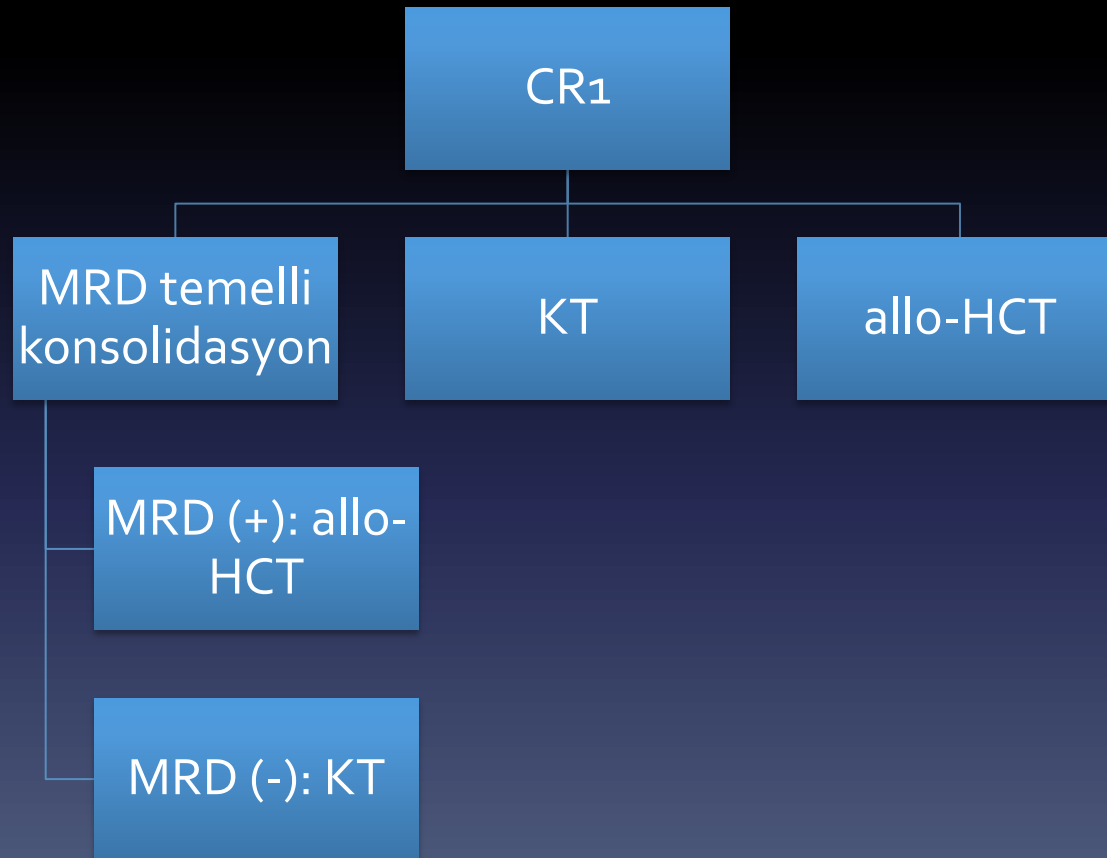
- 11 çalışma
- 2489 hasta
- Pediatrik protokoller ile EFS artıyor (RR 1.66)
- 8/11 çalışma: üst yaş limiti < 26
- Çıkarımlar özellikle < 20 yaş grubu için geçerli

Table 1 Recent studies using pediatric-based regimens in adult ALL patients.

Study	Risk group	Age range	n	OS (%)
PETHEMA ALL-96 ^[24]	Ph- SR	15-30	81	69 (6-year)
GRAALL-2003 ^[25]	Ph- SR/HR	15-60	225	60 (42-month)
USC ^[26]	SR(33%)/HR(67%) Ph+ (22%)	18-57	51	51 (7-year)
CALGB 10403 ^{[27]*}	Ph-	17-39	296	66 (2-year)
DFCI ^[28]	SR(45%)/HR(55%) Ph+ (20%)	18-50	92	67 (4-year)

*: the study is ongoing, final results not published yet; HR: high-risk; SR: standard-risk.

CR₁ sonrası konsolidasyon seçenekleri



MRD:en önemli faktör?

Study	Year	No. Evaluable/ Studied (%)	Risk Subsets	MRD Study*	Survival/DFS of MRD Negative v Positive; Study Conclusions
Retrospective/descriptive MRD analysis					
MRC ³²	2010	161/NR	SR/HR BCP	RQ-PCR; $< 10^{-4}$ at 1-9 months	DFS 74% v 30% at 5 years ($P = .002$) MRD at end of phase II induction best predictor of relapse ($P = .0002$) HSCT partially active in MRD-positive
PALG ³¹	2008	116/132 (87.8%)	SR/HR BCP/TCP	IF; $< 0.1\%$ at end of induction	DFS 61% v 17% at 3 years ($P = .0002$) MRD best predictor of relapse ($P < .001$), higher value in SR and BCP
GRAALL ⁴³	2009	212/507 (41.8%)	SR/HR BCP/TCP	RQ-PCR; $< 10^{-4}$ at end of induction/1 st consolidation	DFS 82% at 3 years (84% after HSCT censoring) v relapse rate 56% ($P < .001$) MRD best predictor of relapse ($P < .001$) HSCT not needed in MRD negative, partially active in MRD positive
Prospective MRD analysis for therapy optimization†					
GMALL ^{16,44}	2006, 2009	479/NR	SR/HR BCP/TCP	RQ-PCR; negative/ $<10^{-4}$ at end of induction I-II and 1 st consolidation	SR: survival 67% v 38% at 5 years ($P < .001$) HR: survival 66% v 42% at 5 years ($P = .003$) MRD negative at days 11 and 24 (relapse risk 0%) v MRD positive until week 16 (relapse risk 94%) HSCT not needed in SR MRD negative and partially active in SR/HR MRD positive
NILG ¹⁷	2009	223/253 (88.1%)	SR/HR BCP/TCP	RQ-PCR; $< 10^{-4}$ at week 16, negative at week 22	DFS 72% v 14% at 5 years ($P = .0000$) MRD at weeks 10 to 22 best predictor of relapse ($P < .0001$) HSCT not needed in MRD negative and partially active in MRD positive
PETHEMA ⁴²	2009	156/202 (77.2%)	HR BCP/TCP	IF; $< 0.1\%$ at end of consolidation	DFS 54% at 4 years v 31% at 2 years ($P = .043$) MRD best predictor of relapse ($P = .007$) HSCT not needed in MRD negative and partially active in MRD positive

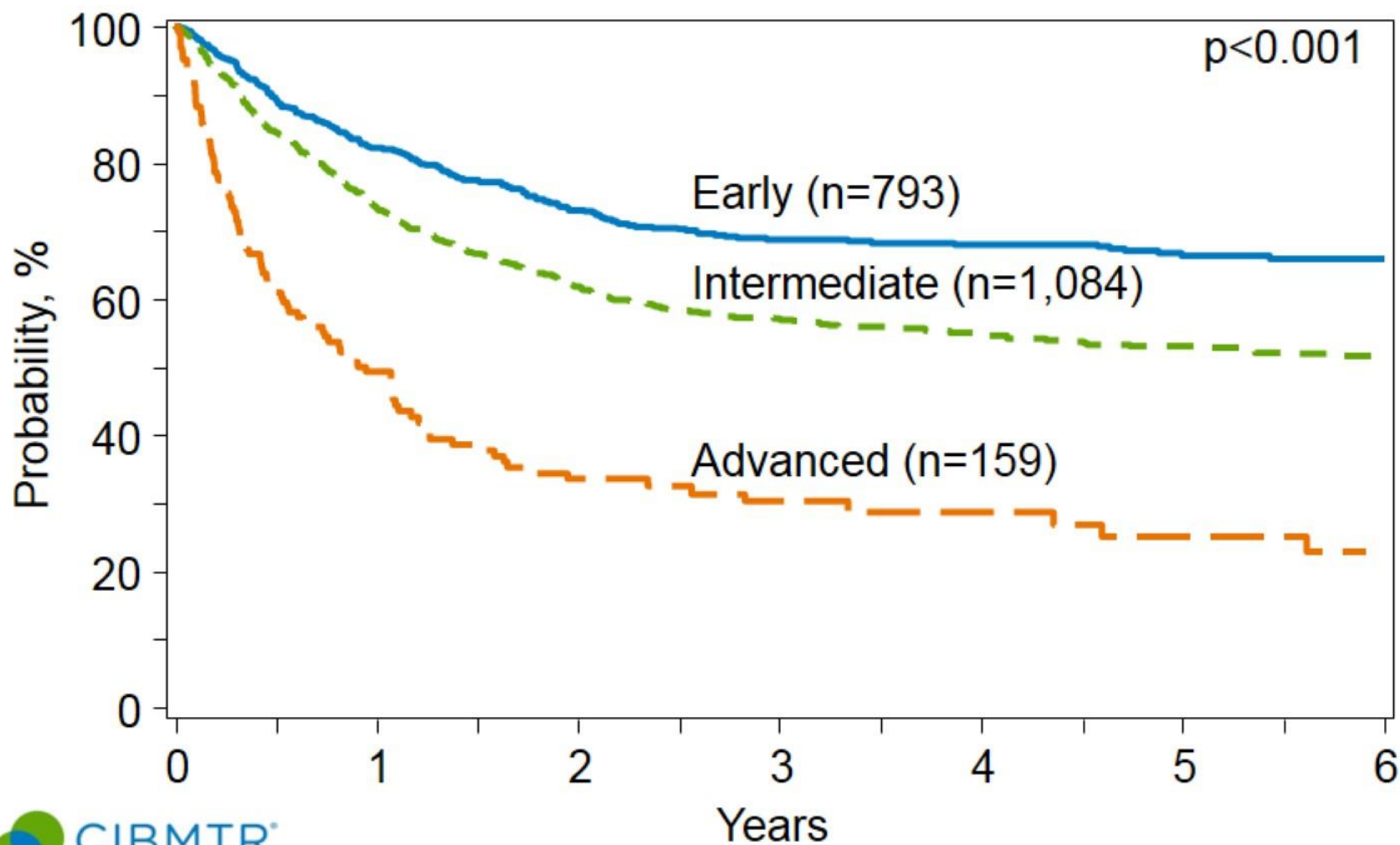
ALL: MRD

- Pediatrik/erişkin ALL: bağımsız prognostik önemi var
- HCT öncesi ve sonrası prognozu belirliyor
- Sorunlar:
 - ✓ Yöntem (PCR/MFCM)
 - ✓ Ulaşılabilirlik
 - ✓ Standardizasyon
 - ✓ Zamanlama
 - ✓ MRD temelli yaklaşım

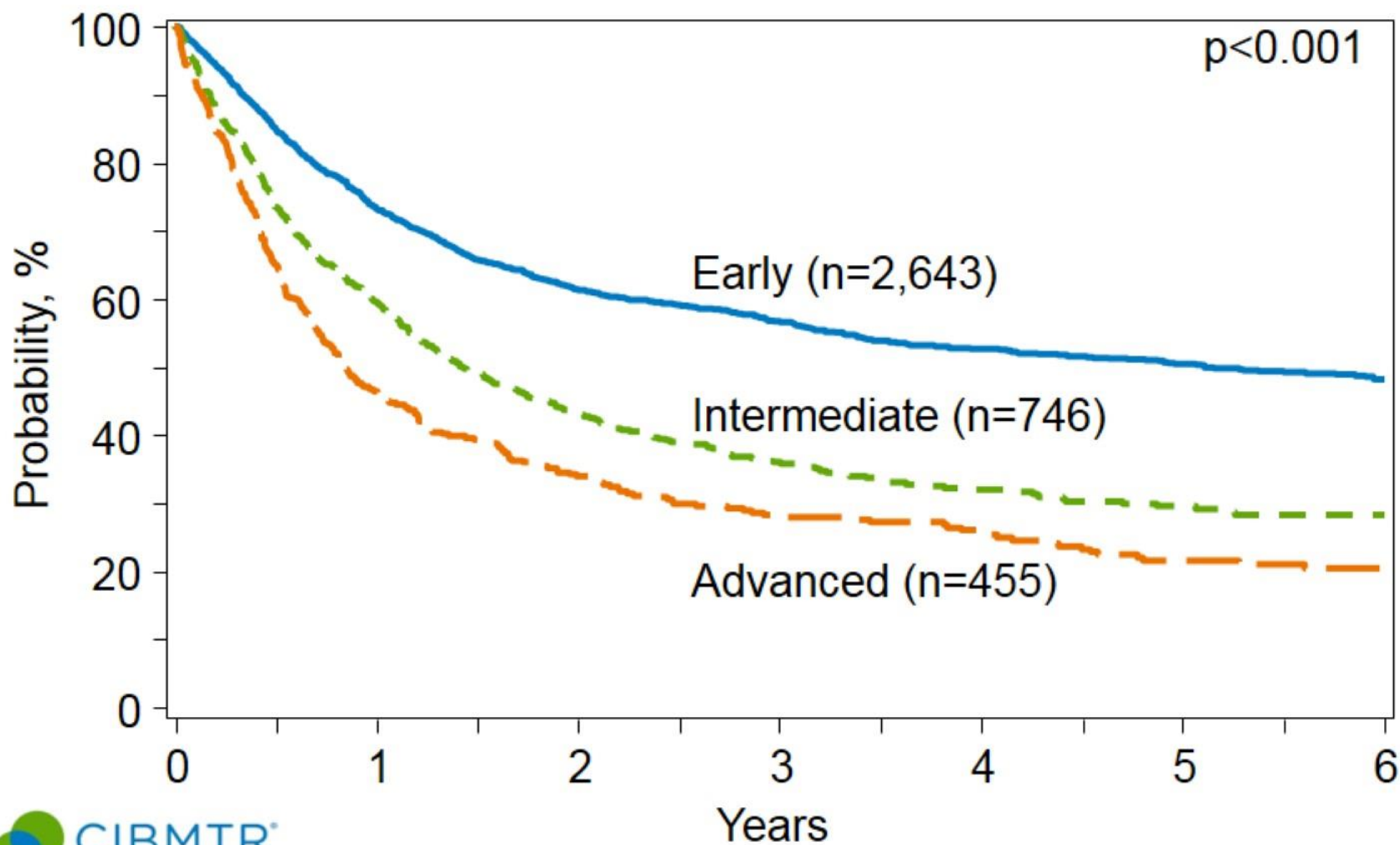
Ph- ALL CR₁: KİME ALLO-HKHN YAPALIM?

- Herkese yapalım?
- Sadece yüksek riskli hastalara yapalım?
- MRD+ olan hastalara yapalım?

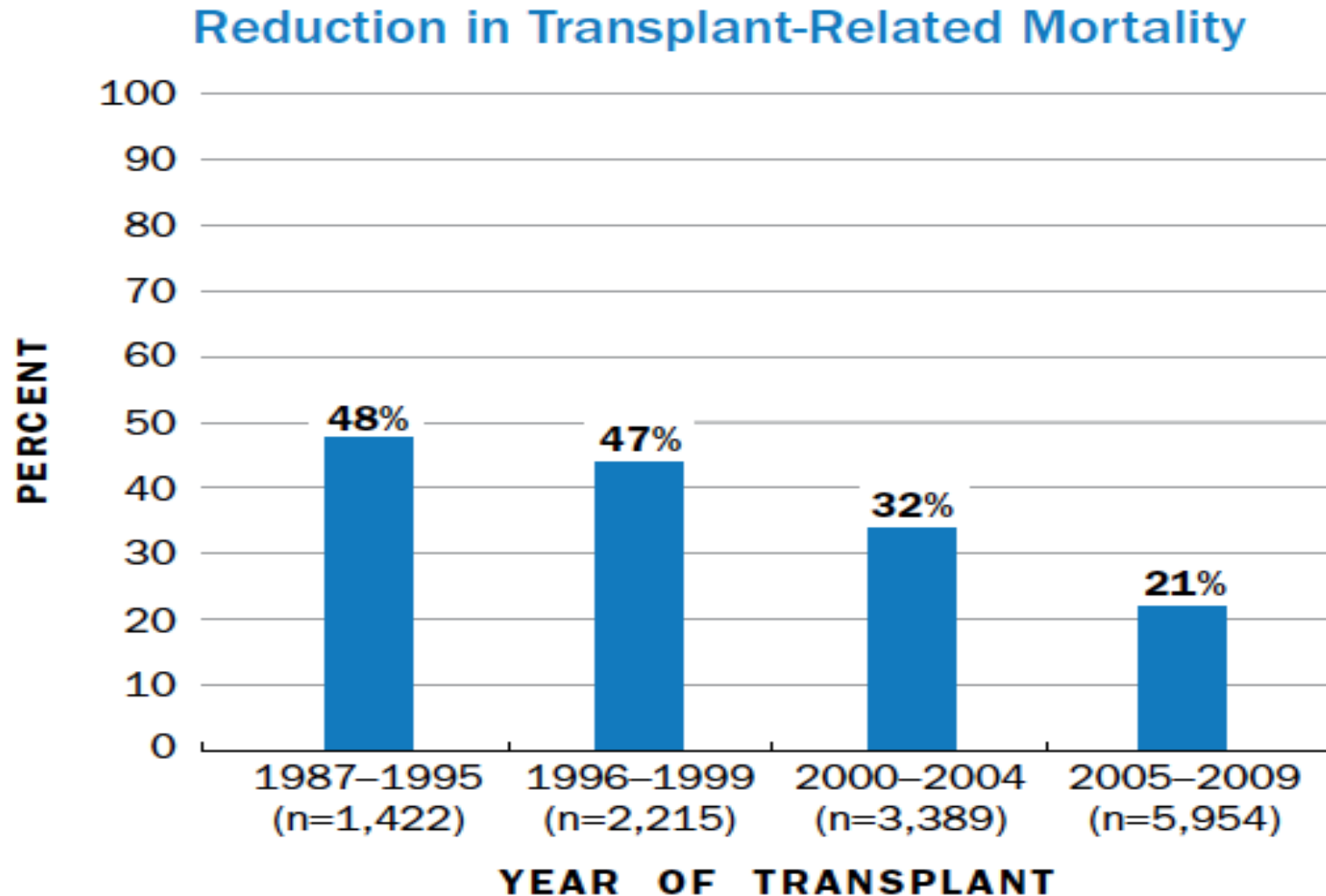
Survival after HLA Match Sibling Donor Transplants for ALL, Age <20 Years, 2003-2013



Survival after HLA Match Sibling Donor Transplants for ALL, Age ≥ 20 Years, 2003-2013



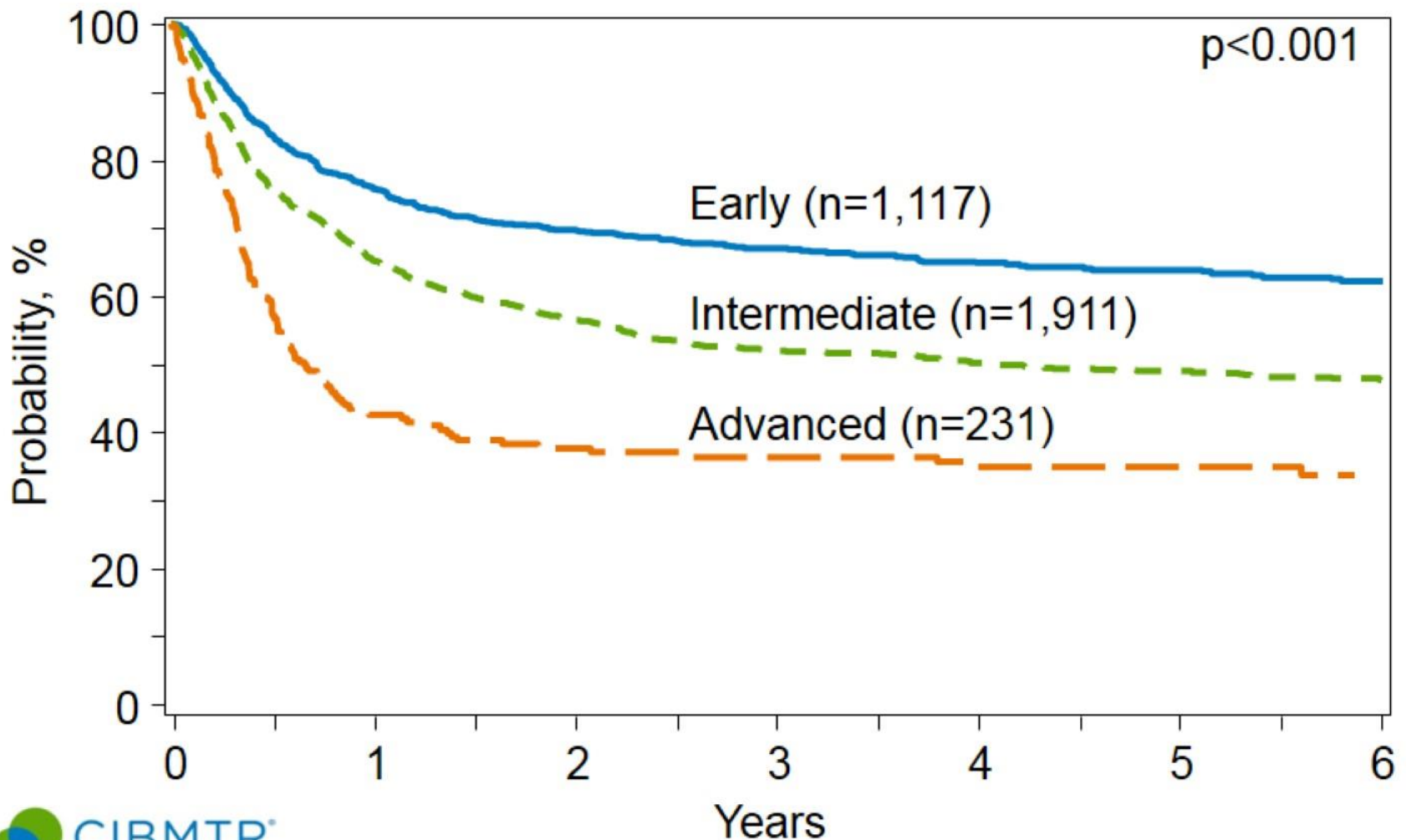
AKRABA DIŞI ALLO-HKHN: TRM AZALIYOR



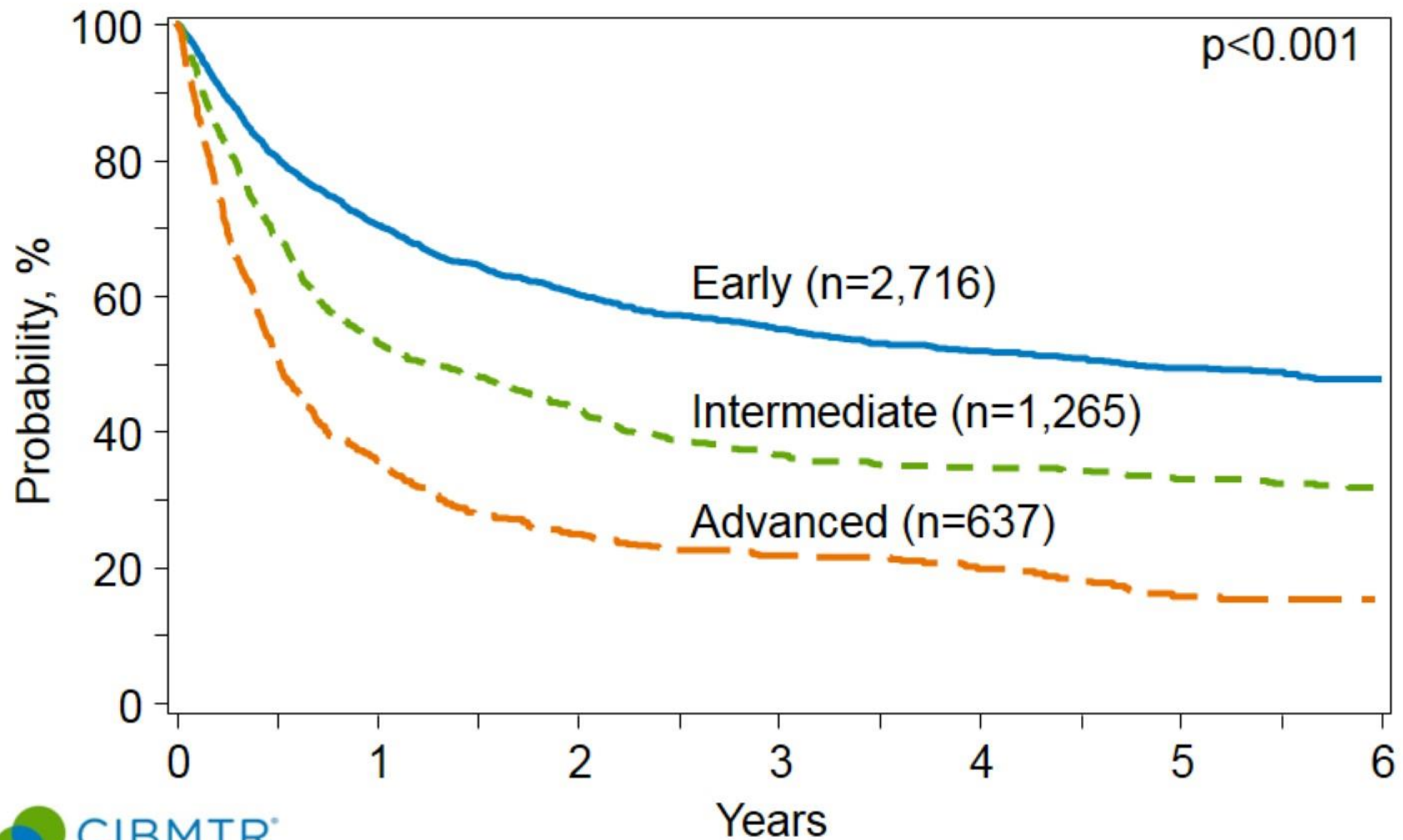
AKRABA DIŐI ALLO-HKHN SONUÇLARI İYİLEŐİYOR

Improved Survival with Unrelated Transplantation		
REPORT YEAR	TRANSPLANT PERIOD	ONE-YEAR SURVIVAL
2011	2007 – 2009	60.3%
2010	2004 – 2008	57.9%
2009	2003 – 2007	56.3%
2008	2002 – 2006	54.0%
2007	2001 – 2005	51.5%
2006	2000 – 2004	48.5%
2003	1996 – 2001	42.2%

Survival after Unrelated Donor Transplants for ALL, Age <20 years, 2003-2013



Survival after Unrelated Donor Transplants for ALL, ≥ 20 Years, 2003-2013





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journal homepage: www.elsevier.com/locate/transci



Retrospective analysis of adult patients with acute lymphoblastic leukemia undergoing allogeneic hematopoietic cell transplantation: A multicenter experience of daily practice



Emre Tekgündüz ^{a,*}, Leylagül Kaynar ^b, Hakan Göker ^c, Ali Hakan Kaya ^a,
Esra Ermiş Turak ^b, Eylem Eliaçık ^c, Ömür Kayıkçı ^a, Mustafa Çetin ^b,
Yahya Büyükaşık ^c, Bülent Eser ^b, Fevzi Altuntaş ^{a,d}

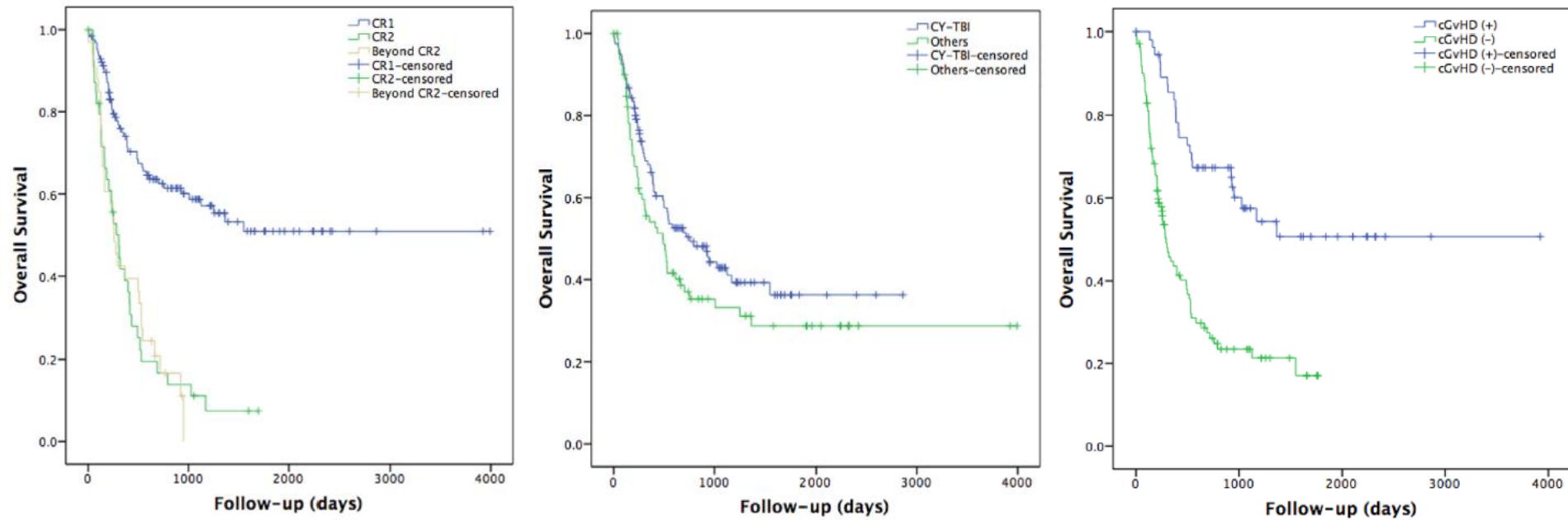
n: 205

medyan yaş 28 (18-59)

Ph⁻ ALL (n:153) - Ph⁺ ALL (n:52)

%79 yüksek risk-%21 standard risk

Çoklu değişken analizinde sağkalım üzerine etkili faktörler



OS (3 yıl): %45.6

Metaanaliz: Erişkin ALL hastalarında Allo-HKHN CR1- genetik randomizasyon

- 7 çalışma, 1274 hasta
- Donör (+) → allo; donör (-): otolog HKHN /KT
- 4 çalışma: sadece YR hastalar
- 1 çalışma: MUD
- Önerilen tedaviye uyum:
allo-HKHN % 68-96; otolog HKHN: % 9-81
- Tüm hastalar: allo-HKHN OS↑ (HR: 1.29; p: 0.037)
- YR hastalar: allo-HKHN OS↑ (HR: 1.42; p: 0.019)
- Otolog HKHN faydasız

Table 2 Large trials in adult ALL: MSD allo-HCT vs autograft/chemotherapy.

Study group	Patients	Age range	OS (%) 5-year	<i>p</i>
PETHEMA ^[32]	(Ph-) HR <i>n</i> : 156	15-50	49% (no donor) 40% (donor)	0.56
MRC- ECOG ^[33]	Ph- <i>n</i> : 1031	15-64	HR: 41% (donor) 35% (no donor) SR: 62% (donor) 52% (no donor)	0.2 0.02
HOVON ^[34]	donor: HR 48%; Ph+ 22% no donor: HR 45%; Ph+ 16%	15-55	HR: 53% (donor) 41% (no donor) SR: 69% (donor) 49% (no donor)	0.5 0.05
JALSG ^[35]	<i>n</i> : 257 Ph- <i>n</i> : 641	15-54	HR*: 38% (HCT) 25% (chemotherapy) SR*: 53.8% (HCT) 39.8% (chemotherapy)	NR

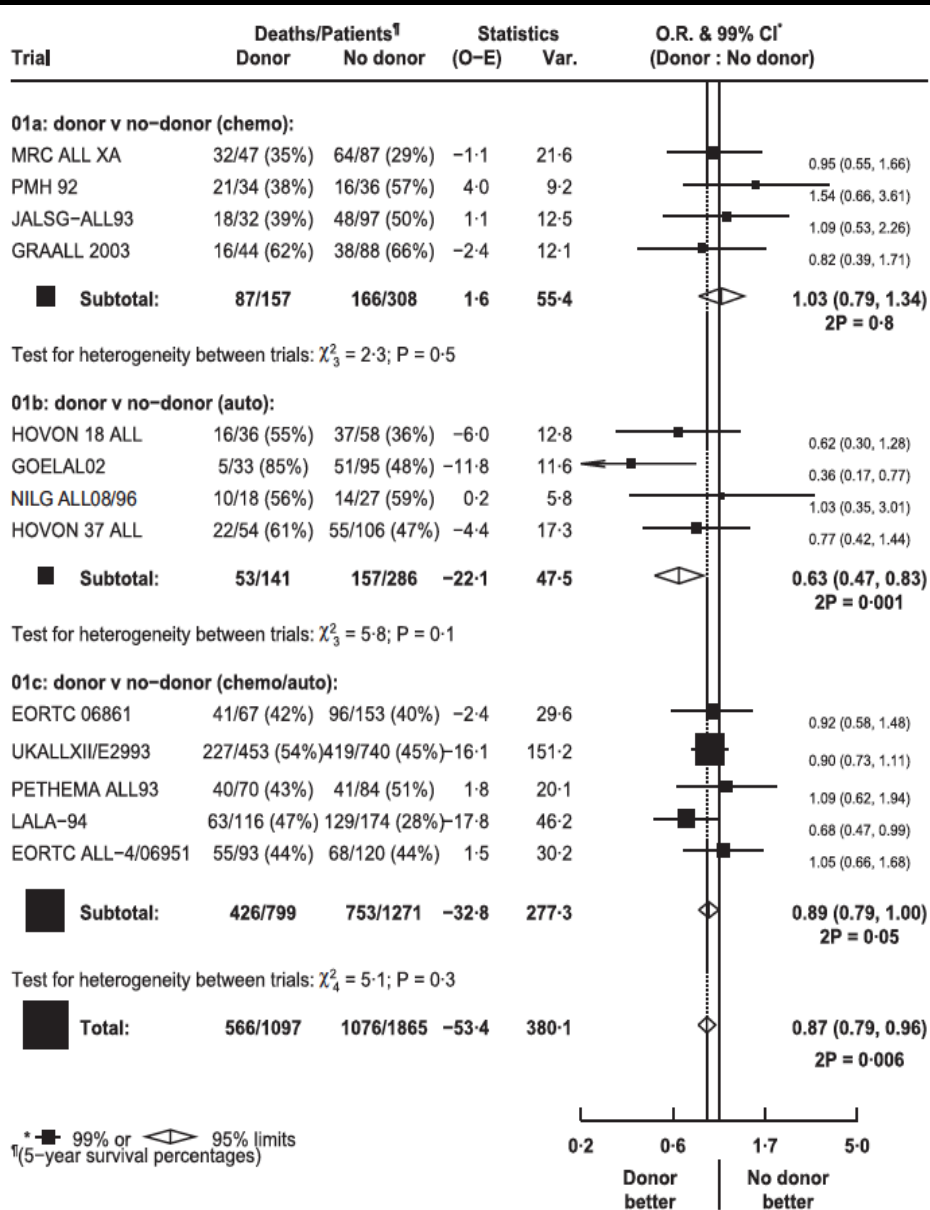
*: Results indicate 10-year survival probabilities; NR: not reported, MSD: matched-sibling donor; Statistically significant *p* values are presented in bold.

Allogeneic, but not autologous, hematopoietic cell transplantation improves survival only among younger adults with acute lymphoblastic leukemia in first remission: an individual patient data meta-analysis

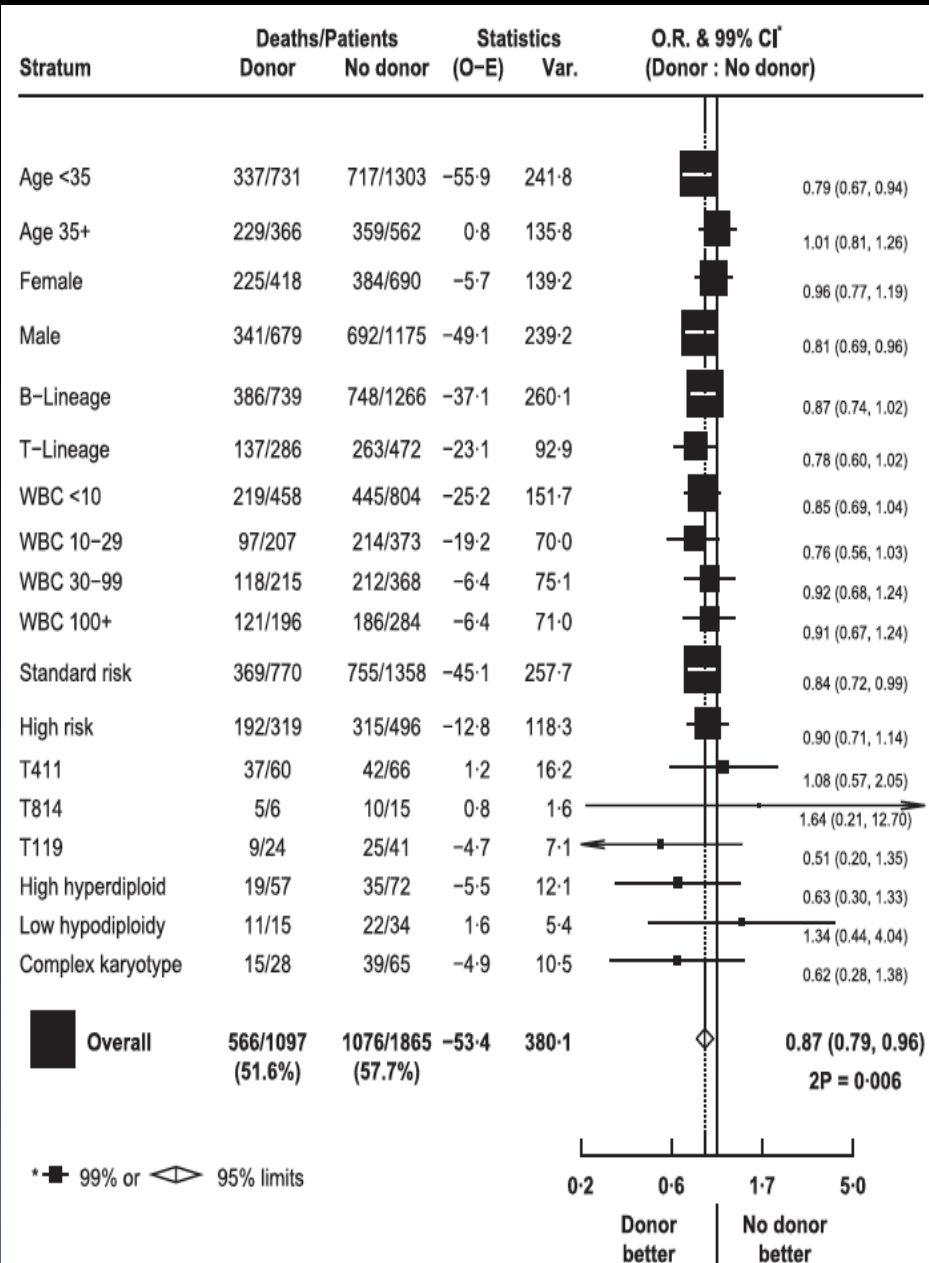
Vikas Gupta,¹ Sue Richards,² and Jacob Rowe,³ on behalf of the Acute Leukemia Stem Cell Transplantation Trialists' Collaborative Group

Metaanaliz
Ph- ALL
13 çalışma
n: 2962

Genel Sağkalım



Test for heterogeneity (13 trials): $\chi^2_{12} = 19.9$; P = 0.07
Test for heterogeneity between subtotals: $\chi^2_2 = 6.7$; P = 0.03



Test for heterogeneity (18 groups): $\chi^2_{17} = 16.8$; P = 0.5

Bu metaanalize göre

allo-HCT > oto-HCT/KT

allo-HCT üstünlüğü < 35 yaş hastalarda
Çalışmalar erişkin tip protokollerle yapıldı

MSD-MA allo-HCT < 35 yaş hastalarda \approx %10
mutlak OS avantajı sağlar

MRC-ECOG UKALLXII/EC2993: Ph (-) ALL

Grup	n	OS (5) (%)	Relaps (5) (%)	NRM (2) (%)
Yüksek risk†	401			
Donör (+)	171	40 (p: 0.2)	39	39
Donör (-)	230	36	62	12
Standart risk‡	512			
Donör (+)	218	63 (p:0.02)	27	20
Donör (-)	294	51	50	7

†: yaş > 35; WBC > 30000/mm³ (B) - 100000/mm³ (T); TR süresi > 4 hafta

‡: Standart risk grubunda % 60 hasta < 30 yaşında

Metaanaliz-2012-11 çalışma

Reference and Patient Populations	Quality/ Strength of Evidence ^a	Treatment Regimen	Sample Size	Age, Years Median (range)	% WBC >100,000	% Ph+	% T Lineage	Follow-Up (in Months) Med (Range)	% TRM	% EFS/DFS/LFS (95% CI)	Signif. EFS/DFS /LFS [†]	% OS (95%CI)	Signif. OS [†]
<i>Update data published since January 2005</i>													
[2] Ram 2010 1986-2006 accrual dates Meta-analysis Aggregate data from 11 studies (9 ITT)	I++	Total	1863	NR (7-60)	NR	NR	NR	Overall Mean 62 (30-110)	NR	NR	NR	Reduced ACM for Allo SCT RR, .89 (0.82-0.97)	P = .009
		Allo SCT											
		Other (auto or chemo) (7 ITT trials)											
		Total	903										
		Auto SCT										No difference in ACM RR, 1.02 (0.88-1.19)	P = .76
		Chemotherapy (5 randomized trials)											

ACM: all-cause mortality

Bio.Blood Marrow Tras. 2012; 18: 18-36

AYA üst sınırı genişliyor

- Güncel çalışmalarda üst sınır 60 yaşa kadar geldi
- Uzun dönem (2-6) yıl OS: %60-69
- Standart erişkin protokollerine göre avantaj %20

Pediatr Blood Cancer 2007; 48(3): 254-61
J Clin Oncol 2008; 26(11): 1843-9
J Clin Oncol 2009; 27: 911-18
J Clin Oncol 2014; 32(9): 905-11

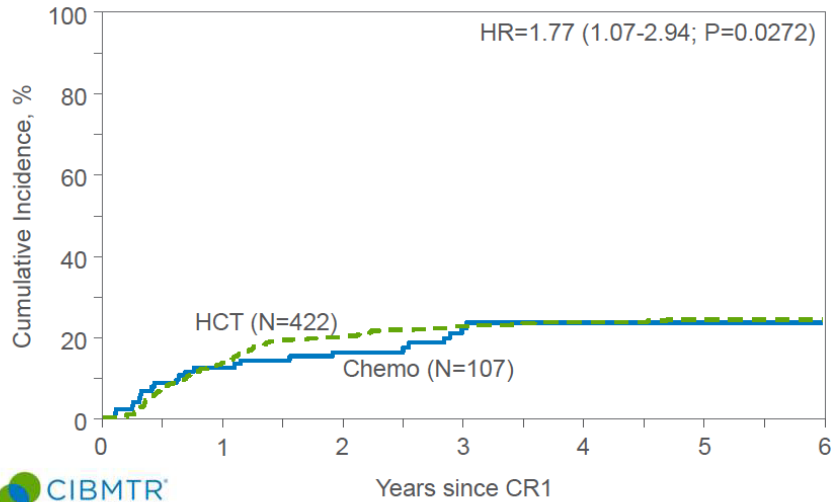
PEDİATRİK KT vs HCT

- Retrospektif analiz
- Ph- ALL
- Yaş: 18-50
- Pediatrik KT: DFCI-faz II protokolleri

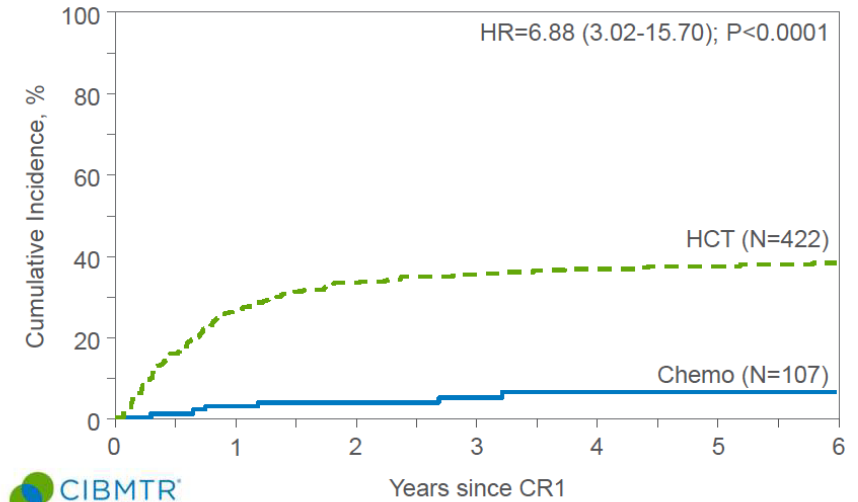
CIBMTR-Dana Farber Çalışması

- 530 AYA (18-50) Ph- ALL CR1
- Allo-HCT (n:422) vs pediatrik protokol (n: 108)
- Tedavi ilişkili mortalite: HCT (%37) vs CT (%6) $p < 0.0001$
- Nüks farksız (%23 vs %24)
- OS: HCT (%45) < CT (%73) $p < 0.0001$
- ALL de pediatrik protokoller Allo-HKHN'den üstün

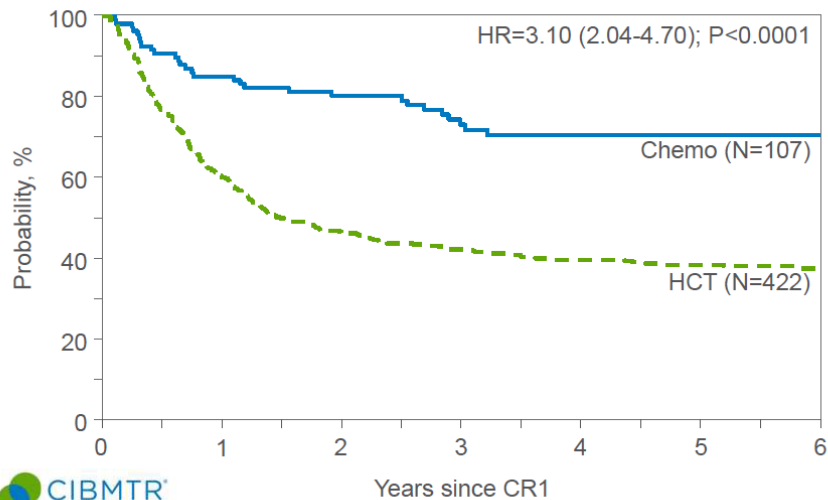
Cumulative Incidence of Relapse



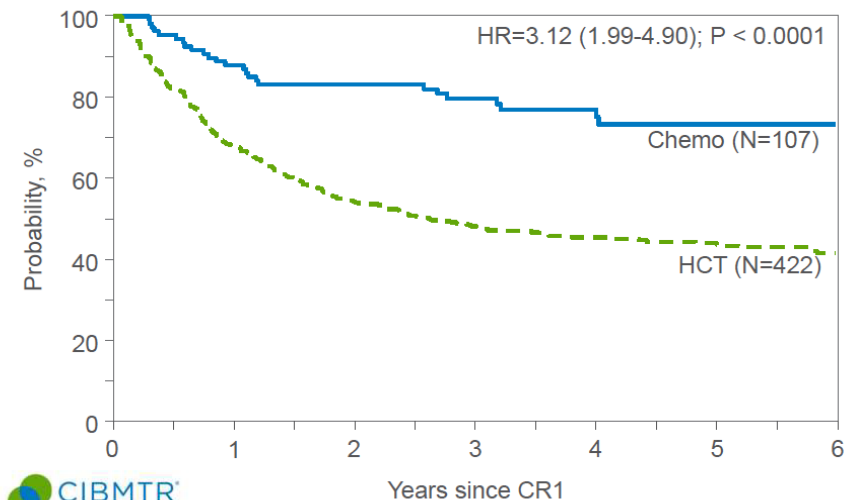
Cumulative Incidence of TRM



Disease-Free Survival



Overall Survival



ASBMT: HKHN vs KT

Endikasyon	Öneri düzeyi	Yorum
CR1: Allo vs KT	A	Tüm risk gruplarında MAC-allo uygun. < 35, standart risk, Ph- olgularda allo-HCT ile LFS ve OS artar. > 35, standart risk, Ph- olgularda TRM artar; allo-HCT katkısı düşer.
Cr1: Oto vs KT	A	Uygun allojenik vericisi yoksa , oto-HCT benzer Os ve kısa tedavi süresi ile KT'ye tercih edilebilir. Gelecekte seçilmiş hastalarda idame tedavisi, biyolojik tedavi ve TKI sonuçları iyileştirebilir.
≥ CR2: Allo vs KT	B	Allo-HCT önerilir.

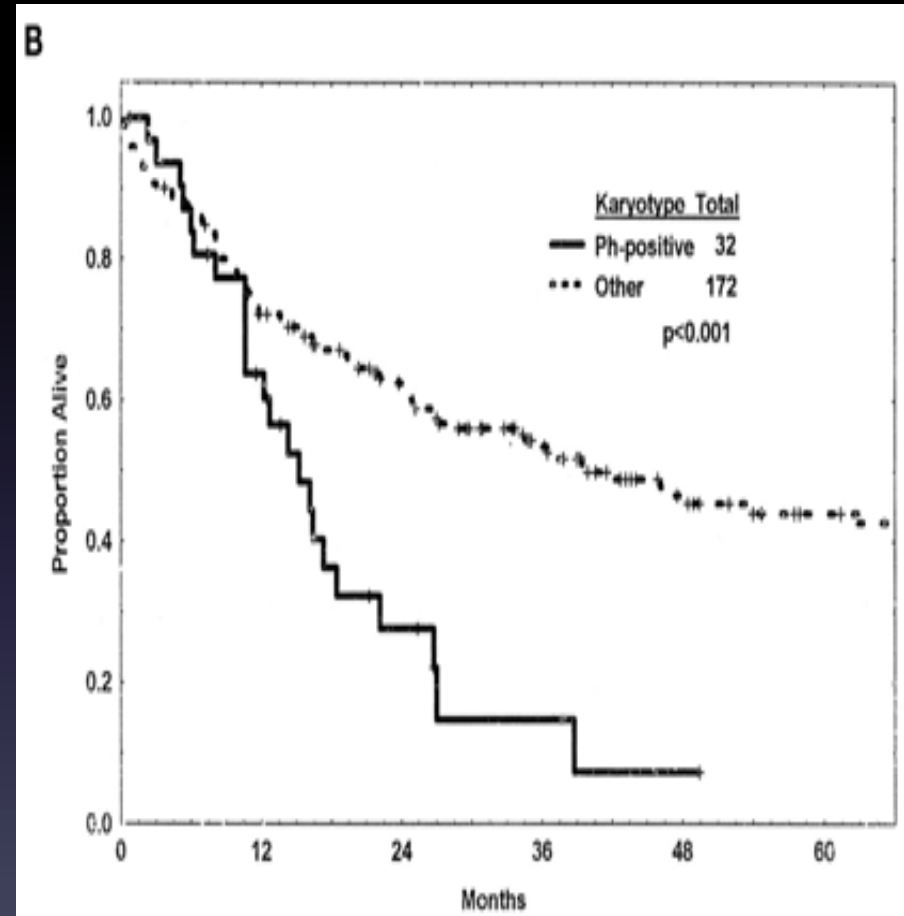
EBMT

Evre	HLA-uyumlu kardeş	MUD	Alternatif donör	Otolog
CR1 (Ph ⁻ standart risk)	gelişmeye açık	genellikle önerilmez	genellikle önerilmez	gelişmeye açık
CR1 (Ph ⁻ yüksek risk)	standart	standart	klirik seçenek	genellikle önerilmez
CR2 nüks	standart	standart	klirik seçenek	genellikle önerilmez
RR hastalık	klirik seçenek	gelişmeye açık	gelişmeye açık	genellikle önerilmez

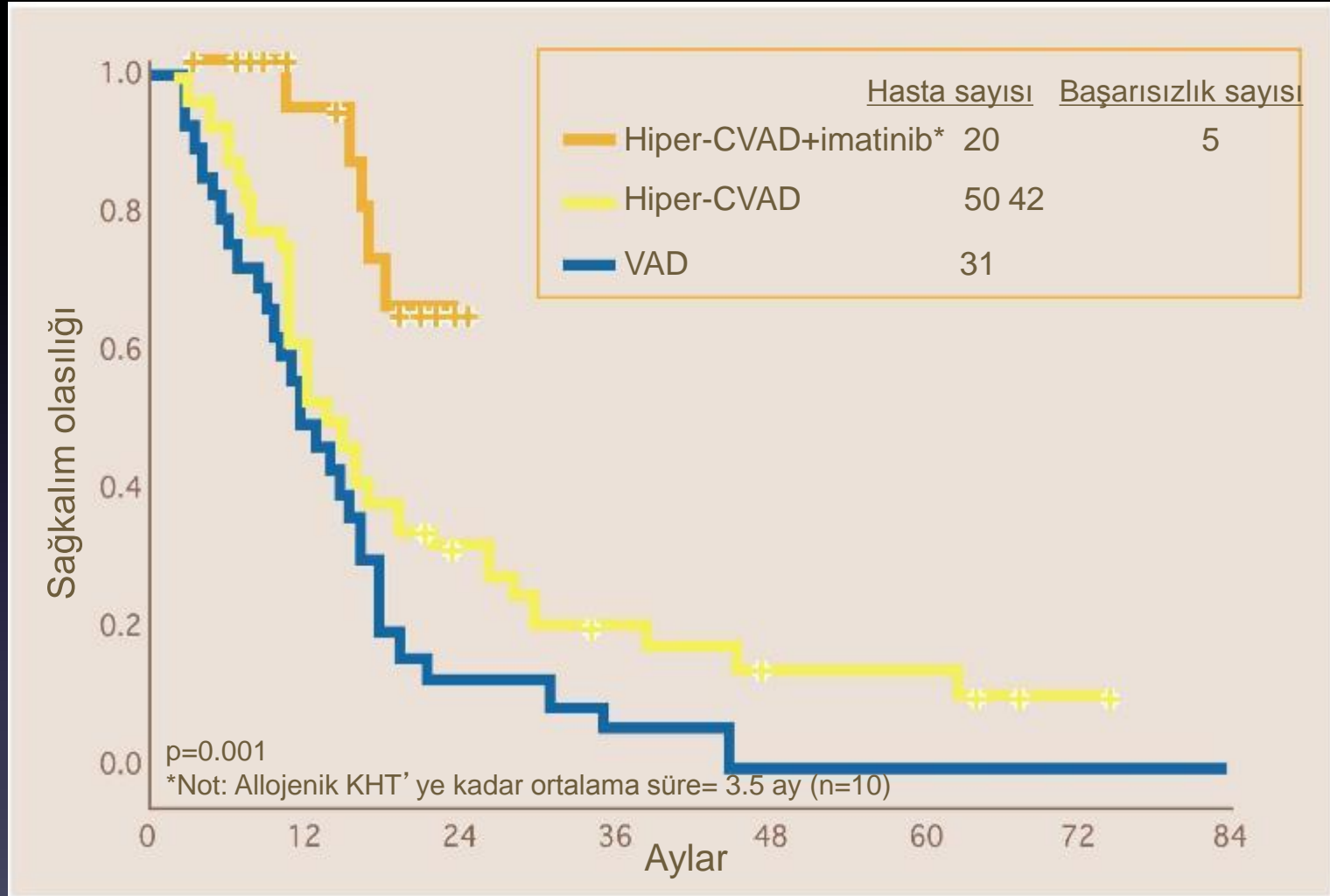
Ph⁺ ALL

KT ile Genel Sağkalım

- Konvansiyonel tedavi ile TR = % 60-90
- TR süreleri = 6-12 ay
- 5 yıllık yaşam= KT alan hastalarda %0-10
- Relaps sonrası tedavilerin OS etkisi oldukça sınırlı



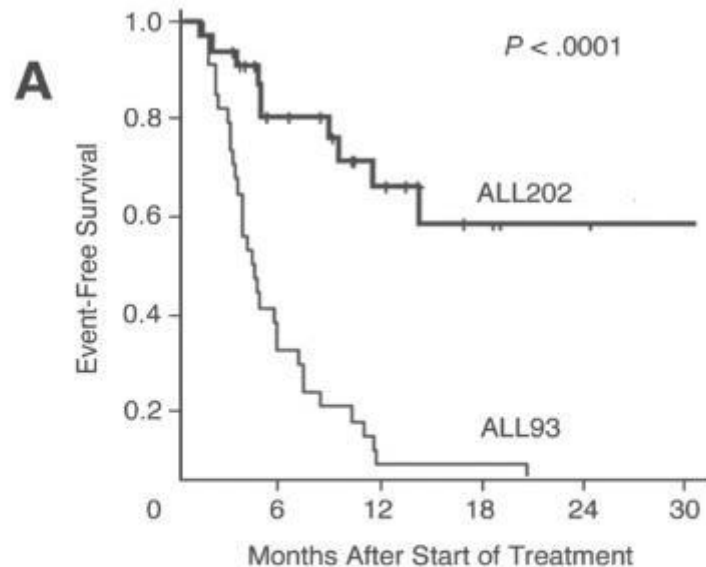
İmatinib + Hiper-CVAD: Tedaviye Göre Sağkalım



Allo-HSCT uygulanmayan hastalar Ph⁺ ALL TKİ + KT vs KT

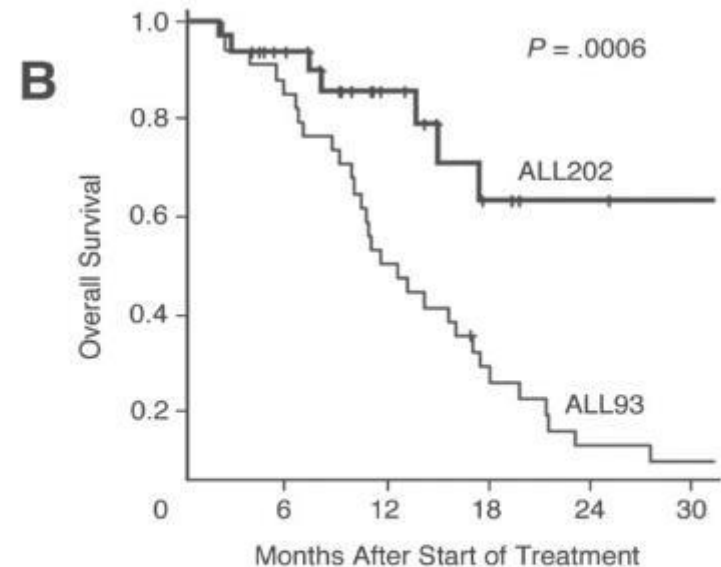
Olaysız Sağkalım

Toplam Sağkalım



Patients at risk:

ALL202	31	18	11	6	4	3
ALL93	32	9	1	1	0	0

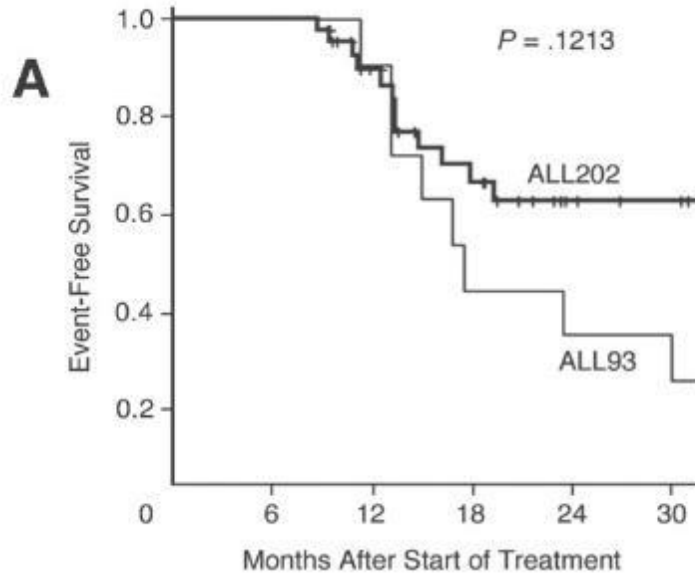


Patients at risk:

ALL202	31	22	13	6	4	3
ALL93	32	24	14	6	2	1

CR1 allo-HSCT Ph⁺ ALL TKI + KT vs KT

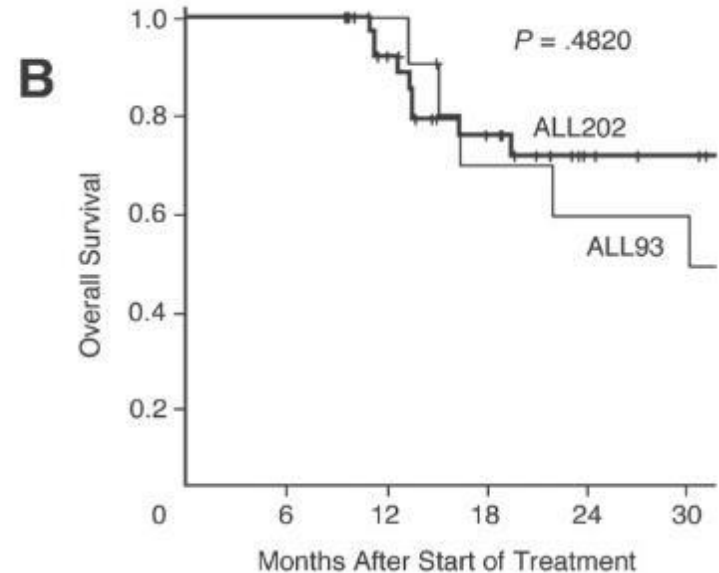
Olaysız Sağkalım



Patients at risk:

ALL202	39	39	21	15	5	4
ALL93	10	10	7	4	3	2

Toplam Sağkalım



Patients at risk:

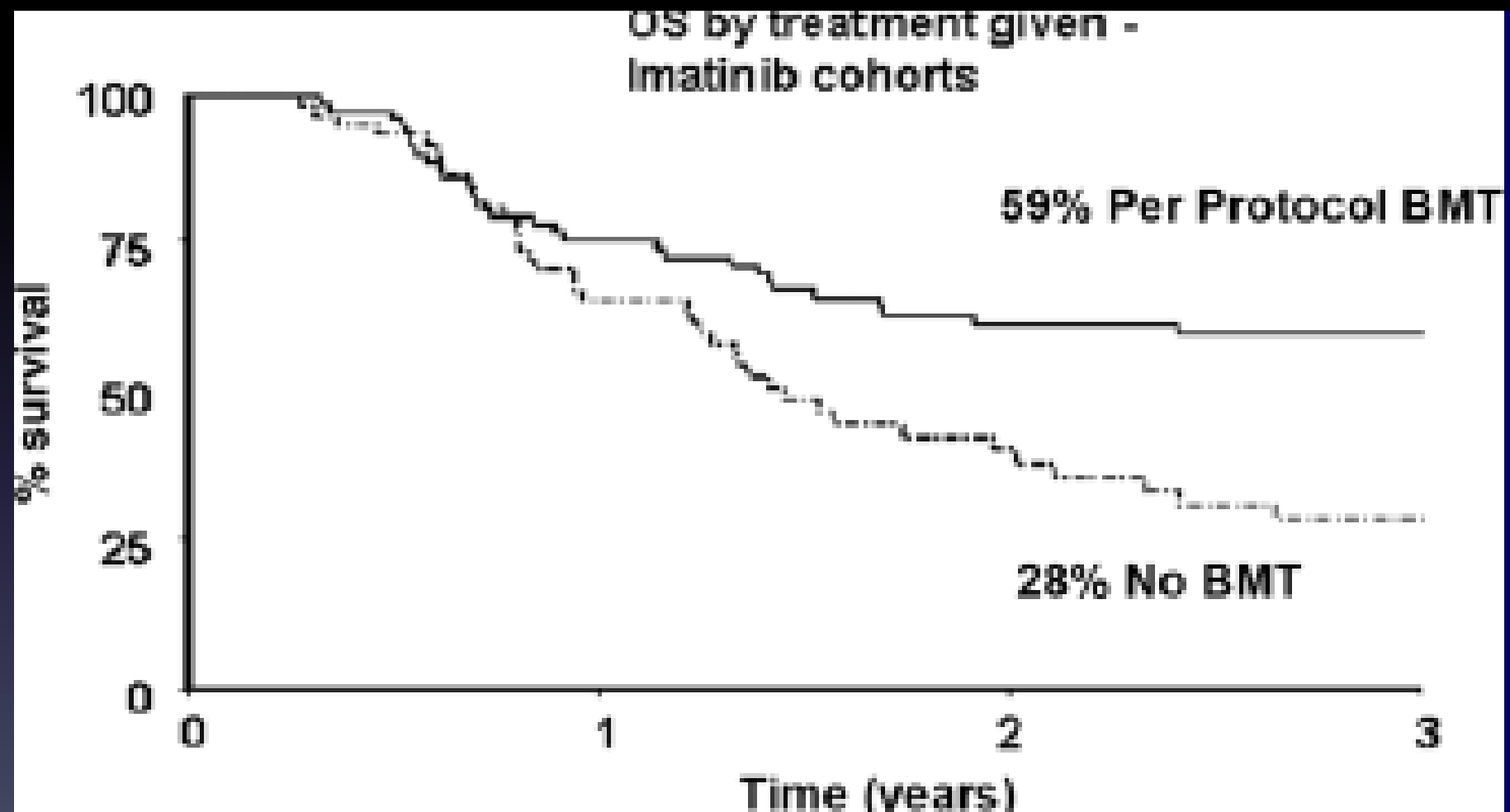
ALL202	39	39	22	16	5	4
ALL93	10	10	9	6	5	4

ALL 202= İmatinib ile kombine rejim kullanılan hastalar (ALL202, n = 39)

ALL 93= Sadece KT ile tedavi edilen tarihsel kontrol hastaları (ALL93, n = 10)

Ph⁺ ALL

UKALL XII/ECOG 2993 çalışması

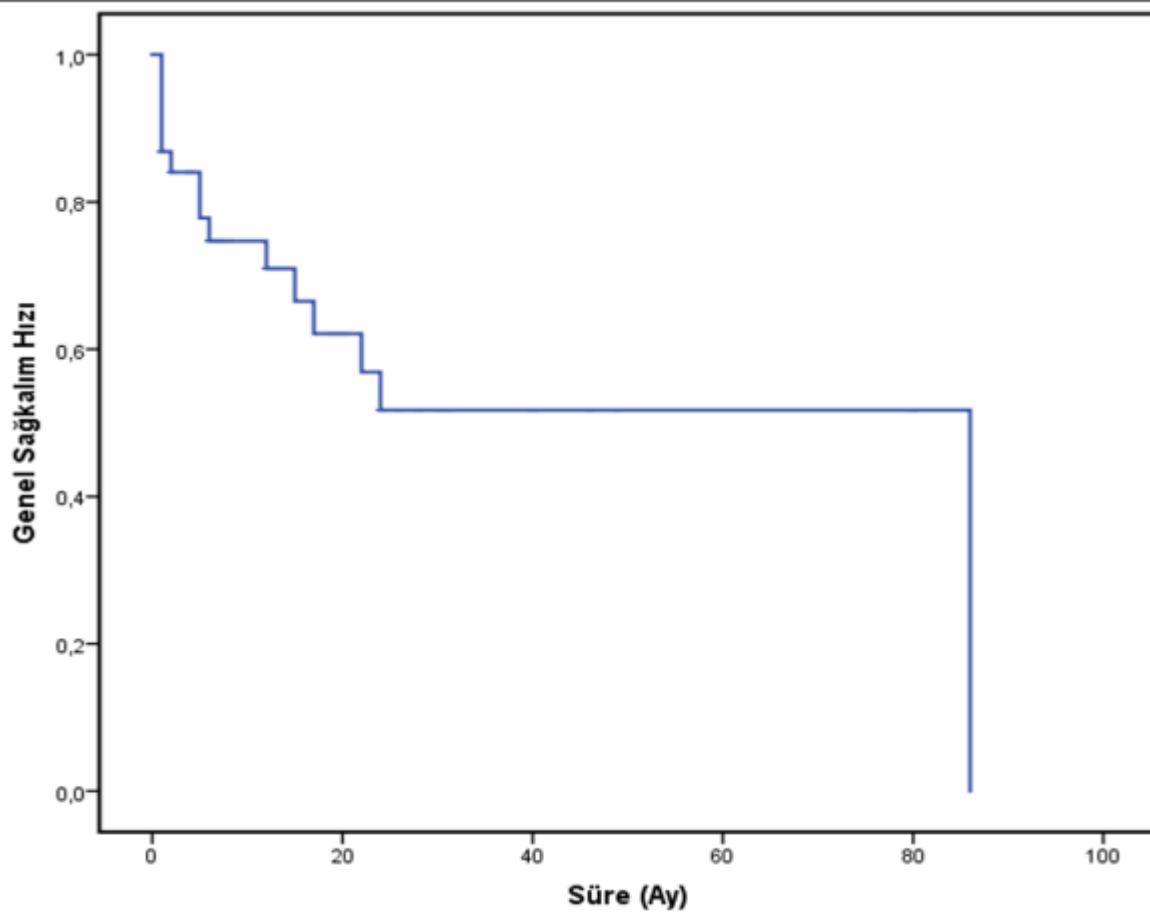


Philadelphia-positive Acute Lymphoblastic Leukemia in Daily Practice: A Multicenter Experience

Hakan Göker¹, Emre Tekgündüz², İsmail Sarı³, Çiğdem Pala⁴, Mehmet Hilmi Doğu³, Erman Öztürk⁵, Burhan Turgut⁶, Serdal Korkmaz⁷, İtir Şirinoğlu Demiriz², Yahya Büyükaşık¹, Sibel Hacıoğlu³, Leylagül Kaynar⁴, Sinem Civriz Bozdağ², Fevzi Altuntaş²

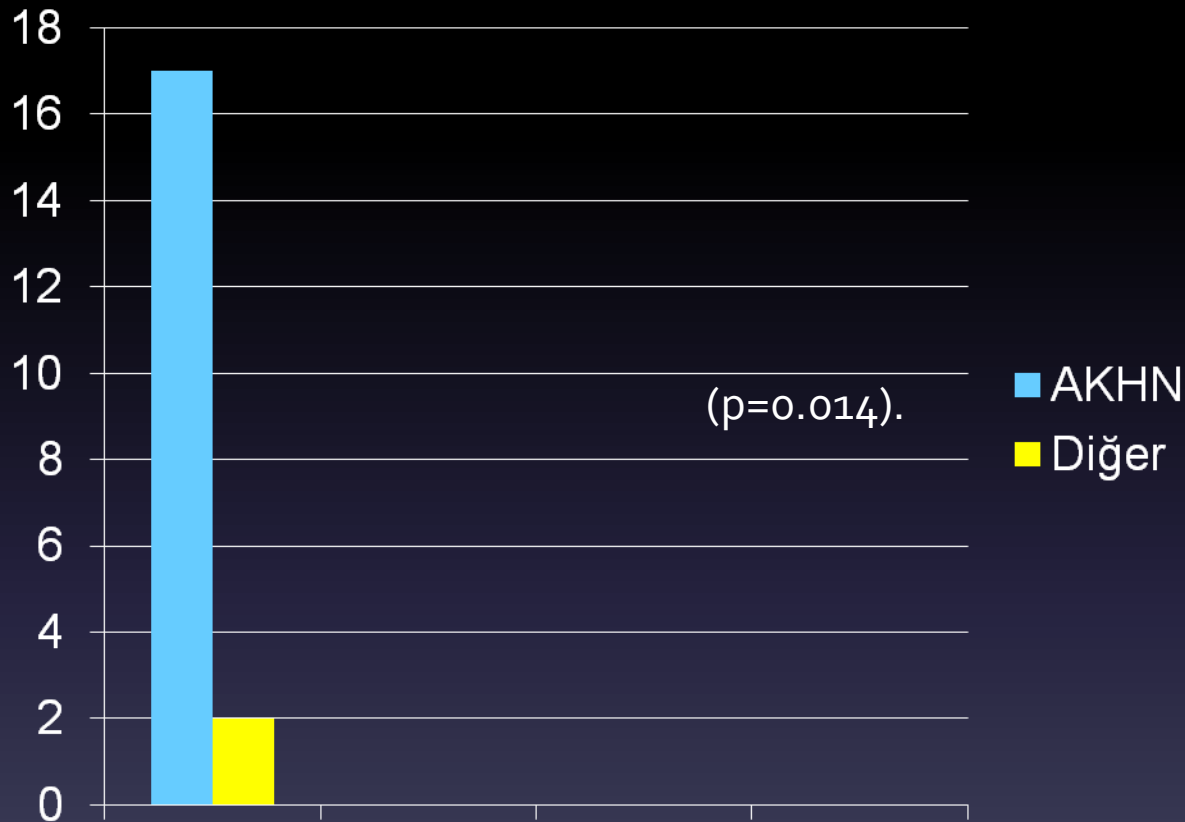
Ph⁺ ALL Sağkalım

Takip sırasında 15 hasta hayatını kaybetmiştir.



- Ortalama OS=12 ay
- 12 aylık OS= %69,3
- 24 aylık OS = %49,1

Ph⁺ ALL Sağkalım



• OS

• AKHN= 17 ay

• Diğer= 2 ay
(p=0.014).

SABRINIZ İÇİN TEŞEKKÜRLER