

Graft sources and algorithm: availability of different stem cell sources in Latin America



Julia Palma MD
PINDA - Hospital Luis Calvo
Mackenna

SCT Donors

POTENTIAL SCT PATIENT

Option #1

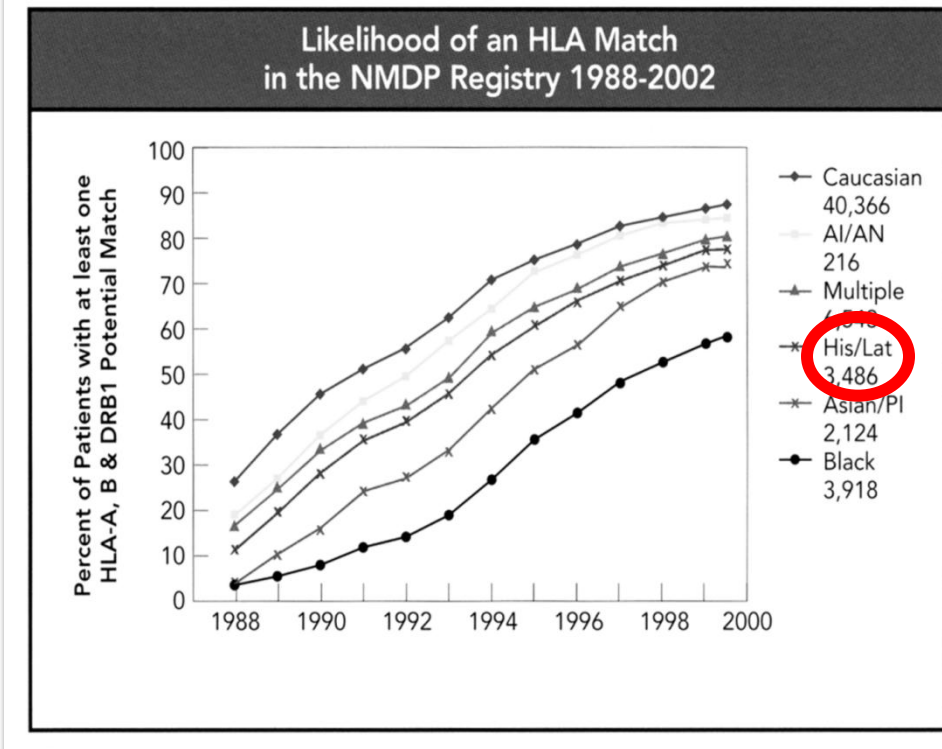
MSD, MFD

20 – 30%



7 million UBM donors 71000 UCBU

Transfusion Medicine, 2008, 18, 250-259



Chile: “a mixed population: 64% white, 35% Amerindian, with traces of other admixture and < 4% are foreign born”



Aymara



Pehuenche



Alacaluf



Atacameño



Mapuche

Widening the Donor Pool

The national registry of potential bone-marrow and stem-cell donors is seeking more minority volunteers. The current breakdown:

By Race	Number	% of Total
African American or Black	More than 550,000	8%
American Indian/Alaska Native	Nearly 83,000	1%
Asia	Nearly 520,000	7%
South Asian	More than 130,000	
Chinese	More than 80,000	
Filipino	More than 40,000	
Japanese	More than 30,000	
Korean	More than 65,000	
Vietnamese	More than 15,000	
All other Asian (includes people who select more than one Asian sub-group)	More than 145,000	
White	More than 5.3 million	73%
Multiple Race	More than 210,000	3%
Native Hawaiian or Other Pacific Islander	More than 10,000	0.1%
By Ethnicity	Number	% of Total
Hispanic or Latino (total indicating Hispanic or Latino ethnicity or race)	Nearly 690,000	9%

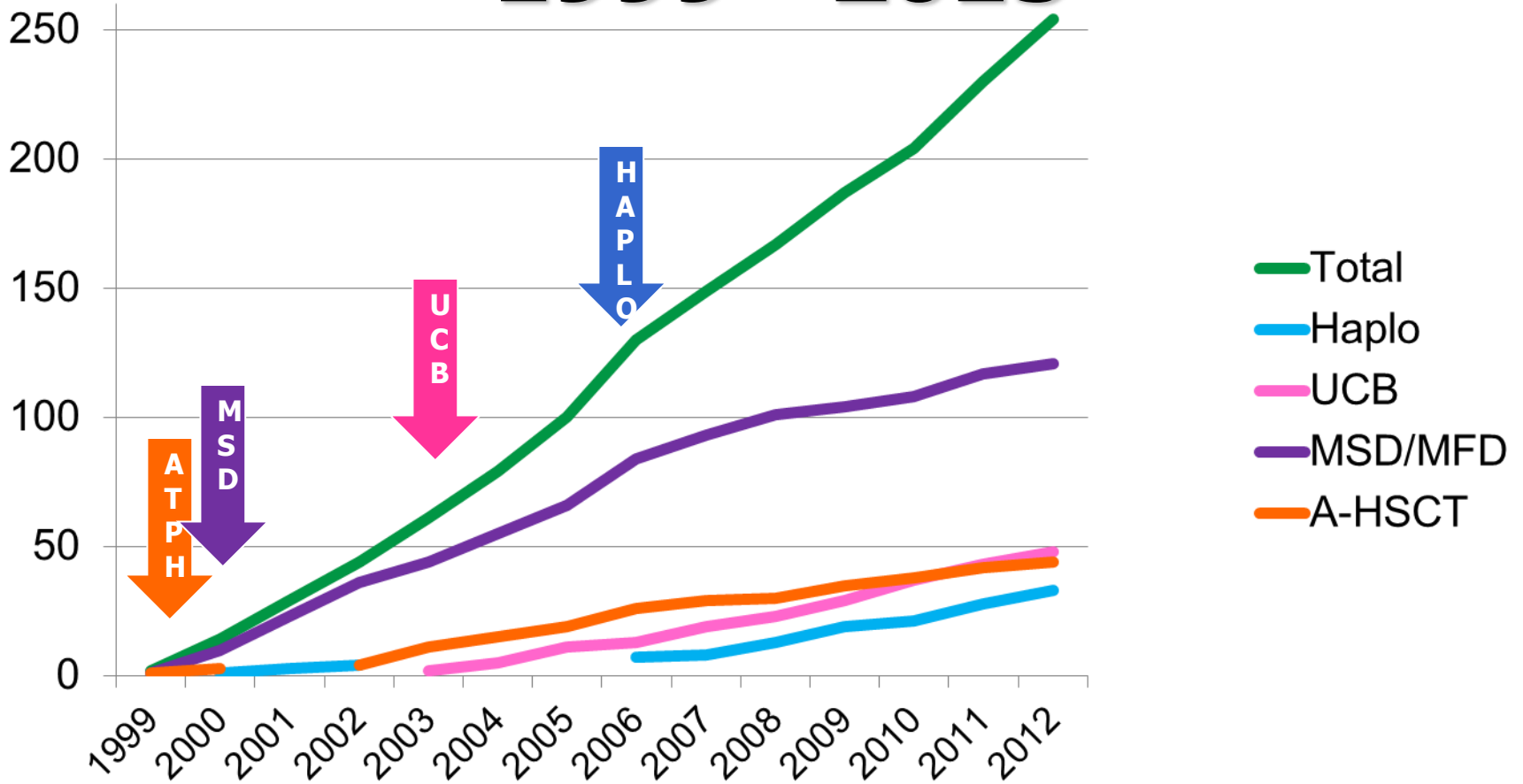
Note: May not add up to 100% due to Unknown, Other and Declined to answer.

Source: National Marrow Donor Program

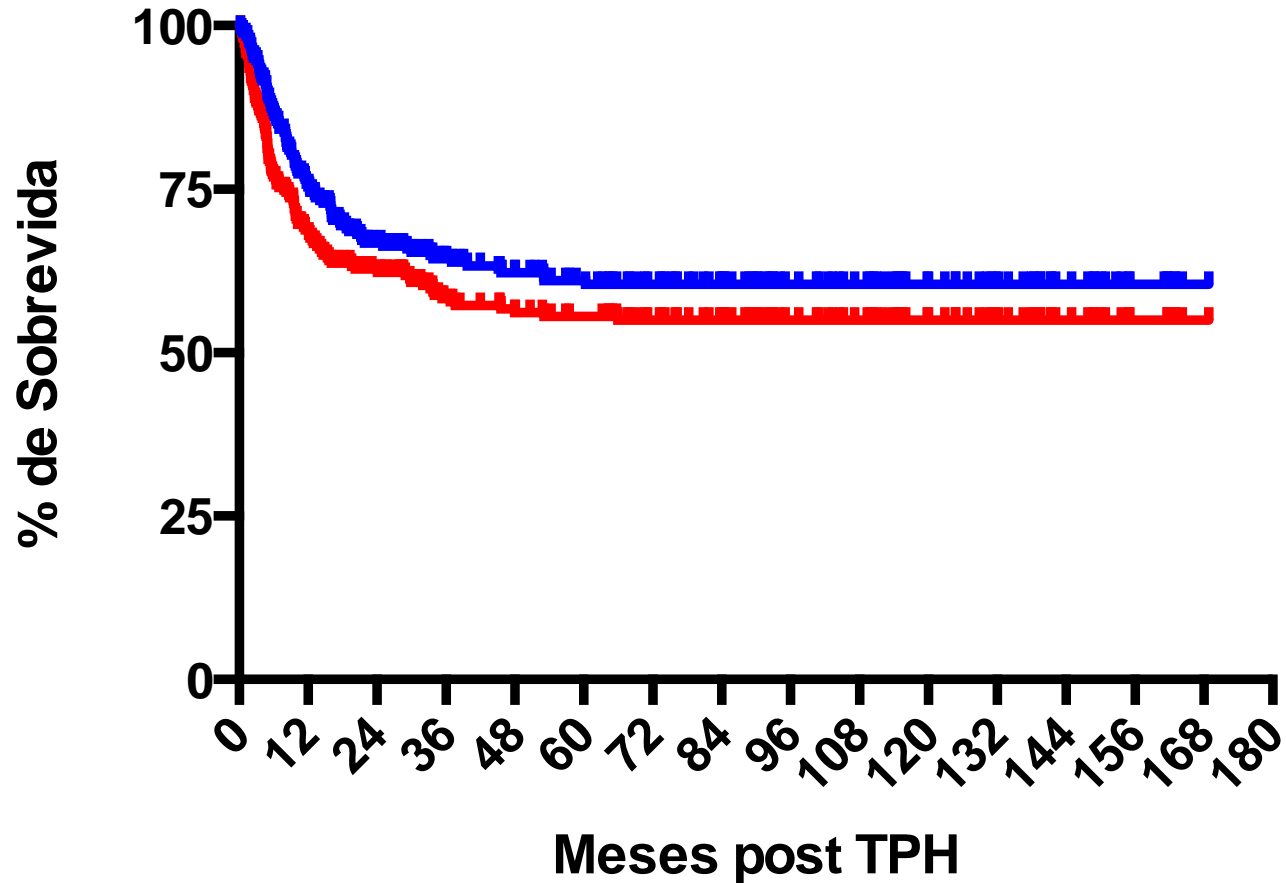
**Latin Americans are not well represented at donor registries.
How to face the lack of suitable donors?**



HSCT Activity 1999 - 2013



n=263 ATPH/MSD/MFaD/SCU/Haplo



— Total Survival

75% a 1 año
64% a 3 años
61% a 5 años

— Event Free Survival

69% a 1 año
58% a 3 años
56% a 5 años

Donor selection:

HLA identity donor/recipient	sibling donor	family donor
10/10	MSD	MFD
9/10	1MMFD	
< 9/10	MMFD	

MSD

MD

MMD

Cord blood:

HLA-identical sibling = MSD

6/6 or higher = MD non oncological

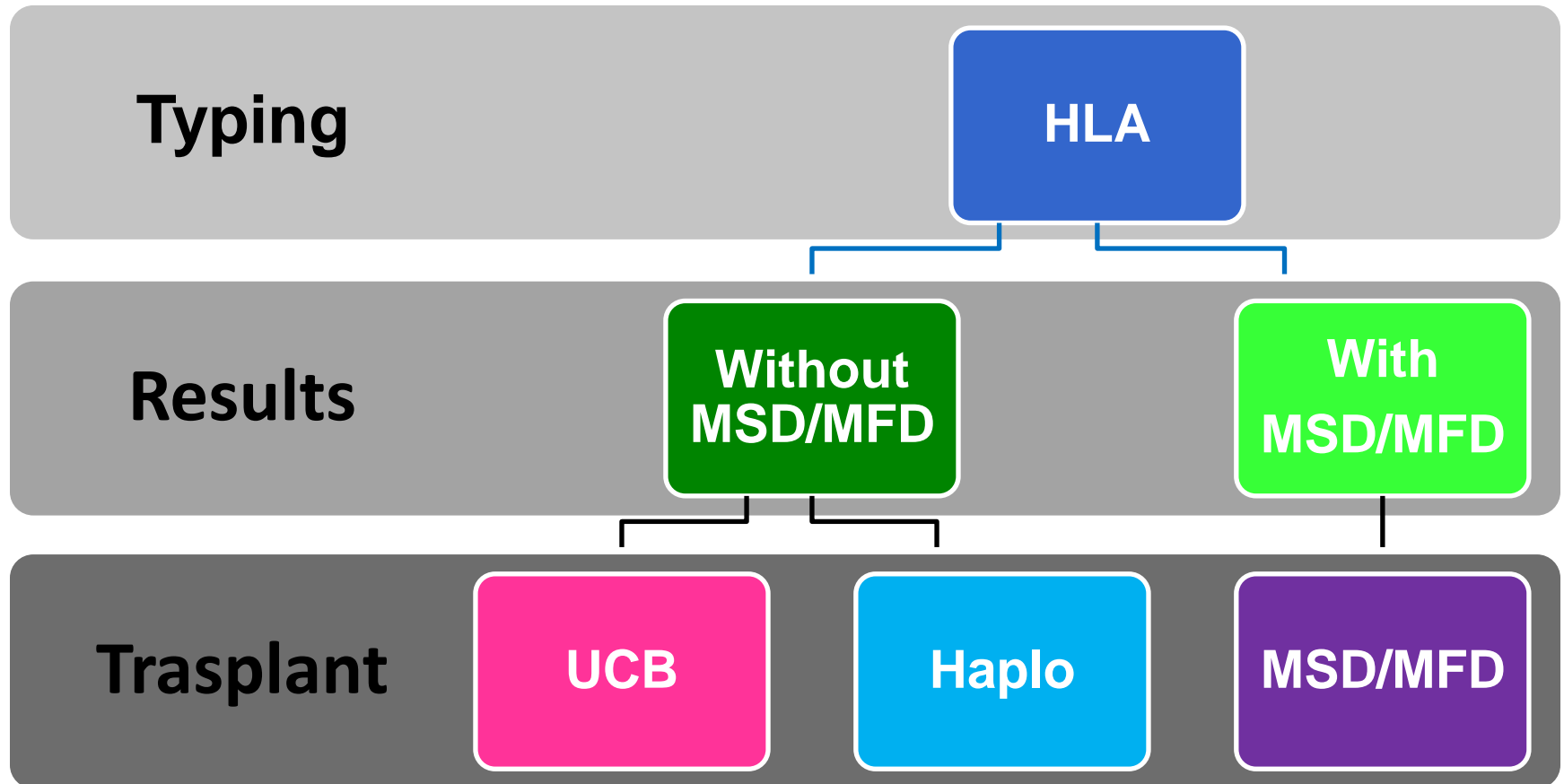
5/6 = MD oncological

Less than 6/6 = MMD non oncological

Less than 5/6 = MMD oncological

Adapted from BFM, C. Peters

Graft sources and algorithm PINDA-HLCM



Alternative donors in Chile

- **Unrelated Cord Blood**
- **Haplo**

HST for Refractory Acute Leukemia patients (chemoresistant or induction failure) including:

Diagnosis	Status	Characteristics
ALL	CR1	PPR and Ph+ Induction failure (NR day 33)
	CR2	Ph+, ALLT, S3/S4
	CR>2	ALL
AML	CR1	> 10% blasts post-HAM > Aplasia, 4 weeks post-HAM Refractory Disease
	CR2	CR duration < 1 year
	CR>2	AML

SCT Donors



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Option #2

MUD (UCB)

Ethnic
Caucasian **Minority**
60 – 70% **10 – 20%**



Patients Characteristics

UCB HSCT AML and ALL

n: 45 patients transplanted until August 2013

n: 43 evaluable patients

- **Age** 6.6 years (2-22)
- **Gender** M/F: 30/15
- **1st HSCT** 43
- **2nd HSCT** 2 (post-Haplo, both alive)

Diagnosis: ALL-AML (n:43)

ALL (37) CR 1 = 27

CR 2 = 9

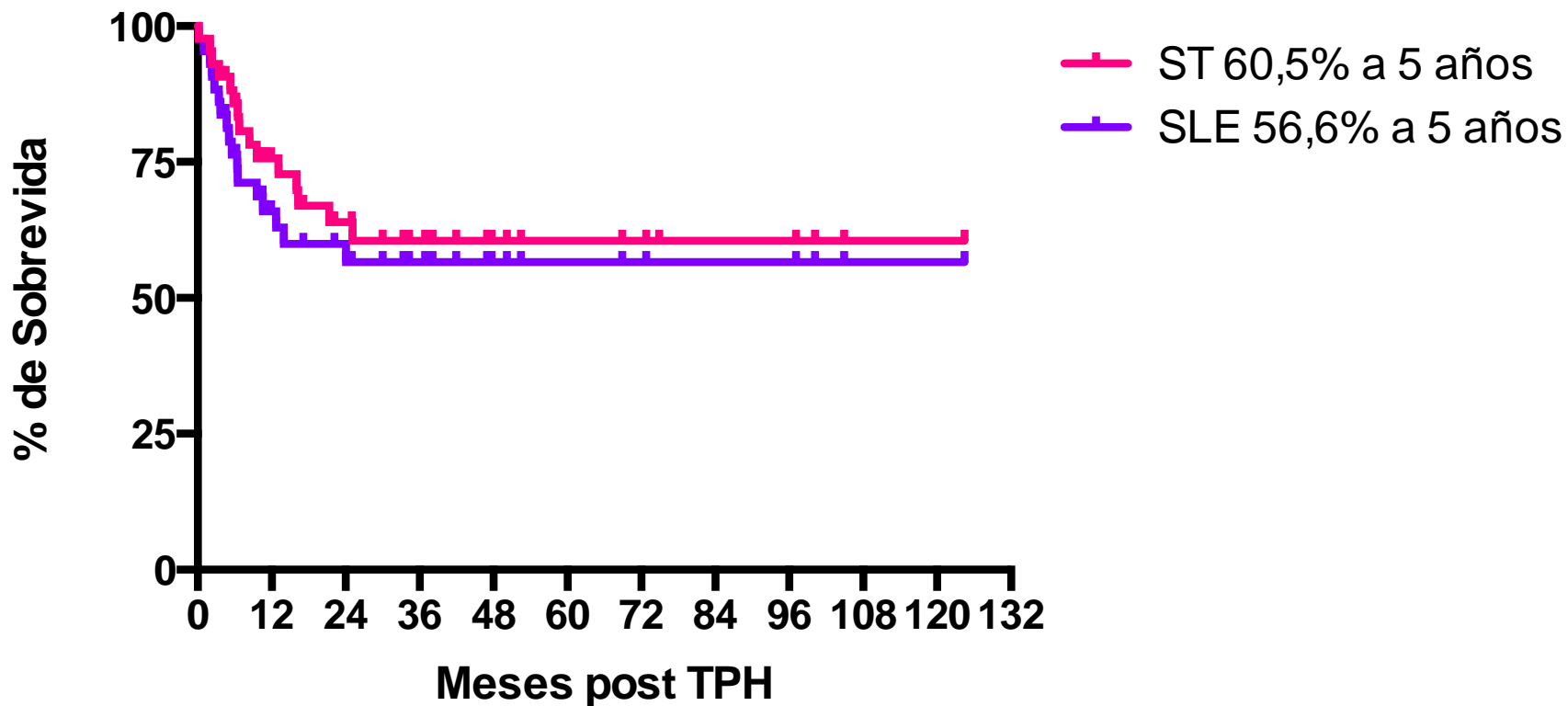
CR 3 = 1

AML (6) CR1 = 3

CR 2 = 3

Total Survival and Event Free Survival

UCBT: ALL and AML n=43



LLA: 37 LMA:6

SCT Donors

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Caucasian 60 – 70%
Ethnic Minority 10 – 20%

Option #3

No Donor

> 50%

Haploidentical HSCT
Pediatr Blood Cancer. 2012
Nov;59(5):895-901.

Patient Characteristics

N: 25 patients, 24 elegible

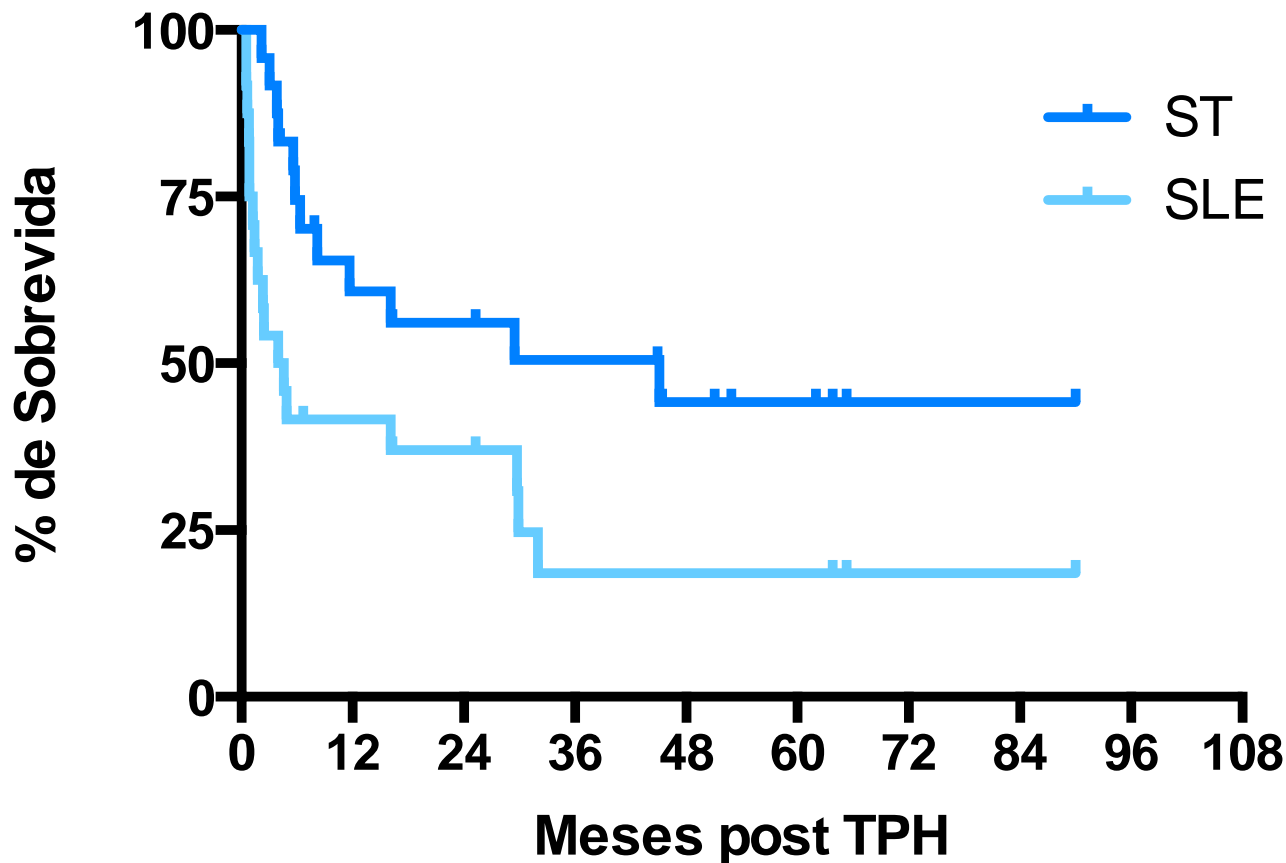
- **Age** **9,1 yr (2.8-16.7)**
- **Gender** **M/F:17/7**
- **1st HSCT** **23**
2nd HSCT **1***

Diagnoses (n:21)

24/24_in remission

ALL	(11)	CR 1	= 1
		CR 2	= 10
		CR3	= 4
AML	(8)	CR1	= 2
		CR 2	= 5
		CR 3	= 2

All patients Survival (n=24)



Sobrevidas	1 año	3 años	5 años
Total	60,8%	50,5%	44,2%
Libre de eventos	41,6%	18,5%	18,5%

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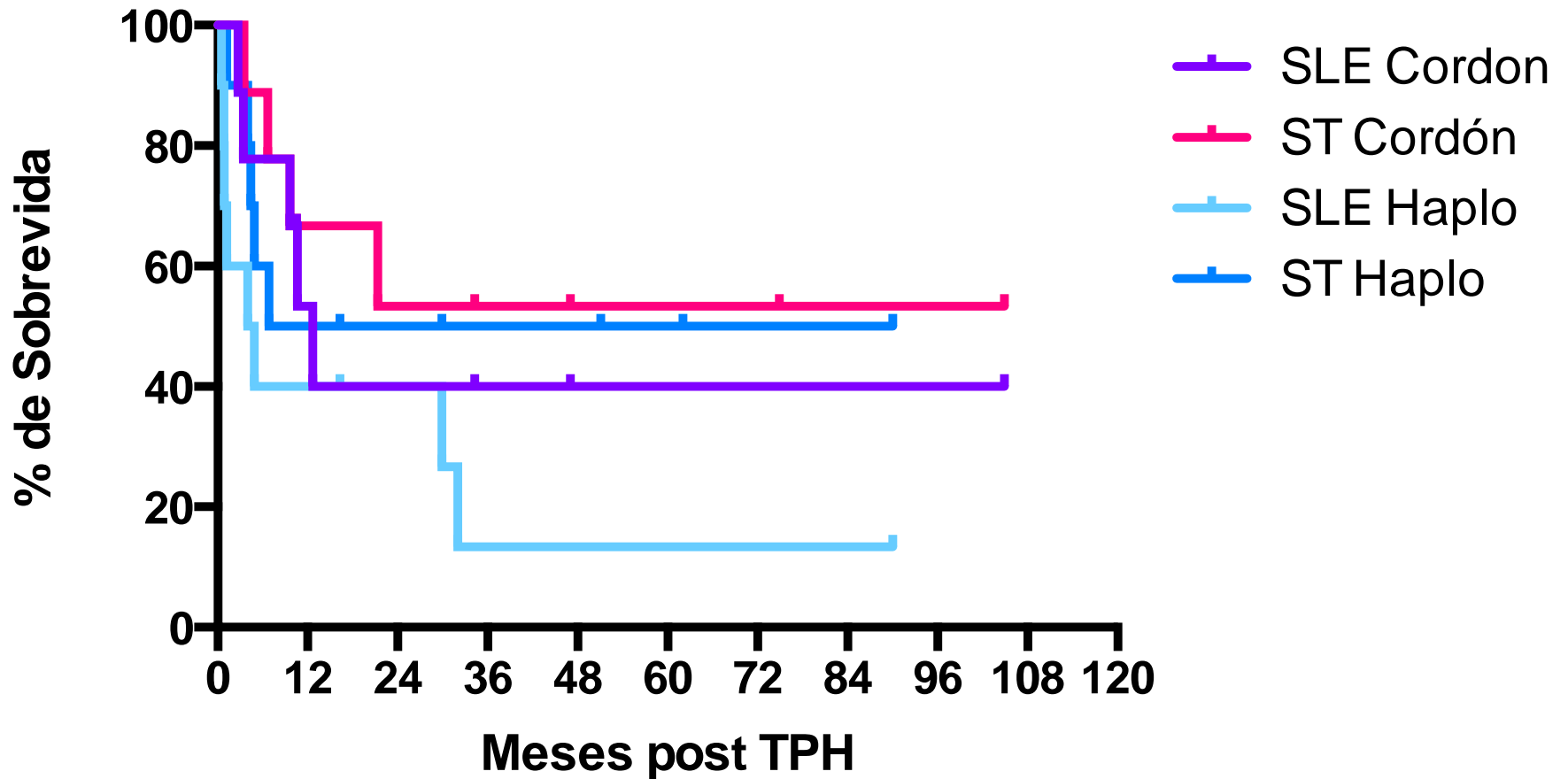
> 50%

Elegibility: HST for Refractory Acute Leukemias patients (quimioresistent o induction failure) including:

Diagnosis	Status	Characteristics
ALL	CR1	PPR and Ph+ Induction failure (NR day 33)
	CR2	Ph+, ALLT, S3/S4
	CR>2	ALL
AML	CR1	> 10% blasts post-HAM > Aplasia, 4 weeks post-HAM Refractory Disease
	CR2	CR duration < 1 year
	CR>2	AML

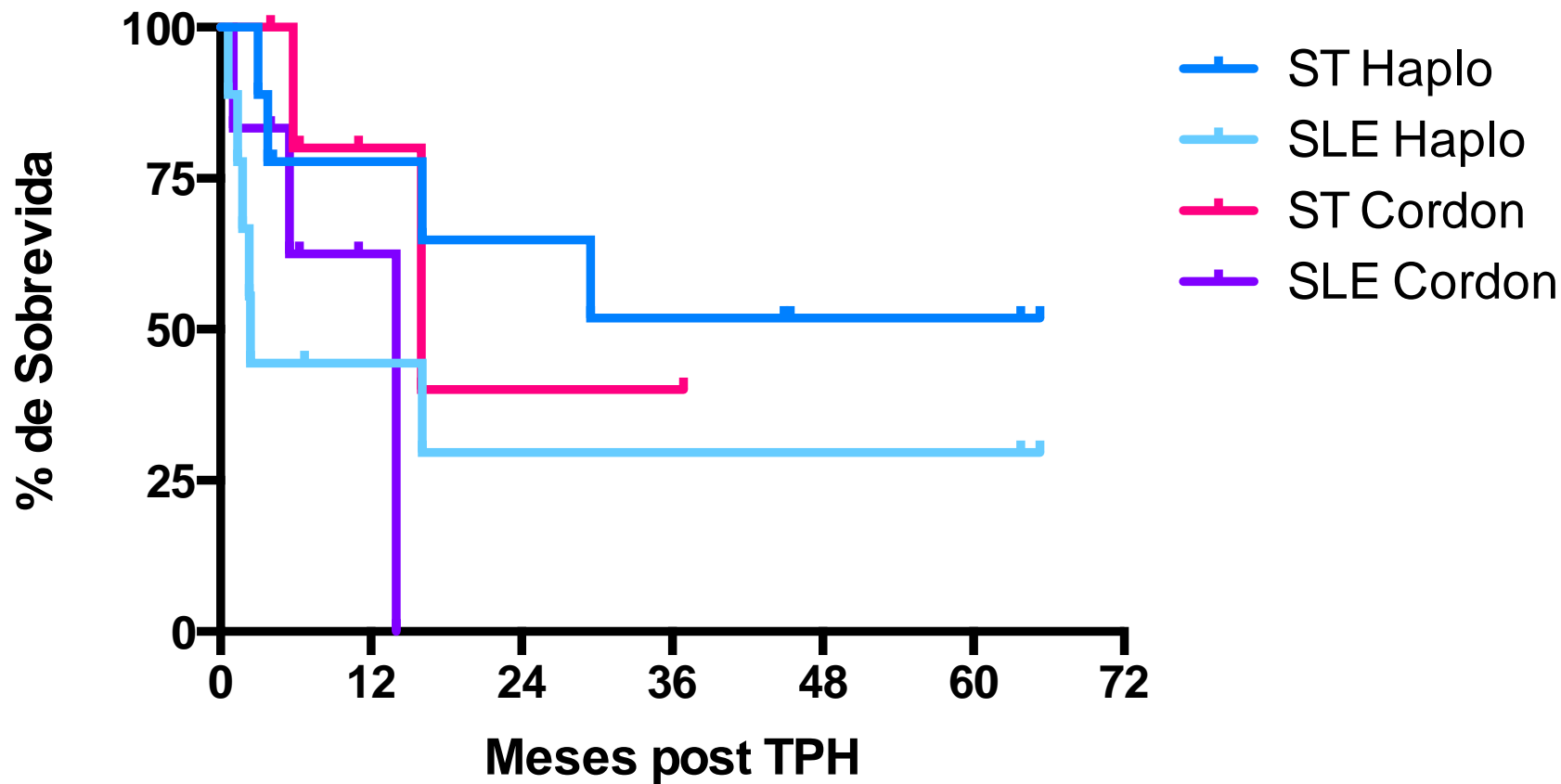
Event free Survival and Total Survival Transplant in ALL 2CR

UCB (n=9) Haplo (n=10)



Total Survival and Event free Survival Transplant in AML

UCB (n=6) Haplo (n=9)



Days of Stay

**HEAVY
DAYS**

	HSCT performed	× Days of Stay
2012	7	95

	HSCT performed	× Days of Stay
2012	9	75.3

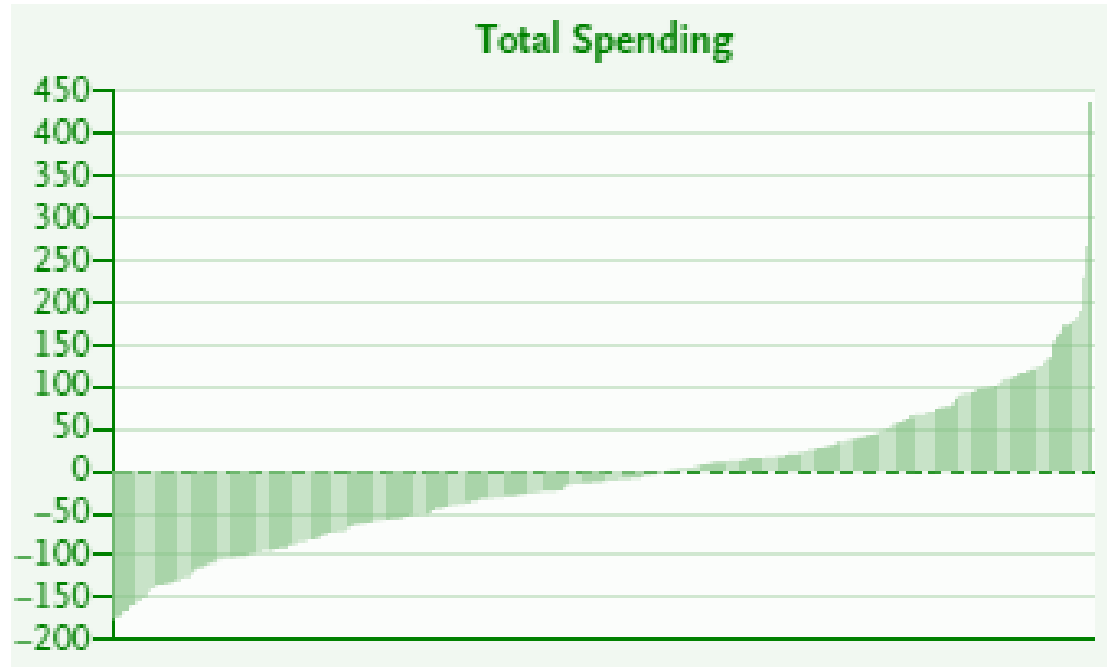
Readmissions



	HSCT performed	Readmissions
2012	7	7

	HSCT performed	Readmissions
2012	9	1

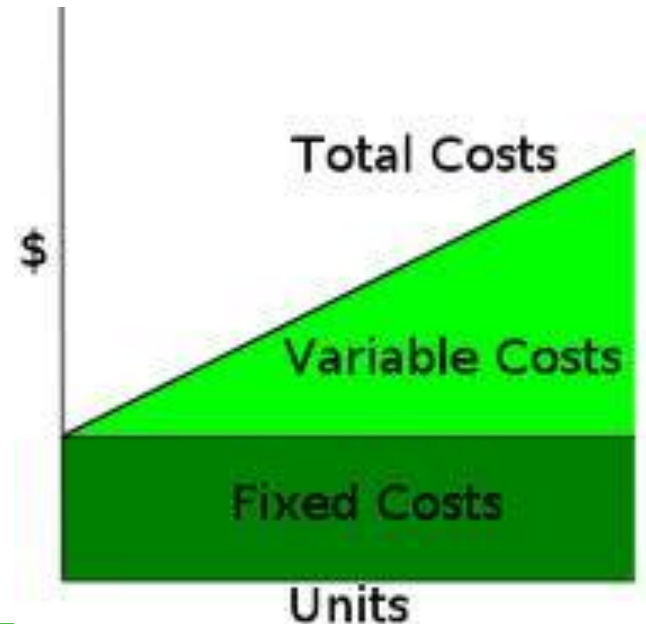
Average and Costs



	Nº HST	Average Costs		Nº HST	Average Costs
2012	7	US\$ 235,200	2012	9	US\$ 117,200

HSCT Costs and Follow – up Estimated Cost vs Real Cost

2012



Expenses per stage	%
HSCT	117%
Follow-up 1 ^o year	2%
Estimated vs real cost	19%

* % used in relation to budget



Discussion: **UCB** vs **Haplo**

- Principal cause of death: **relapses** (MRD)
- Groups are **not completely** comparable
 - ALL/AML 2 CR
 - low n
- **Back-up** in both
- **Increase** life expectancy of children with cancer
- UCB and Haplo: HSCT **option** for minorities
- Increase of **HSCT availability**, costs...



Discussion: **UCB**/Haplo



- **Donors:**

MSD > (**MUD**) > **CBU** > **Haplo**

- **Haplo is still an option**

3rd generation Haplo...

- **CBU**

Public Cord bank ...

Latin Americans are not well represented at donor registries. How to face the lack of suitable donors?

MUD

Donor Registry...(National and /or Regional)



Thank you!

