

Pros and Cons of Different Stem Cell Sources and Their Availability in EMRO Region

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Alternate Stem Cell Program,

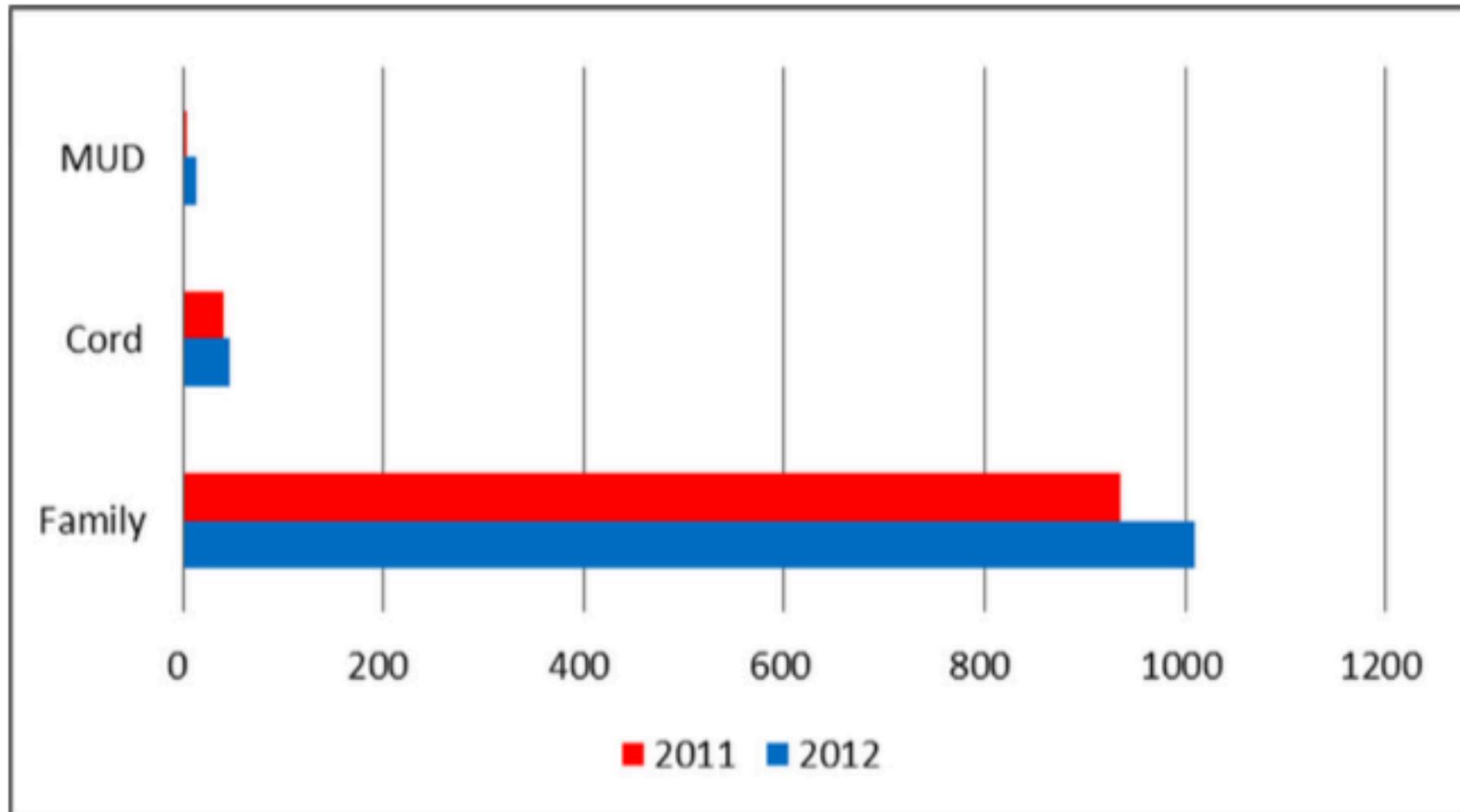
King Faisal Hospital and Research Centre, Saudi Arabia

- In EMRO, the prevalence of matched family donors is relatively high; 60 – 70% vs 40%. ^{1, 2}
- This is due to relatively higher family size and consanguinity where a restricted pool of genes is being inherited.

1 Sheth Blood 1996; 88 (Supp. 1): S265b

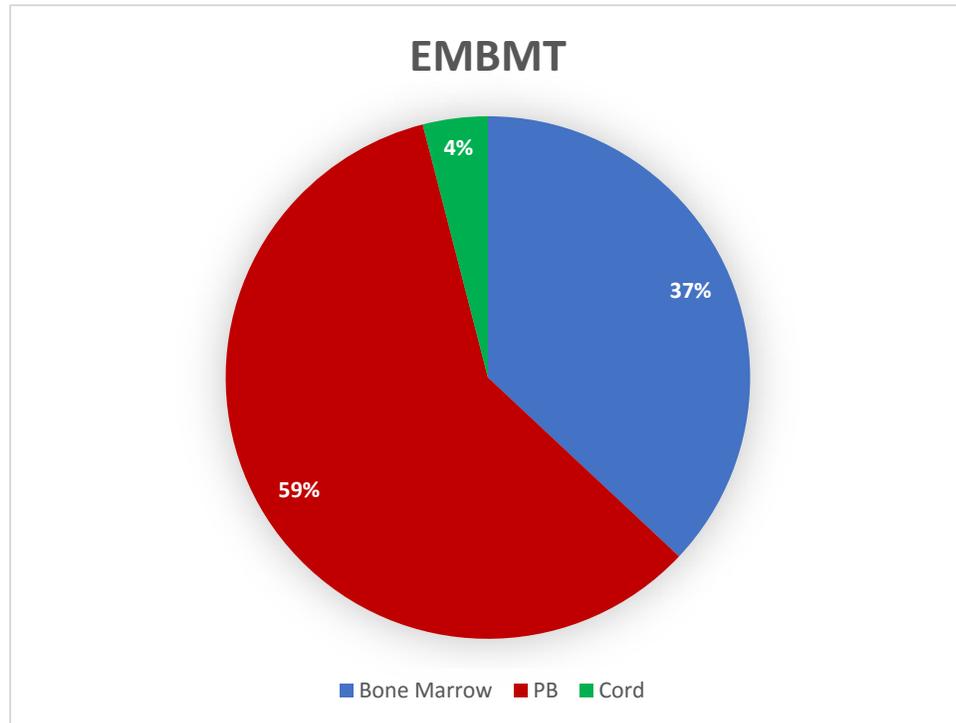
2 Gratwohl JAMA 303(16):1617–1624

Hematopoietic Stem Cell Transplantation Activity in EMRO

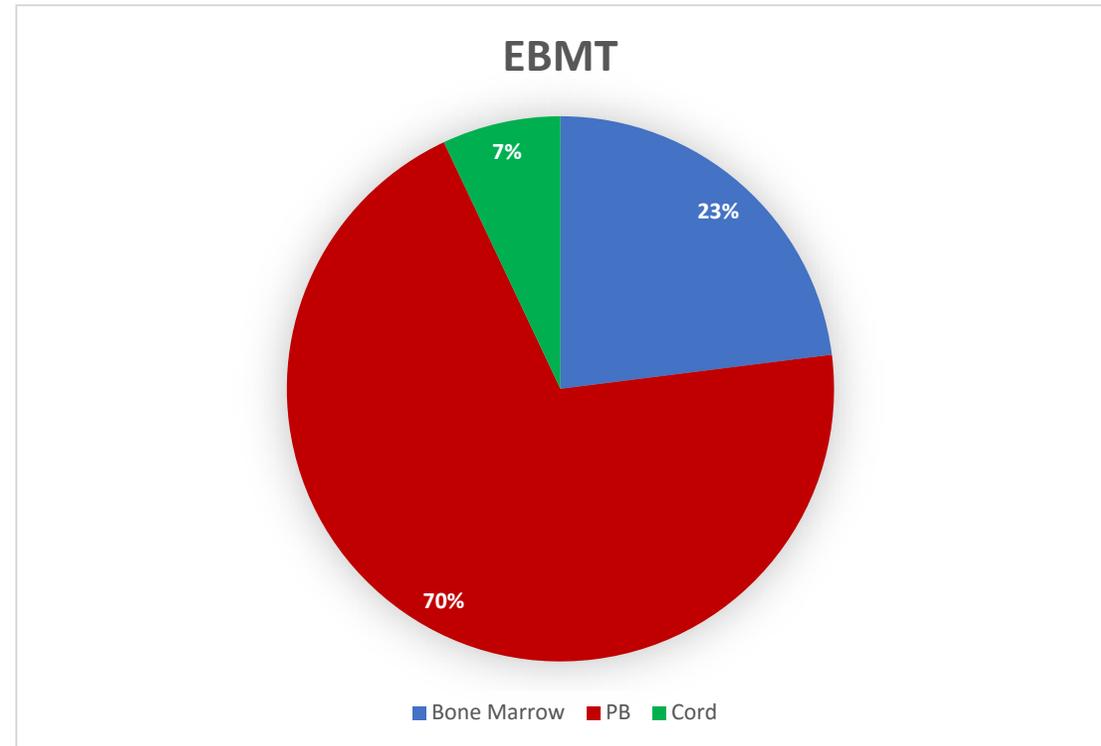


- Median age of population in EMRO is young, around 20 years in most countries ----- younger donors.
- Genetically homogeneous communities, possibly less GVHD

Stem Cell Source: PB vs BM

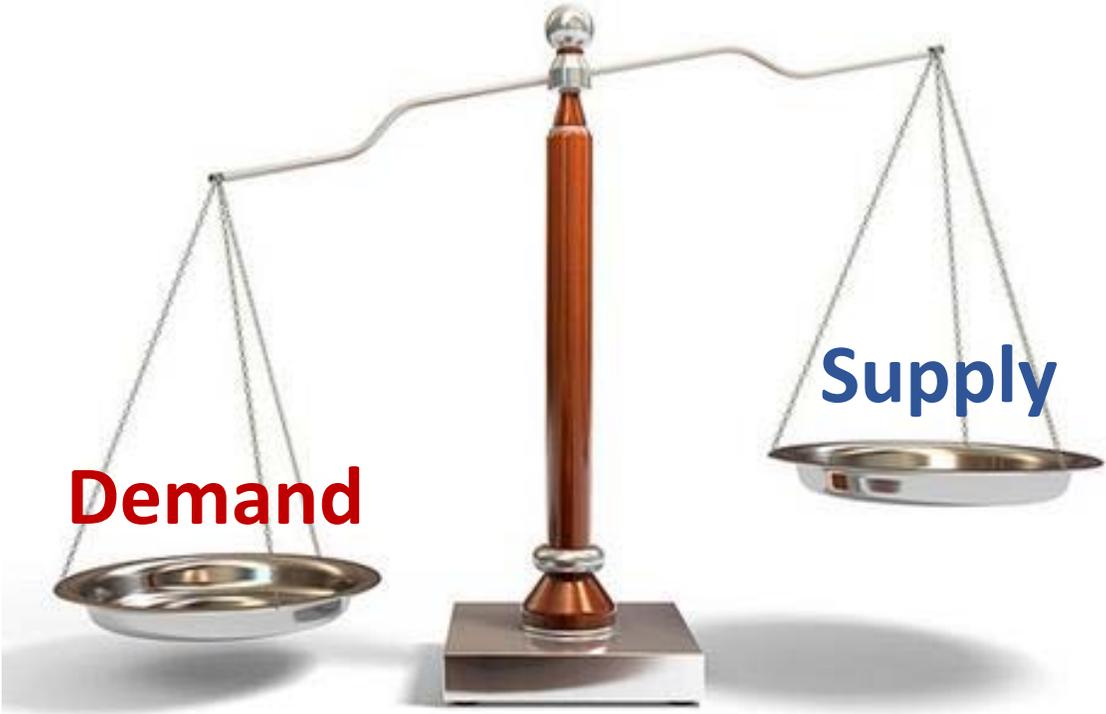


Aljurf et al Hem Onco Stem 2015



Gratwohl A et al Bone marrow transplant 2011

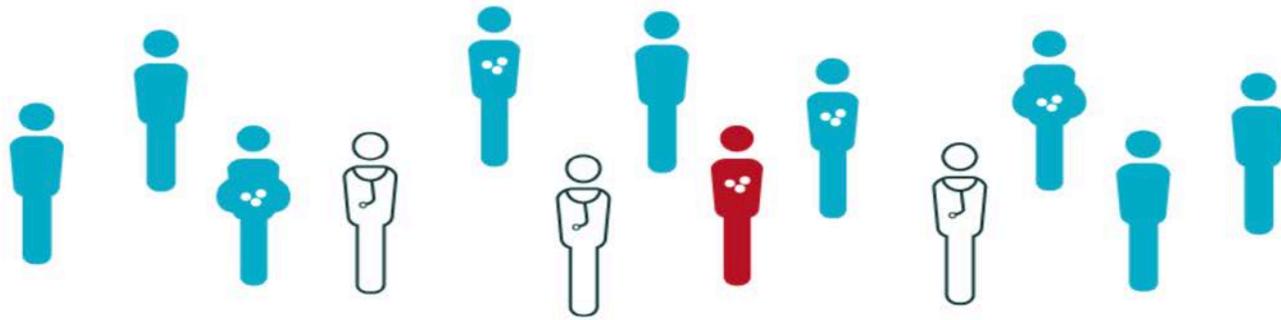
Alternate Stem Cell Donor





- 1 Aljurf et al Hem Onco Stem 2015
- 2 Alfraih et al Blood 2015; 126: (Supp. 1): 4387
- 3 Jawdat D et al. biology bone marrow transplant 2009

International Registries / Cord blood banks



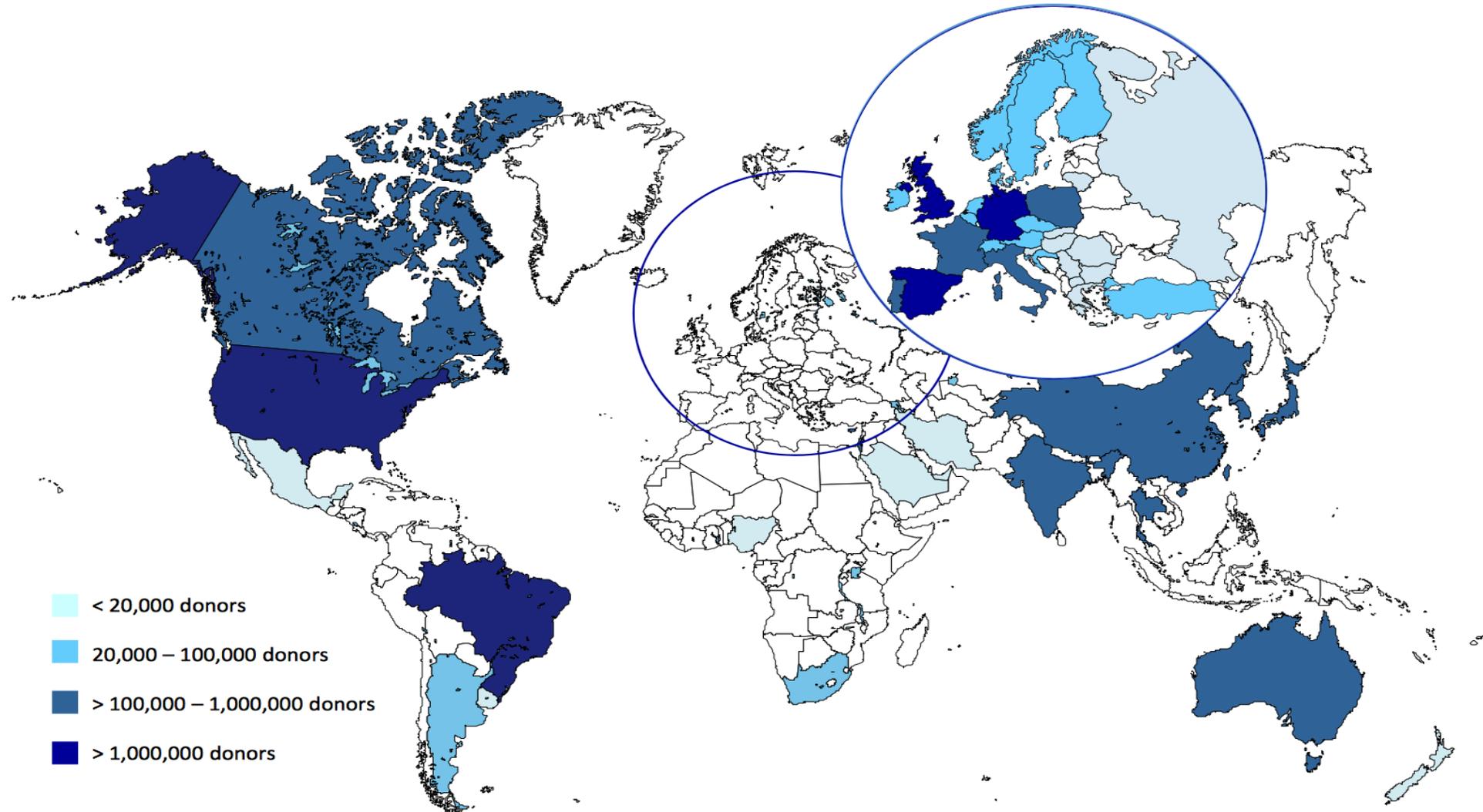
29,210,339
donors

1,210,000
transplantations

721,435
cord blood units

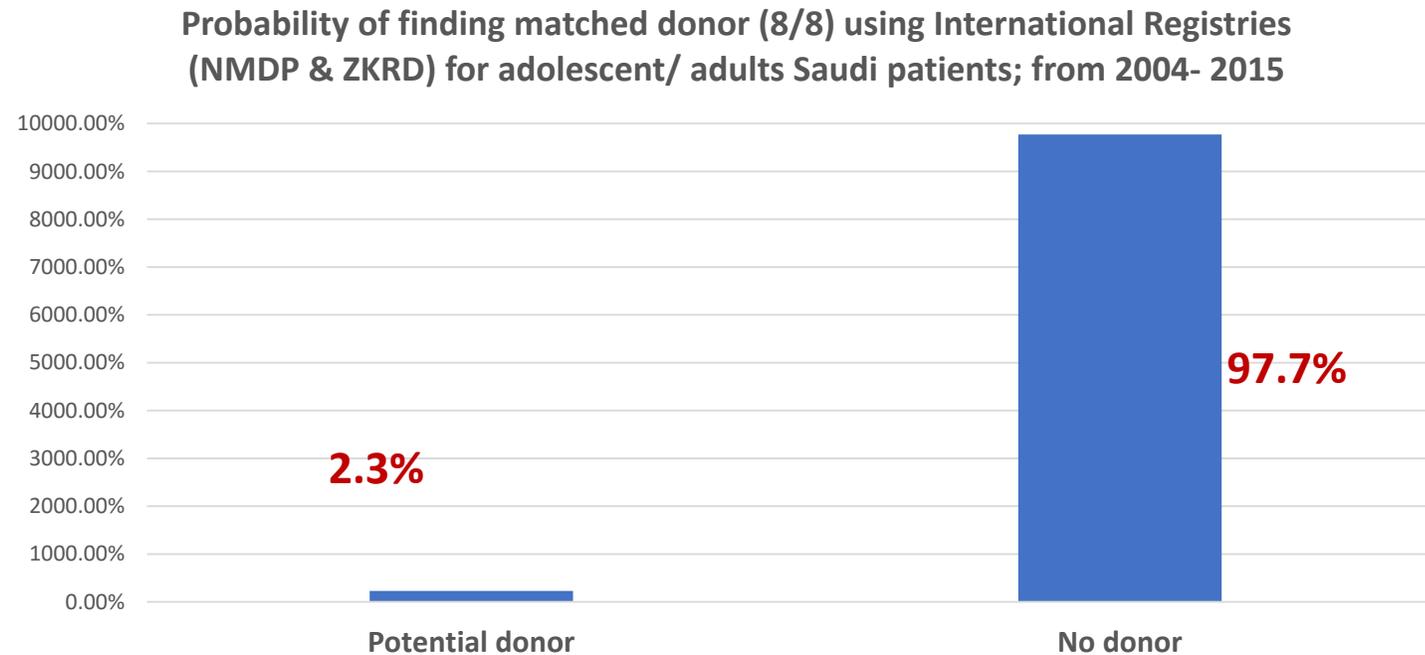
Number of ...	
Registries	76 (from 53 countries)
Cord blood banks	53 (from 36 countries)

DISTRIBUTION OF STEM CELL DONORS IN THE WORLD



Currently, the region lacks efficient large-scale stem cell donor registries.

Probability of finding donor from international registries



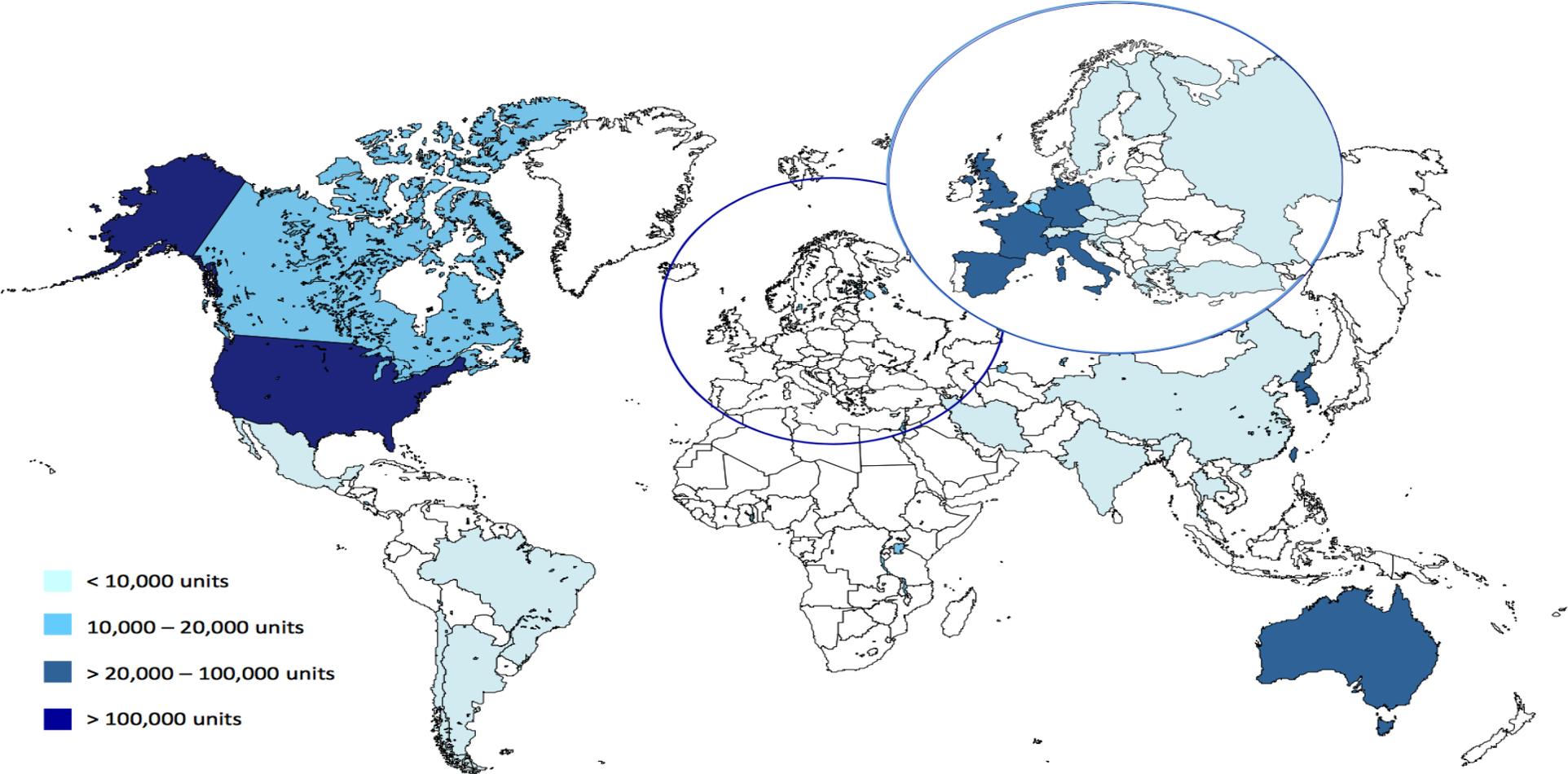
EMRO Stem Cell Donor Registry

- Establishing large-scale regional registry is highly warranted especially with high similarity in HLA profile.

World Marrow Donor Association (WMDA) : Registry Map



DISTRIBUTION OF UNRELATED CORD BLOOD UNITS IN THE WORLD AND IN EUROPE



Umbilical Cord Banks

- Currently, Umbilical cord blood is the main source of stem cells when alternate donor is considered especially for pediatrics.
- Unlisted / non-accredited cord banks

Haploidentical BMT

- Many ongoing programs in the region using haploidentical BMT.

Non-Sibling Related Donor

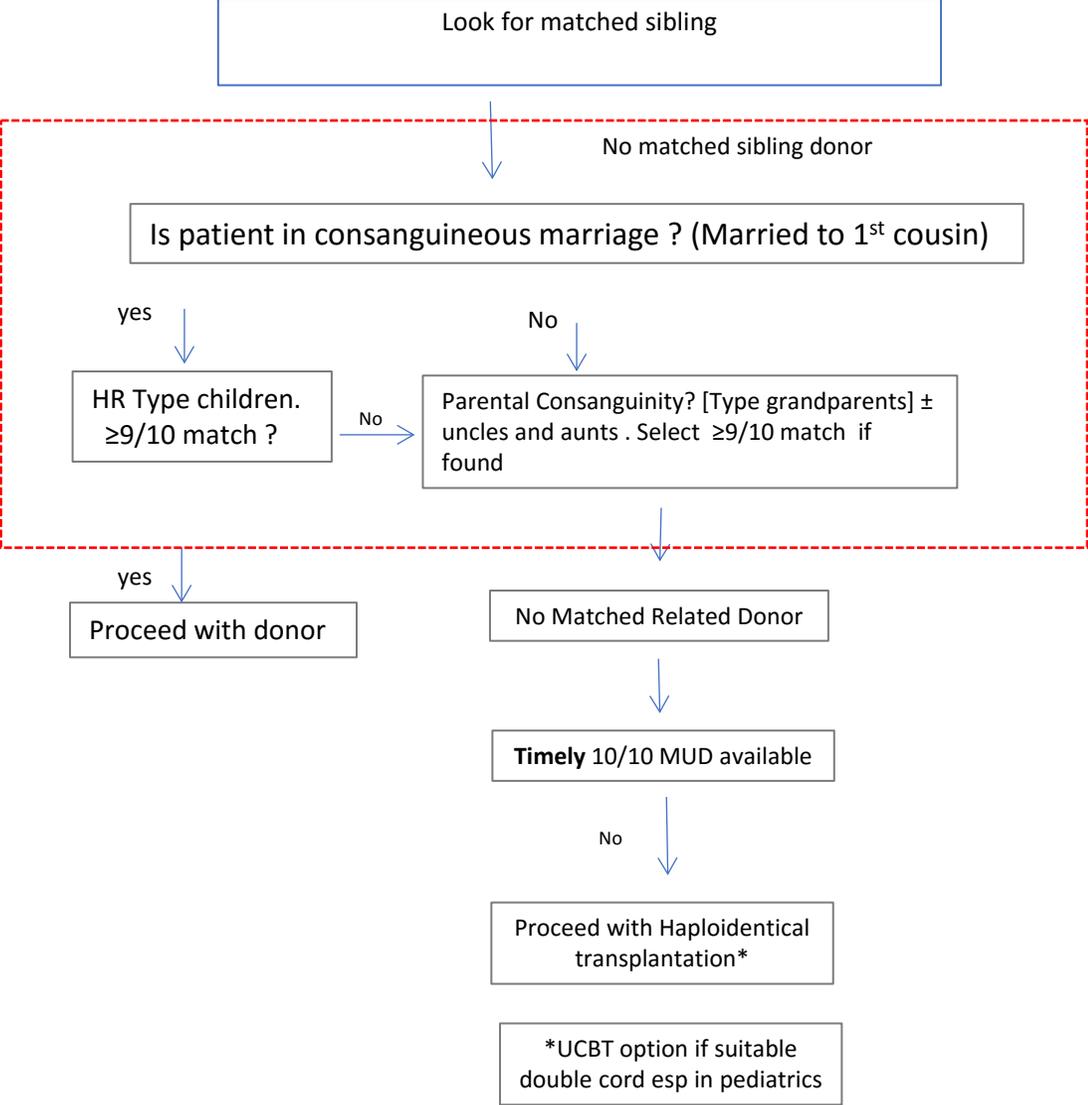
- With up to 30% consanguinity in some EMRO countries, there is approx. 20% chance of finding non-sibling related donor. ^{1, 2}

In EMRO region :

- Higher chance of finding a sibling or related donor
 - Larger family size increase chance of finding donor >60%
- Consanguinity :
 - Non-sibling match found in 20% of searches
- No large MUD registries

EMRO Donor Search Algorithm?

Proposed Donor Search Algorithm



Conclusion

- Although the chance of finding matched family member in EMRO is high but expanding the use of alternate stem cell programs is highly warranted.

Thank you

ORIGINAL ARTICLE

Efficiency of allogeneic hematopoietic SCT from HLA fully-matched non-sibling relatives: A new prospect of exploiting extended family search

AA Hamidieh, M Ostadali Dehaghi, P Paragomi, S Navaei, A Jalali, G Ghazizadeh Eslami, M Behfar and A Ghavamzadeh

- 109 non sibling matches found in 523 (20%) searches in Iran

Umbilical cord banking

The image shows a screenshot of a journal article page. The header is red with the journal title 'Transfusion and Apheresis Science' in white. Navigation links include 'Articles & Issues', 'CME', 'For Authors', 'Journal Info', 'Subscribe', 'Society Info', and 'More Periodicals'. A search bar is present with a dropdown menu set to 'All Content'. The article title is 'Cord blood banking activity in Iran National Cord Blood Bank: A two years experience'. The issue information is 'February 2014 Volume 50, Issue 1, Pages 129-135'. There are links for '< Previous Article' and 'Next Article >'. A 'ScienceDirect' link is provided for accessing the article. An 'Article Tools' section at the bottom right includes a PDF icon and the text 'PDF (368 KB)'.

Transfusion and Apheresis Science

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Cord blood banking activity in Iran National Cord Blood Bank: A two years experience

Article Tools

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