



Leiden University  
Medical Center



## *Eurotransplant Extra Mural Meeting 2019*

- **Results EPT 2018**
- **Positive cross match inventory**

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- EPT Results
  - HLA-Typing
  - Cross Matching
  - HLA-antibody screening
- Positive Cross Match Inventory
  - First results
  - Discussion points

## *EPT Results 2018; Typing (12 samples)*



- ✓ 63 centers participated
- ✓ Discrepancy rate 1,3 % (2017: 1,4%)
- ✓ One sample swap
- ✓ Number of discrepancies:

Class I		
HLA-A	HLA-B	HLA-Cw
1	1	3

Class II	
HLA-DRB1	HLA-DQB1
0	4

- ✓ 53 centers without discrepant results

## *EPT Results 2018; Cross Matching*



62 centers participated:

- ✓ 31 donor centers
- ✓ 31 recipient centers



In total 36 cross matches with 12 different blood samples could be performed.

# *EPT Results 2018; Cross Matching*



## Discrepancy Rates

Discrepancy rates Donor centers 2018									
Unseparated		T cells		B cells		Final results			Total 2017
(-) DTT	(+) DTT	(-) DTT	(+) DTT	(-) DTT	(+) DTT	(-) DTT	(+) DTT	Total	
4,1%	4,8%	3,5%	2,9%	2,6%	2,6%	4,7%	4,4%	3,9%	3,6%

Discrepancy rates Recipient centers 2018									
Unseparated		T cells		B cells		Final results			Total 2017
(-) DTT	(+) DTT	(-) DTT	(+) DTT	(-) DTT	(+) DTT	(-) DTT	(+) DTT	Total	
2,0%	3,1%	3,0%	4,4%	1,8%	3,3%	3,1%	3,1%	3,0%	3,3%

# *EPT Results 2018; Cross Matching*



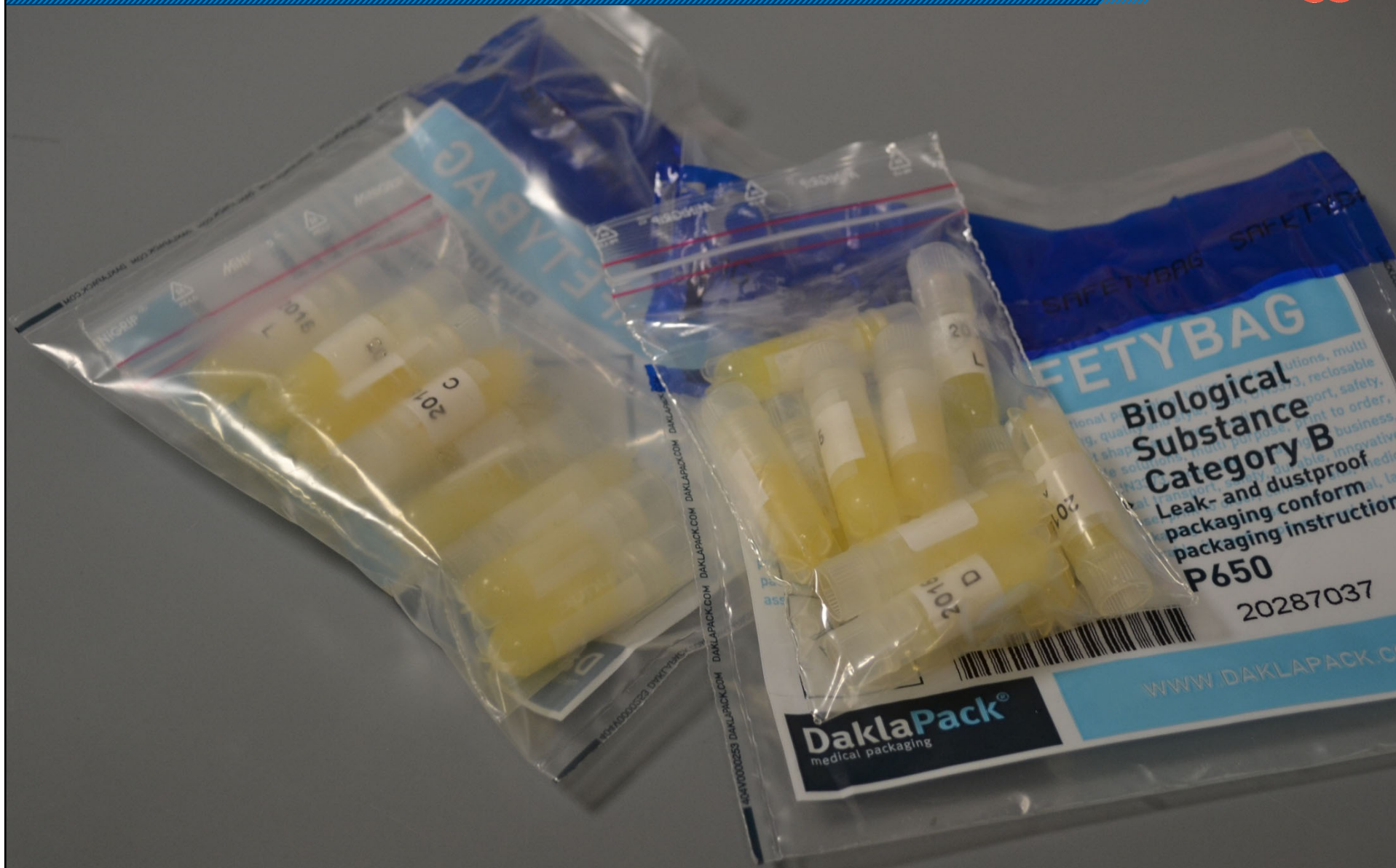
## Consensus rates

Consensus rates Donor centers 2018									
Unseparated		T cells		B cells		Final results			Total 2017
(-) DTT	(+) DTT	(-) DTT	(+) DTT	(-) DTT	(+) DTT	(-) DTT	(+) DTT	Total	
86%	86%	94%	92%	89%	89%	89%	86%	89%	90%

Consensus rates Recipient centers 2018									
Unseparated		T cells		B cells		Final results			Total 2017
(-) DTT	(+) DTT	(-) DTT	(+) DTT	(-) DTT	(+) DTT	(-) DTT	(+) DTT	Total	
89%	92%	94%	94%	67%	72%	92%	89%	86%	88%



## *EPT on Screening*



## *EPT Results 2018; Screening Detection*



- ✓ 12 sera were screened
- ✓ 68 centers participated

### **Discrepancy Rates Screening Detection 2018**

<b>Luminex</b>		<b>ELISA</b>		<b>CDC %PRA</b>		<b>Final Results</b>		<b>Final Results 2017</b>	
<b>Class I</b>	<b>Class II</b>	<b>Class I</b>	<b>Class II</b>	<b>% (-) DTT</b>	<b>% (+) DTT</b>	<b>Class I</b>	<b>Class II</b>	<b>Class I</b>	<b>Class II</b>
<b>0,0%</b>	<b>1,6%</b>	<b>0,0%</b>	<b>0,8%</b>	<b>4,4%</b>	<b>7,3%</b>	<b>0,7%</b>	<b>1,4%</b>	<b>2,8%</b>	<b>3,6%</b>



## *EPT Results 2018; Screening Identification CDC*



- ✓ 12 sera were screened
- ✓ 59 centers participated
- ✓ 17 consensus specificities were found
- ✓ 4 centers had over 25% missing consensus specificities



## *EPT Results 2018; Screening Identification SPA*



- SPA (4 centers)
- SPA Single Antigen (64 centers)
- SPA SA PLUS (2 centers)

SPA and SPA SA PLUS were not assessed, because of the low number of participating centers.

These centers will receive a certificate of participation.

SPA SA:            311 consensus specificities  
                         261 specificities for Class I  
                         50 specificities for Class II



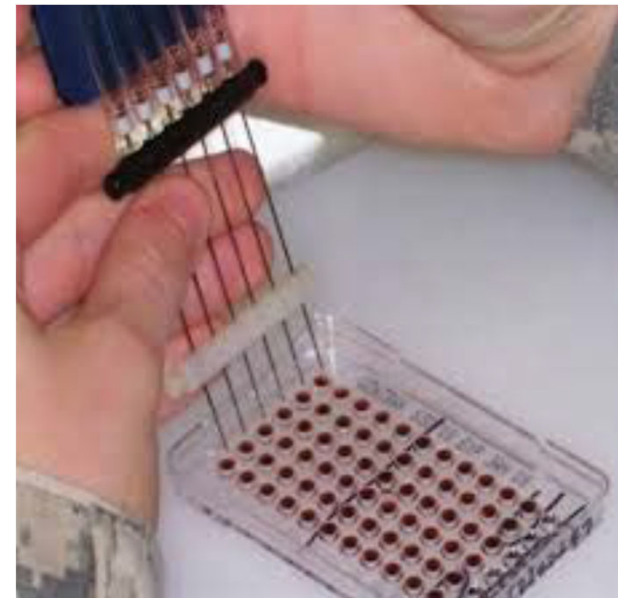
- EPT Results
  - ✓ HLA-Typing
  - ✓ Cross Matching
  - ✓ HLA-antibody screening
- Positive Cross Match Inventory
  - ✓ First results
  - ✓ Discussion points

## *Positive Cross Match Inventory*



### Goal:

In order to introduce virtual cross matching in Eurotransplant, positive donor center crossmatches should be something of the past. To make a proper inventory, recipient centers will be asked to comment why these crossmatches were likely assigned positive. (ETRL newsletter #9)



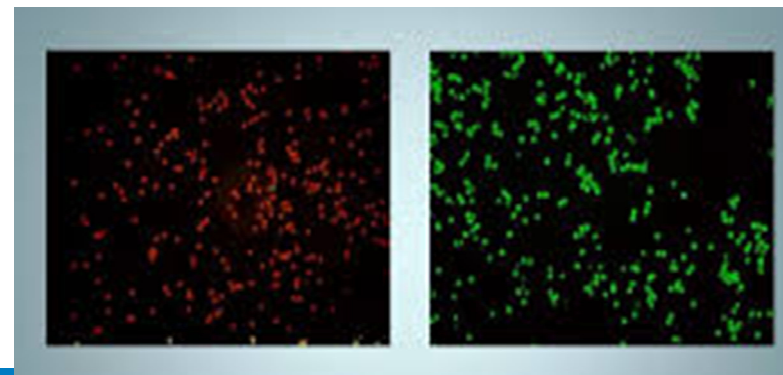
## *Positive Cross Match Inventory*



Start: May 28, 2018 (first upload beginning of June 2018)

Adaptation (24<sup>th</sup> of July 2018): Cross matches for ESP and for pancreas are no longer included in the inventory.  
ESP/Pancreas cross matches (n=31) before this date have been removed from the analysis.

Overview of results from May 28, 2018 until January 28, 2019  
(8 Months)





## Positive Cross Match Inventory



Eurotransplant Definition Donor Cross match:

All cross matches entered under “Donor Cross Match”, including cross matching for recipients from the own region and center.

When results of these cross matches are positive, you receive a request to comment.

EUROTRANSPLANT Crossmatches

ETKAS ESP ESDP Pancreas Liver Lung

ETKAS

\* Donor:

Donor:  Date of birth:  HLA full typing:   
Center:  ABO:  HLA match typing:

Organ Match

Action View Format

Match type Date and time

No rows found

Donor crossmatch Regional crossmatch Recipient overview

Action View Format

Date ET last notified Com? Rank ET Nr Name Center

No rows found



## *Positive Cross Match Inventory*



Data analyzed from 28-05-2018 until 28-01-2019 (8 months)

Total number of positive cross matches: 559  
(approximately 6% of all donor cross matches)

Number with explanation: 459

Without ESP/pancreas cross matches: 428

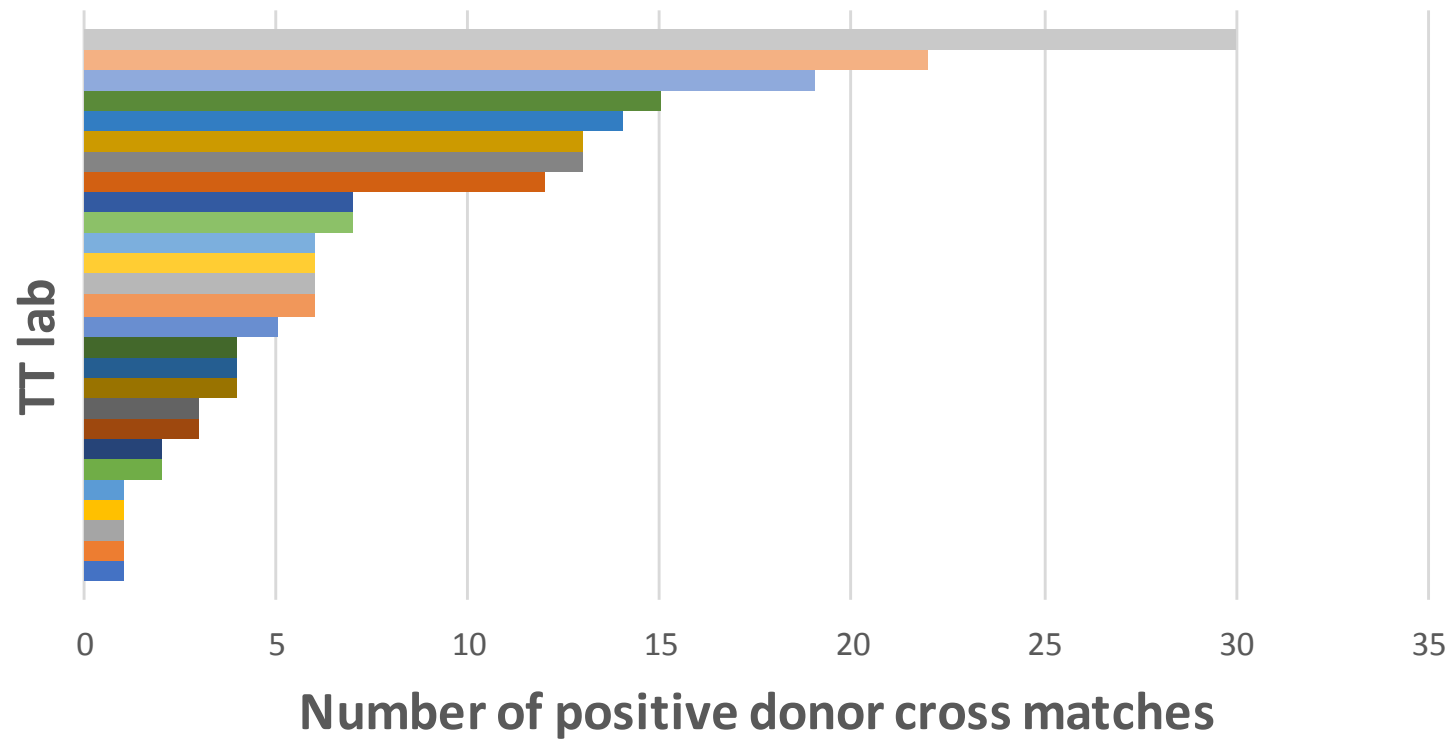
Donor\* cross matches only: **208**

*\* Excluded are regional and local cross matches, cross matches done for a recipient in a different donor center in the same region are included*

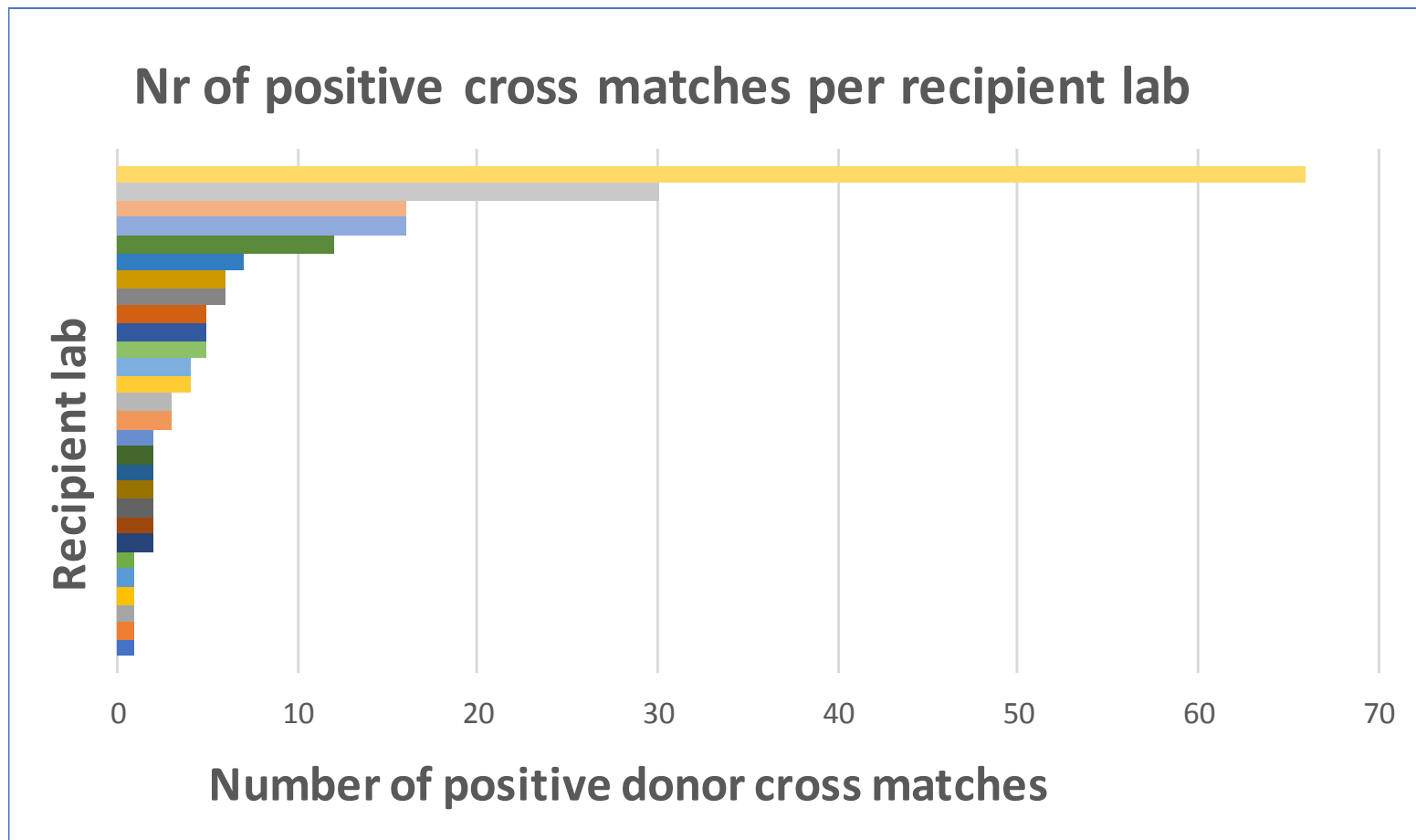
## *Positive Cross Match Inventory*



**Nr of positive crossmatches per TT lab**

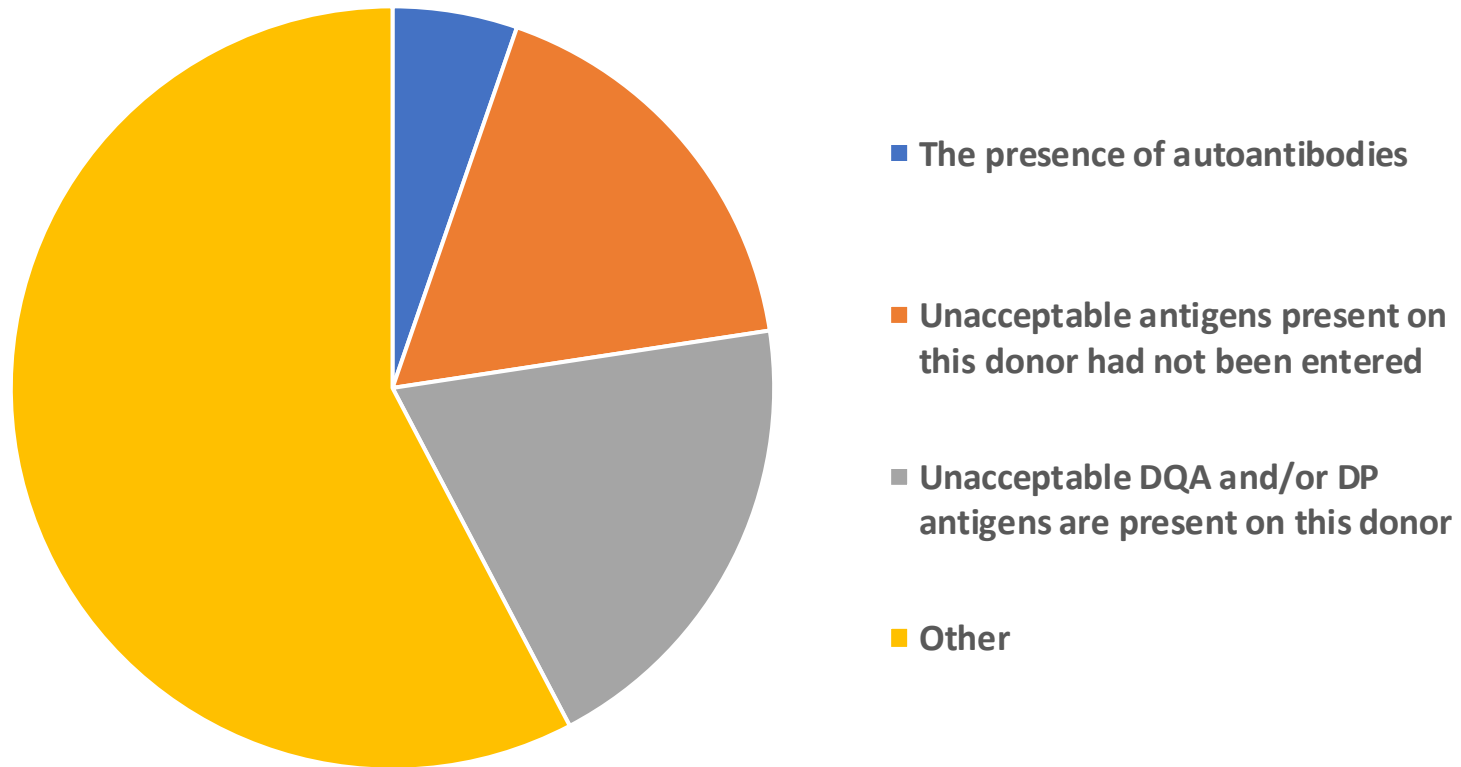


## *Positive Cross Match Inventory*



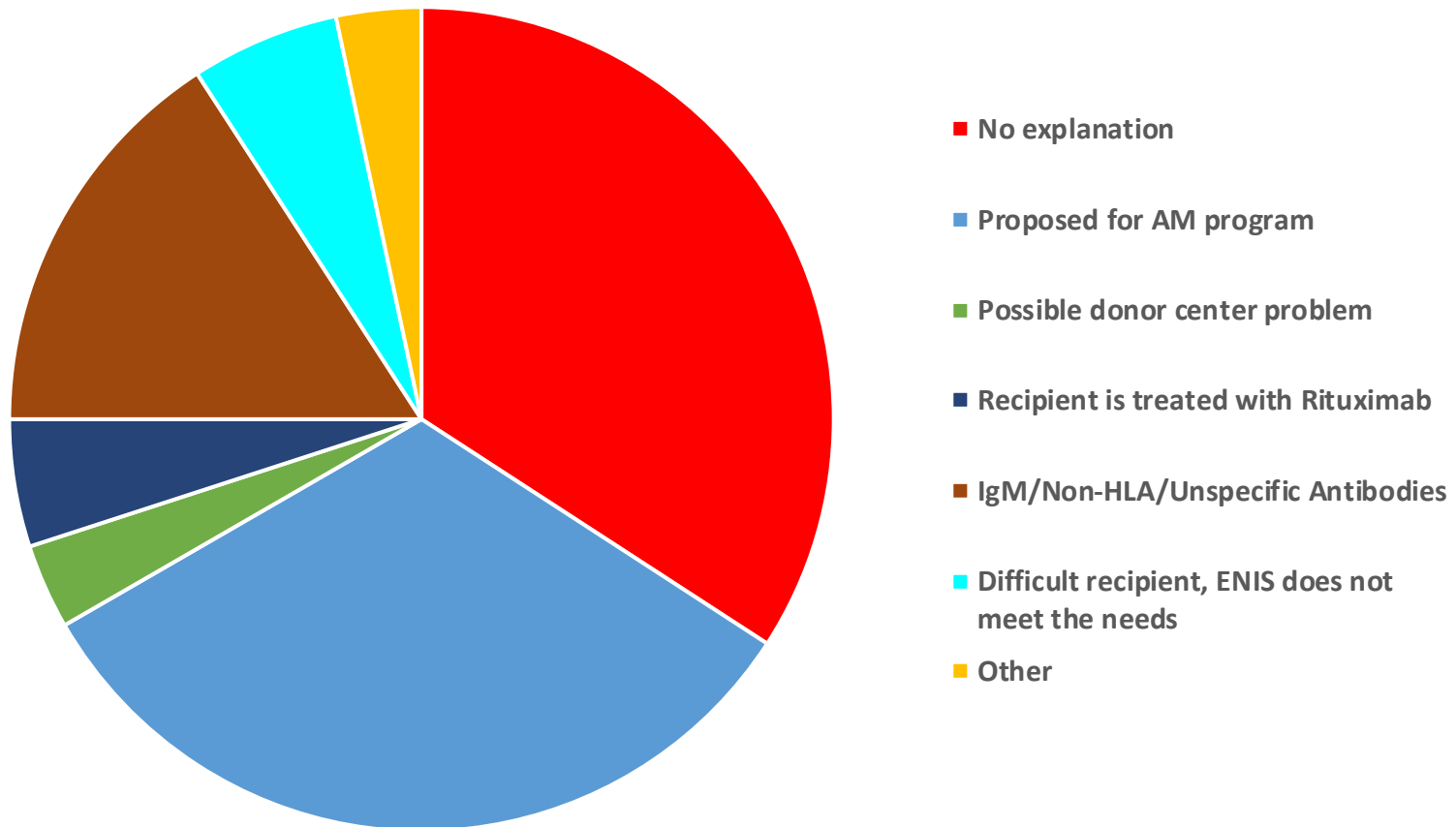


Distribution of comments on positive cross matches





Comments: Distribution of "other" (120 cross matches)



## *Positive Cross Match Inventory; Discussion*



Auto antibody status:

Not known (DNT): 113 cases

Positive (DPos): 9 cases

Negative (Dneg): 86 cases

The inventory shows that in 11 cases the explanation for the positive cross match is the presence of auto antibodies (of which only 1 was registered as Dpos, 8 were registered DNT, 2 were registered DNeg)



## *Positive Cross Match Inventory; UAG not entered*



Number of pos cross matches	
Total No UAG	55
No UAG HPRA>6%	47
No UAG CPRA>6%	34

### Causes:

- Sera without antibodies of partnering donor-labs in a region (Germany) are exchanged.
- Some delay between testing and entry of UAG
- CDC positivity without luminex positivity
- Mistakes in ENIS: Please always double check if your entry in ENIS is correct and nothing is removed

## *Positive Cross Match Inventory; B-cell cross match*



In 10 cases the cross match final result is positive because of a positive B-cell cross match.

In 8 of these cases the cross match is performed for a partnering donor center in the region (Germany)

In one of these cases UAG: DQ7-8-9, donor carries DQ7

1 of the 10 cases shows a problem

The ET Manual states:

*For the allocation crossmatch procedure, the TTC must use CDC on unseparated cells or T cells (B cells is optional, but should not be used for final results of the crossmatch)*



## *Positive Cross Match Inventory; Concluding Remarks*

- Response is good, all centers send their comments
- Need for more frequent testing and entry of autologous status
- Better not ship CDC positive, Luminex negative sera for donor cross matches.
  - These sera will give rise to unnecessary positive cross matches.
  - In the near future, a recipient is only immunized when UAG are defined.
- B-cell cross match results must not be included for the final result in allocation cross matches.



## *Positive Cross Match Inventory; Concluding Remarks*

Introduce virtual cross matching with caution:

- ✓ At this moment approximately 6% of the donor cross matches as defined by Eurotransplant is positive.
- ✓ Need for entry of more unacceptable antigens (DP/DQA) and the possibility to enter allele specific antibodies in ENIS.
- ✓ In the near future, a recipient will only be considered immunized when UAG are defined.

## *Thank You!*

*the Screening and Tissue Typing Center NLB,  
all participants of the EPT and Eurotransplant*

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