



1st Transfusion Seminar

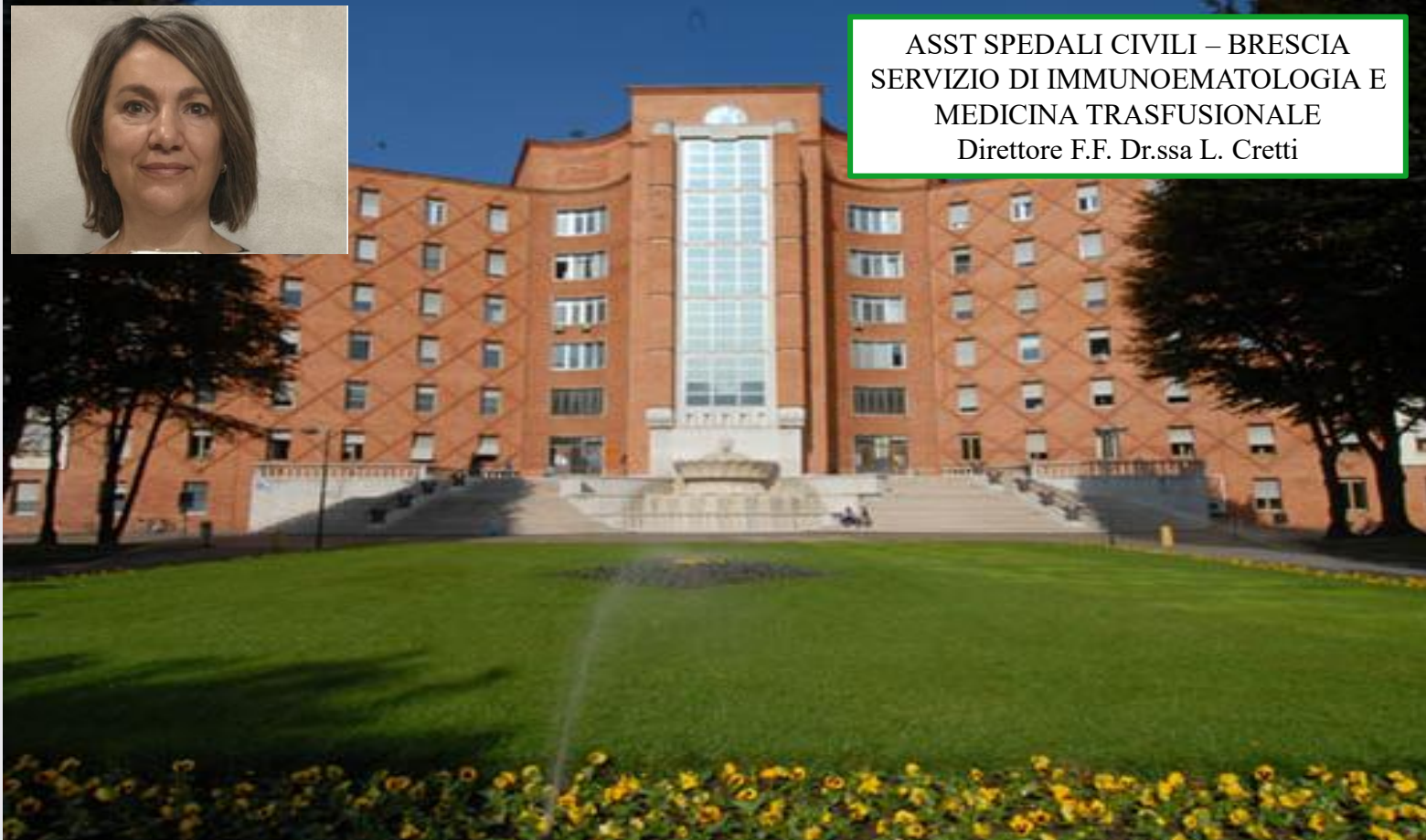
October 16-17, 2025 • Vilnius

werfen

2025
EEMEA
SCIENTIFIC
SEMINARS



ASST SPEDALI CIVILI – BRESCIA
SERVIZIO DI IMMUNOEMATOLOGIA E
MEDICINA TRASFUSIONALE
Direttore F.F. Dr.ssa L. Cretti



*Redefining
immunoematology:
a technological journey
toward diagnostic
excellence*

Dr. Susanna Bresciani Immunoematology Laboratory and Blood Bank, Brescia - Italy



Redefining immunohematology: a technological journey toward diagnostic excellence

Why??



Technological progress

2000- 2025



Karl Landsteiner

1868-1943



How to use so
many technologies





Italy



Italian blood
transfusion
system

Donors 3%
(1.7 million)

Age	2024
Total donors 18-65	1.678.573 (4.6%)
Total population 18-65	36.449.573 (62%)



L. Catalano, CNS

66% males

34% females

unpaid voluntary
donation

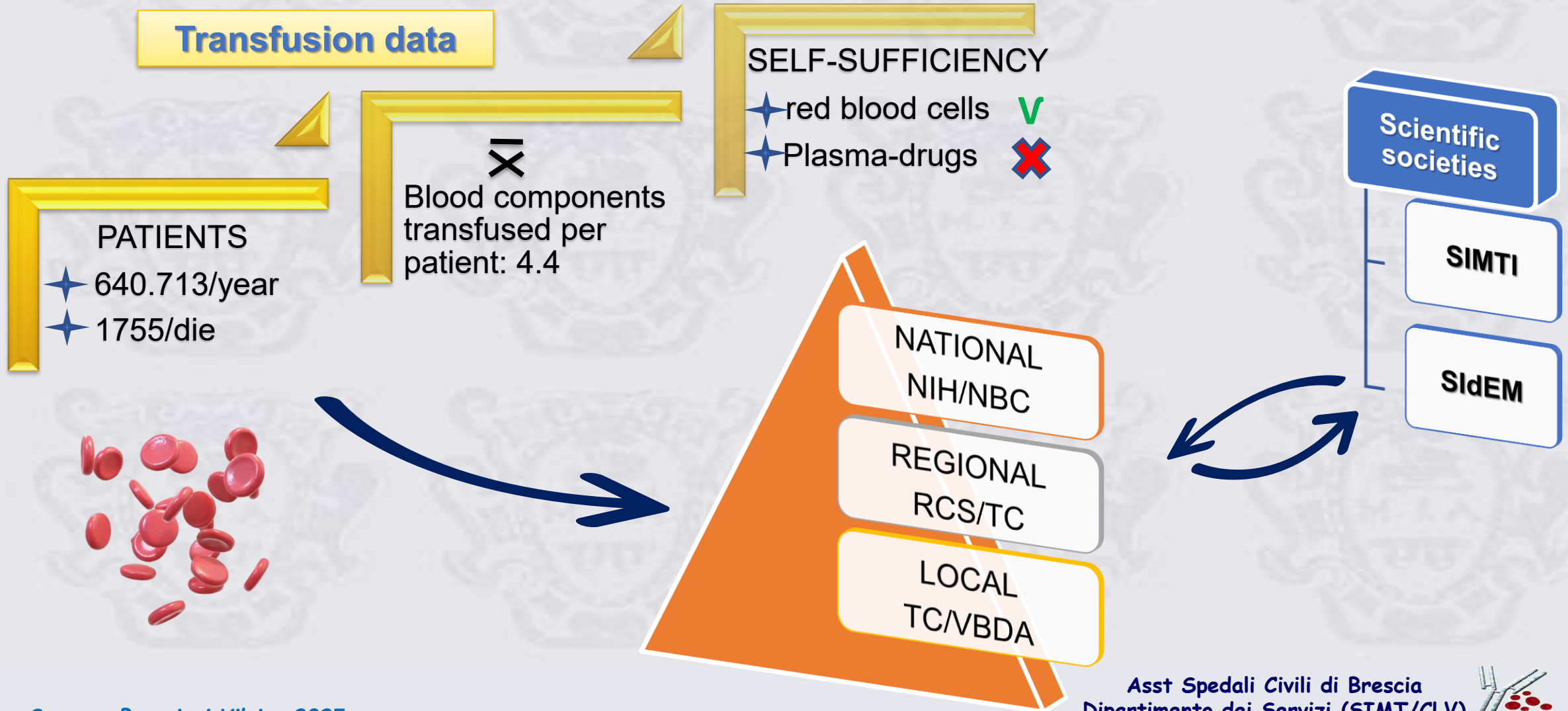
3 million
donation/year
d.r. 1.8

84%
whole blood

16%
Apheresis



ITALIAN BLOOD TRANSFUSION SYSTEM



ITALIAN BLOOD TRANSFUSION SYSTEM



Standard per i Laboratori di Immunoematologia di Riferimento (LIR) e di Biologia Molecolare (LBM)

Lombardia



Rare blood bank

SICILIA

Sicilia

RIL

Reference
Immunohematology
Laboratory

RILS

Serology
100 study/year

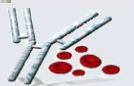
RILMB

Molecular Biology
500 tests/year

**RIL
network**

support

**Safety
and
afficiency**



ITALIAN BLOOD TRANSFUSION SYSTEM



Brescia Province

Lombardia Region (LR)

12 provinces and ~550k blood collections/y

- **Before 2014:** LR had 36 TC with their own Blood Component Processing and Validation Center (BCPVC)
- **After 2014:** rationalization of the network into 9 macro areas lead by Blood Banks, following national and regional guidelines as in other EU countries

Spedali Civili hospital in Brescia



+60
Specialties

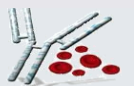
1.600
Beds

40 k
surgeries

5 million
ambulatory
care services

Immunohaematology and
transfusion medicine service
(SIMT)

Brescia Blood Bank
(BBB)



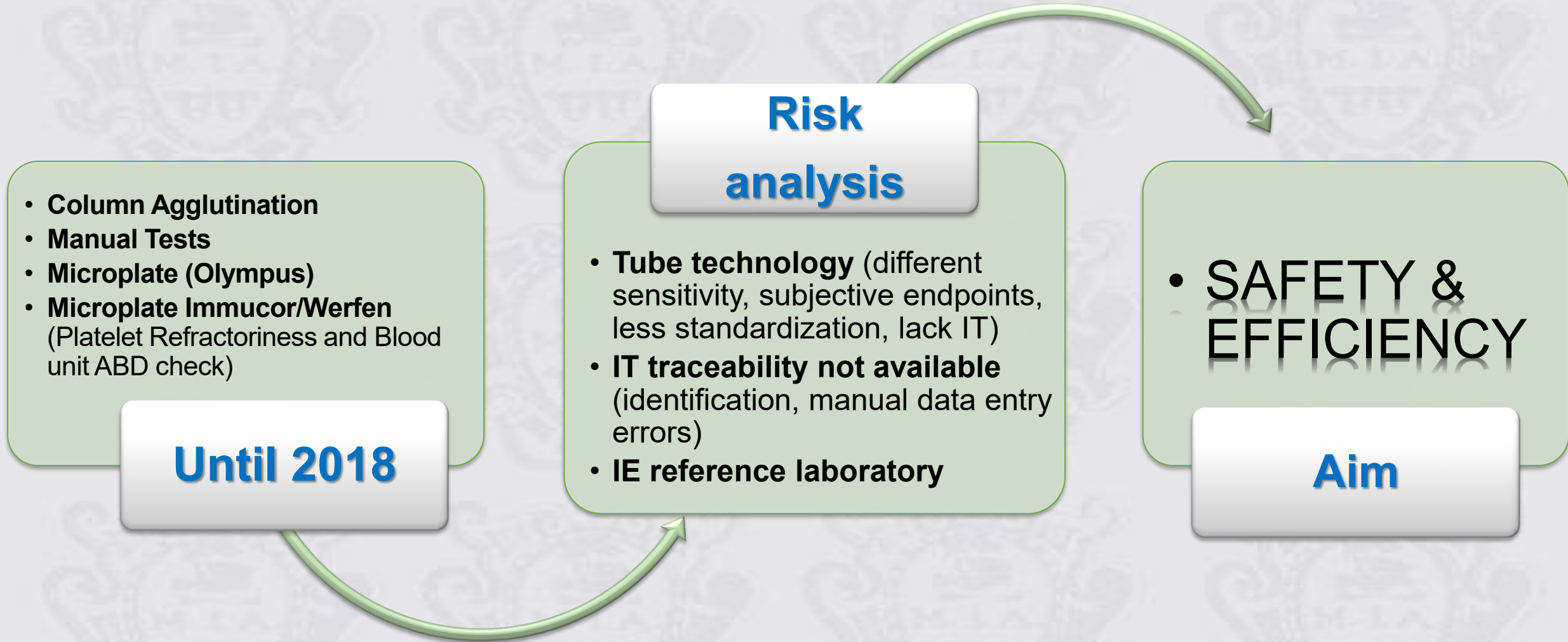
- 21 VBDA centers (AVIS/CRI)
- 3 hospitals into the Province
- 65k donations
- 130k Blood products per year
- 12k tests weekly for biological qualification of blood components
- Support 60k transfusions per year



- 45k transfusion requests/y
- RILS in Brescia province
- 1500 IAT ID/y: single and multiple immunizations for about 866 patients known and unknown (surgical, pregnant women, haematology /BMT/kidney patients transplant)
- 35/y PLT suspected refractoriness with CCI evaluation and follow-up
- An average of 10-15 studies of suspected FNAIT/y
- 200k tests per year for all activities related to transfusion medicine



The evolution



Serological investigations

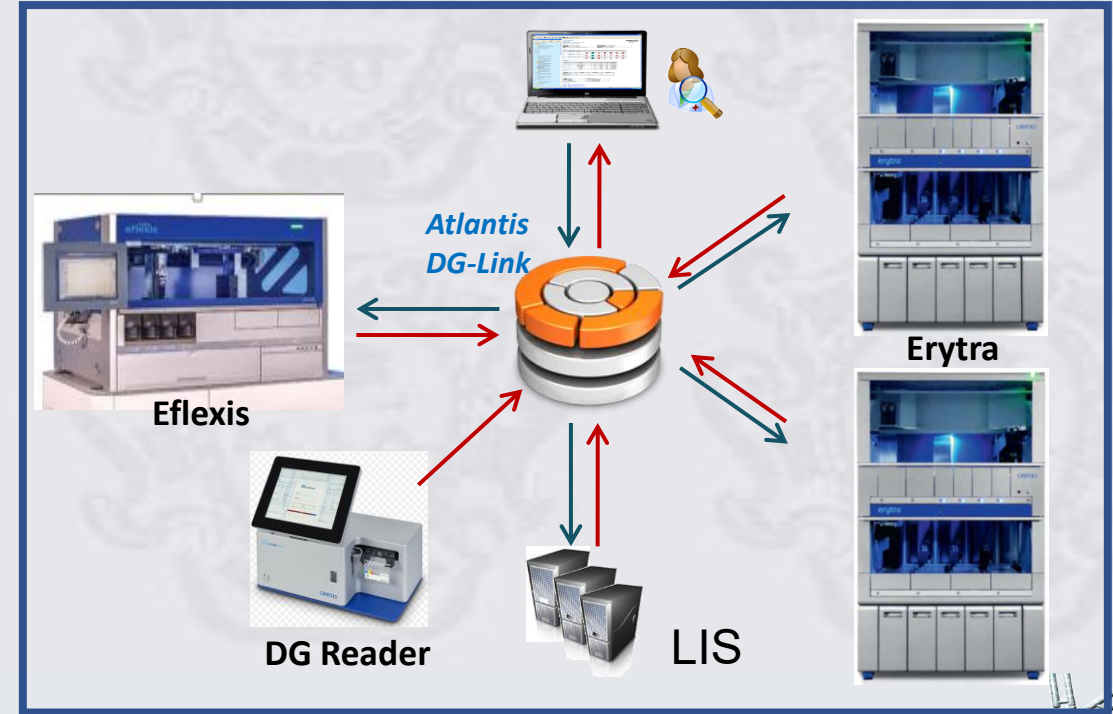
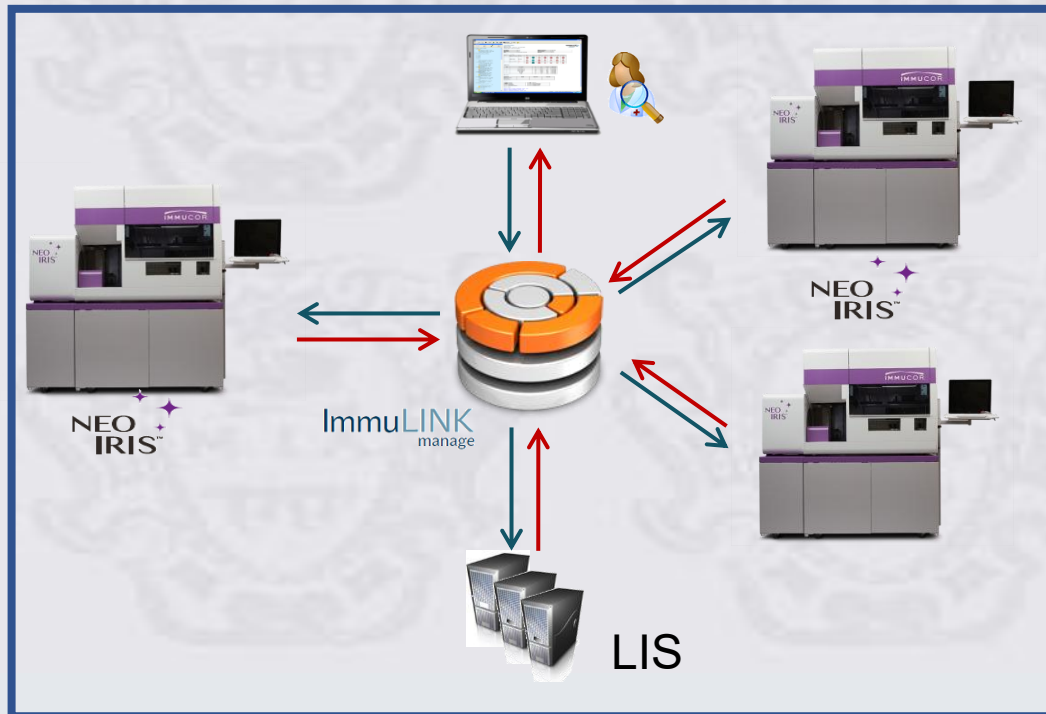


First
issue

Avoid pre-analytical errors
Avoid manual entry errors

Problem
solving

IT automation
great relevance
Check-in/results



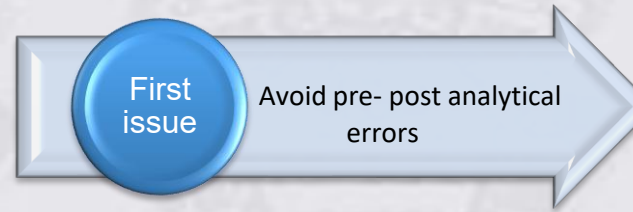
Serological investigations

ANNUAL SHOT REPORT 2024

SHOT is affiliated to the Royal College of Pathologists
This report is produced by SHOT working with MHRA



Training
Training
Training



17

Laboratory Errors n=869 (601 transfused errors and 268 near miss)

Information technology (IT)

IT was identified as a contributory factor in 329/601 (54.7%) laboratory errors. The most common factor was warning flags not being actioned, 52/329 (15.8%), followed by a lack of functionality to support safe transfusion practice, 47/329 (14.3%), and systems not being used correctly, 32/329 (9.7%) (Table 17.3).

Table 17.3: IT impact on laboratory errors in 2024 (n=329)

Type of IT error	Number of reports
Warning flag in place but not heeded	52
Lack of functionality/algorithms in the system to support safe practice	47
System not used correctly	32
Computer or other IT systems failure	31
IT could have prevented the error	28
Failure to use flags and/or logic rules	26
Failure to link, merge or reconcile computer records	23
Warning flag not updated or disabled	15
Failure to consult or identify historical record	13
Other	13
Incorrect patient details selected from IT system	12
System not configured correctly	11
Lack of interfacing/interoperability	10
Incorrect results entered or accessed manually	9
Printing error	7
Total	329



Serological investigations

Second issue

Choose the correct reagents

Problem solving

Analyse all available clones by balancing the different technologies



ABO

m-IgM-A

- 9113D10 (T)
- Birma 1 (P/C)
- F98 7C6 (P)

Blend m-IgM+IgG-A

- 16243G2+16247E6 (C)

m-IgM-B

- 9621A8 (T)
- LB-2 (P/C)
- F843D6+F972D6 (P)
- 9621A8 (C)

ABO

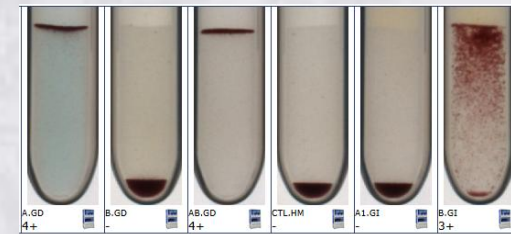
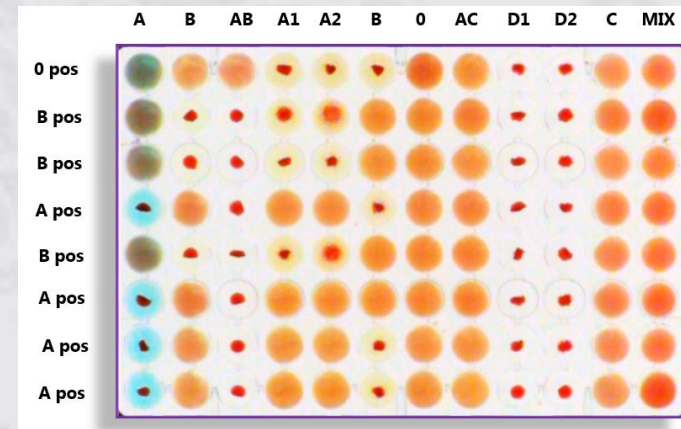
m-IgM-AB

- 152D12+9113D10+ES15 (T)
- Birma1+ES4+ES15 (P)
- F98 7C6+F843D6+F972D6+F1257B6 (P)
- LA-2+LB-2+ES-15 (C)

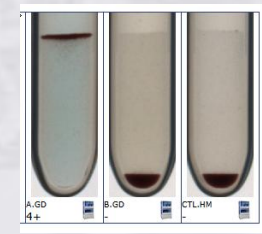
Blend m-IgM+IgG-AB

- 16245F11D8+16247E6+7821D9 (C)

A1; A2; B; 0 red cell
for reverse test
(T/C/P)



ABO



ABOctl

(T): Tube; (C): Columnn; (P): Plate



Serological investigations

Second issue

Choose the correct reagents

Problem solving

Analyse all available clones by balancing the different technologies

RhDVI+

m-IgM-DA

- ESD1M+P3x61 (C)
- RUM-1+ESD-1M (C)
- LDM1 + ESD1M (P)

m-IgG-DA

- D415 1E4 (P)
- MS26 (T)

RhDVI+

m-IgG-IAT

- D415 1E4 (P)*
- ESD1 (C)
- MS-26 +RUM1(T)

RhDVI-

m-IgM-DA

- RUM1 (P/T)
- D175-2 (P)*
- MS-201 (C/T)

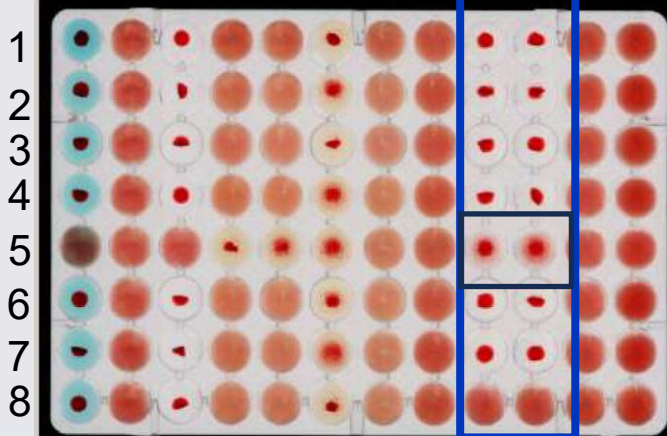
RhD epitope

m-IgG-IAT

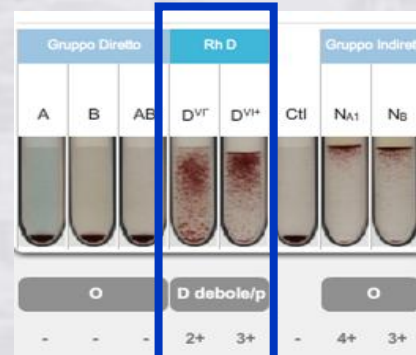
- Antiserum 1-5
- m-IgM-IAT**
- Antiserum 6

(T): Tube; (C): Column; (P): Plate; *blend IgG+IgM for D weak IAT

A B ABA1A2 B 0 ACD D cti Dil.



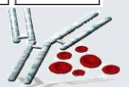
ABO Rh 1^



VI- VI+



Zellin Cell line Lignée cellulaire Linea cellulare Clonale	Anti-D	D II	D III	D IVa	D IVb	D V	D VI	D VII	DFR	DET	DHAR	Reaktionen Reactions Reactions Reactions
LHM76/55 (lgG)	1	+	+	-	-	+	+	+	+	-	-	
LHM77/64 (lgG)	2	-	+	-	-	+	+	+	+	-	-	
LHM76/45 (lgG)	3	+	+	-	-	-	-	-	-	-	-	
LHM59/19 (lgG)	4	+	+	+	+	+	-	+	+	+	-	
LHM169/80 (lgG)	5	+	+	+	+	+	-	+	+	+	-	
LDM1 (lgM)	6	+	+	+	+	+	-	+	+	+	+	



Serological investigations

Second
issue

Choose the
correct reagents

Problem
solving

Analyse all available clones by
balancing the different technologies

CcEe

m-IgM-DA

- Anti-C: MS-24 (P/C/T); MS-273 (P)
- Anti-E: MS-80+Ms-258 (P/T); MS-12+260 (P) clone906 (C)
- Anti-c: MS-33 (P/C/T); MS35 (P)
- Anti-e: MS16+31+63; MS62+369; MS21+63+16(P/C/T); MS-62+MS-69 (P)

- Cw
- MNSs
- P1
- Lea/b
- Lua/b
- Kpa/b
- Fya/b
- Jka/b
- Kk

Kell

m-IgM-DA

- MS-56 (P/C/T)
- AEK4 (P)

Cellano

m-IgG-IAT

P3A1180L67 (P/C)

Kidd

m-IgM-DA

- MS-15/MS-8 (P/C)

Duffy

m-IgG-IAT

- P3TIM (P/C)

m-IgM-DA

-SpA264LBg1 (P/C)

MNSs

m-IgM-DA

- M11H0 (P)
- 1422C7 (P)
- MS-94 (P/C)
- LM110/140;LN3/MN879(C)
- P3BER (C)

(T): Tube; (C): Column; (P): Plate



Serological investigations



Choose the
correct reagents



Analyse all available combinations
of Panels

Irregular Ab Test (IAT)

Screening

- 3 cells (T/C/P)
- 2 cells (P)

ID Test

- 10/11 cells (T/C)
- 14 cells (P)

Homo and Hetrozygous

Column

ID Identisera

- treated/untreated, 11 cells

ID Data Cyte

- untreated, 11 cells

IAT 3 cells screening

Solid Phase

Capture-R ready

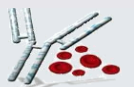
- ID 14 cells
- Extend-1, 14 cells
- Extend-2, 14 cells

Manual

Panocell-10

- ID, 10 cells

14 cells for ID



Serological investigations

Second
issue

Choose the
correct reagents

Problem
solving

Analyse all available special tech.

Special techniques

Irregular Ab Test
(IAT)

ID Test
- Special tech.

Techniques
for removing
Ab

Ag
inactivation

DTT

Enzyme
papain

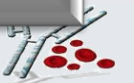
Auto/allo/hetero
Absorption
ZZAP

Techniques for
reducing/isolating
Ab activity

Inhibition tech.
sCD38

Elution

Sulphydryl reagents
IgM/IgG



Serological investigations

Second
issue

Choose the
correct reagents

Problem
solving

Analyse all available special tech.

PLT

Irregular Ab Test

- Refractoriness
- FNAIT

..... Adressed later

Special techniques

Refractoriness

Ab
Screening
(SPRCA)

Ab-ID
- ELISA (Pak plus)
- Luminex (Pak-lx)

Cross-match
(SPRCA)

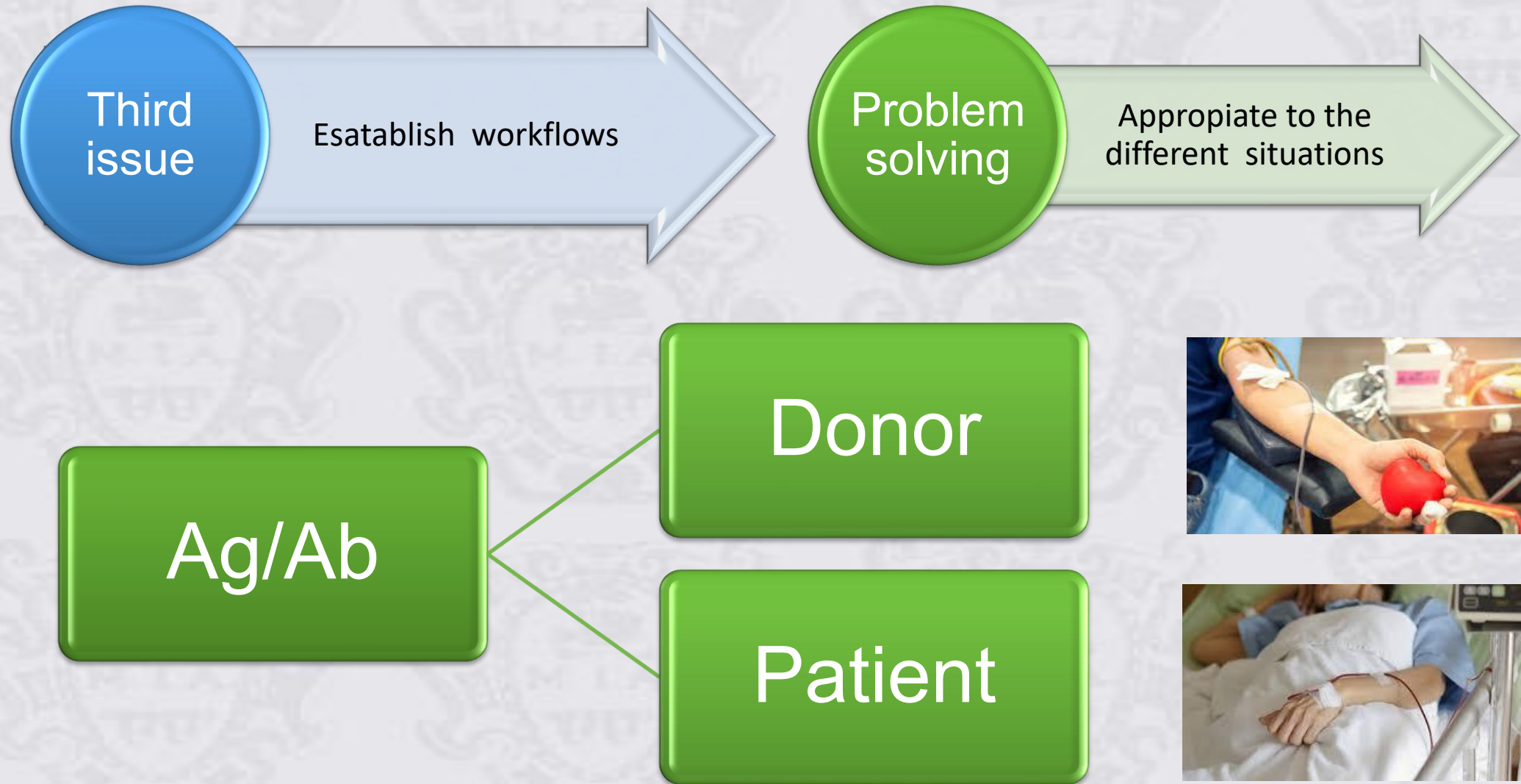
FNAIT

Ab Screening/ID
(SPRCA/ELISA/Luminex)

HPA1a type Ag

Differential Cross-match
(SPRCA)

Serological investigations

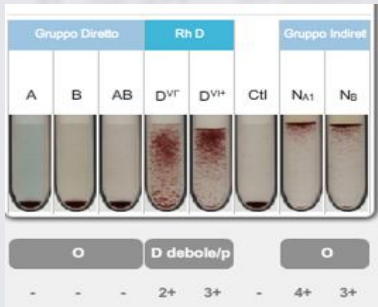
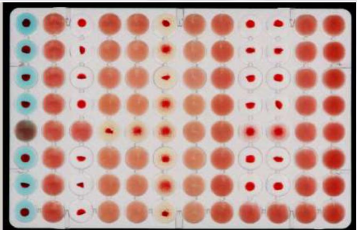


ABO Blood Type management

- Plate (P) for Donors/patients
- CAT for pre transfusion tests

ABO

P: F- A,B,AB and R- A1,A2,B,0
CAT: F- A,B,AB and R-A1,B



Algorithm

Concordant

Report BT

Discrepant

Reverse

Weak or no reaction

Perform CAT/P/T

▪Enhance reaction:

- 1.Cold
- 2.Plasma/cell ratio

Report BT

Additional reaction

Perform CAT/P/T;

Perform Cold/Warm test

▪(Assess subject: perform IAT/DAT)

Report BT

Forward

Weak or no reaction

Perform:

- CAT/P/T
- Absorption elution studies

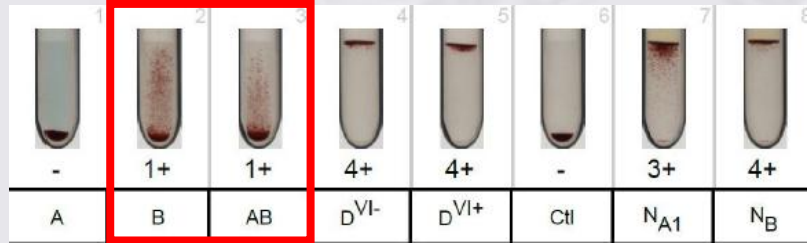
Call donor/patient for 2^a sample

Send to RILMB

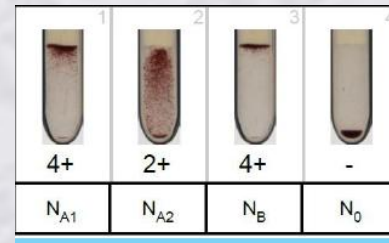
Report BT

ABO discrepancy

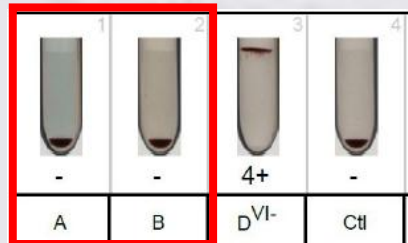
CAT/Plate: interference related to the medium



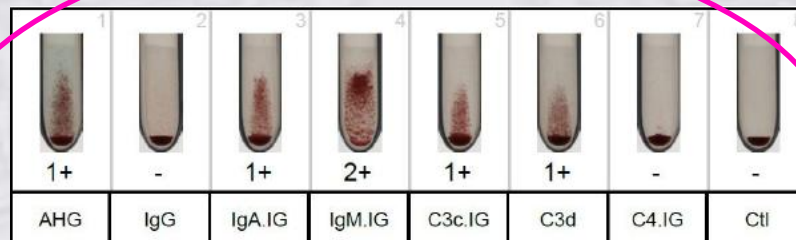
first clone



Extended reverse



second clone



DAT

ABS017 - Importanza dell'integrazione di diversi sistemi diagnostici nelle indagini di immunoematologia: descrizione di un caso

Sara Merelli ⁽¹⁾ - Fiorina Rocca ⁽¹⁾ - Enrica Prati ⁽¹⁾ - Susanna Bresciani ⁽¹⁾ - Alessandra Tiburzi ⁽¹⁾ - Laura Lena ⁽¹⁾ - Sabrina Petullà ⁽¹⁾ - Barbara Rossi ⁽¹⁾ - Camillo Almici ⁽¹⁾

SIMT, ASST Spedali Civili Brescia, Brescia ⁽¹⁾



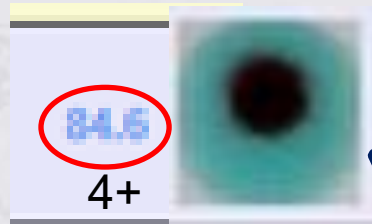
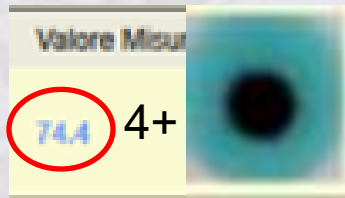
Esame strumento	Modificato	Valore Originale	Immagine
Anti-A (10ml)		0	
Anti-B (10ml)		0	
Anti-AB (10ml)		0	
A1-Cell (10ml)		4+	
A2-Cell (10ml)		3+	
B-Cell (10ml)		4+	
O-Cell (10ml)		0	
Galileo diluent		0	
Anti-DNovaclone (10ml)		4+	
OC Anti-D (10ml)		4+	
Rh ctrl (10ml)		0	

microplate

- Female, 82 years old
- orthopaedic patient
- No transfusion
- unknown blood type
- following a blood request, pre-transfusion tests are Performed:
- ABO CAT discrepant (2 different clone)
- DAT pos IgA, IgM, C3c and C3d.
- ABO liquid phase microplate concordant- no interference
- ABO F/R liquid phase in tube: concordant
- IAT negative
- Report group



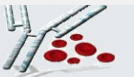
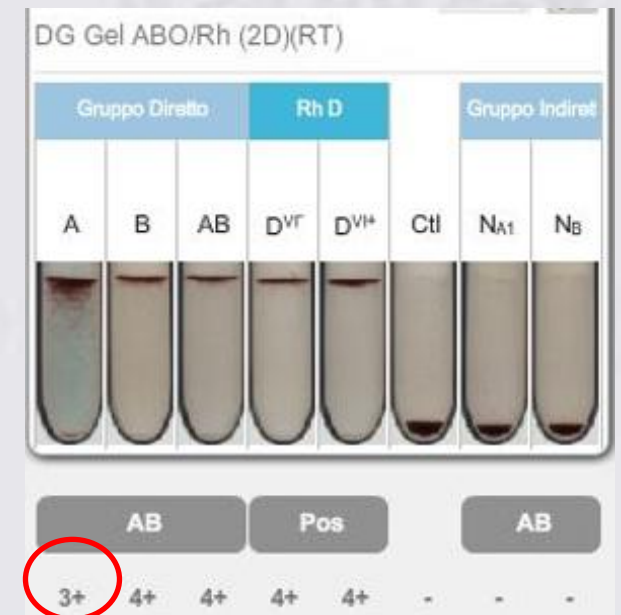
AB0: CAT/Plate: A2B donor unrecognized
(technician's evaluation-expertise)



Esame strumento	Agglutination grade	Agglutination value	Immagine
Rh ctrl (10ml)	0	17.4	
Anti-A (10ml)	4+	84.6	
Anti-B (10ml)	4+	99.9	
Anti-AB (10ml)	4+	99.9	
OC Anti-D (10ml)	4+	99.9	
Anti-DNovacione (10ml)	4+	99.9	
OCABD6_I	AB RH+		

Immagine	Esame strumento	Valore Finale	Valore Misurato
	Anti-A(2) (10ml)	4+	74.4
	Anti-B(2) (10ml)	4+	95.9
	Anti-AB(2) (10ml)	4+	88.8
	A1-Cell (10ml)	0	10.0
	A2-Cell (10ml)	0	10.3
	B-Cell (10ml)	0	8.2
	0-Cell (10ml)	0	8.5
	Galileo diluent	0	7.3
	Anti-DNovacione (10ml)	4+	95.9
	Anti-DRapid (10ml)	4+	96.0
	Rh ctrl (10ml)	0	9.9
	ABDLONG	AB RH+	

- Female Donor, 38 y. Old
- previously classified as AB
- Value and agglutination not perfect
- Detected:
 - Ag A1 neg
 - Ag H neg
 - Anti-A1 neg
- CAT BT: A3+; B4+, AB4+
- Results has enabled to assign A2B without anti-A1



ABO

CAT: anti-A/B titration (t-IHA)

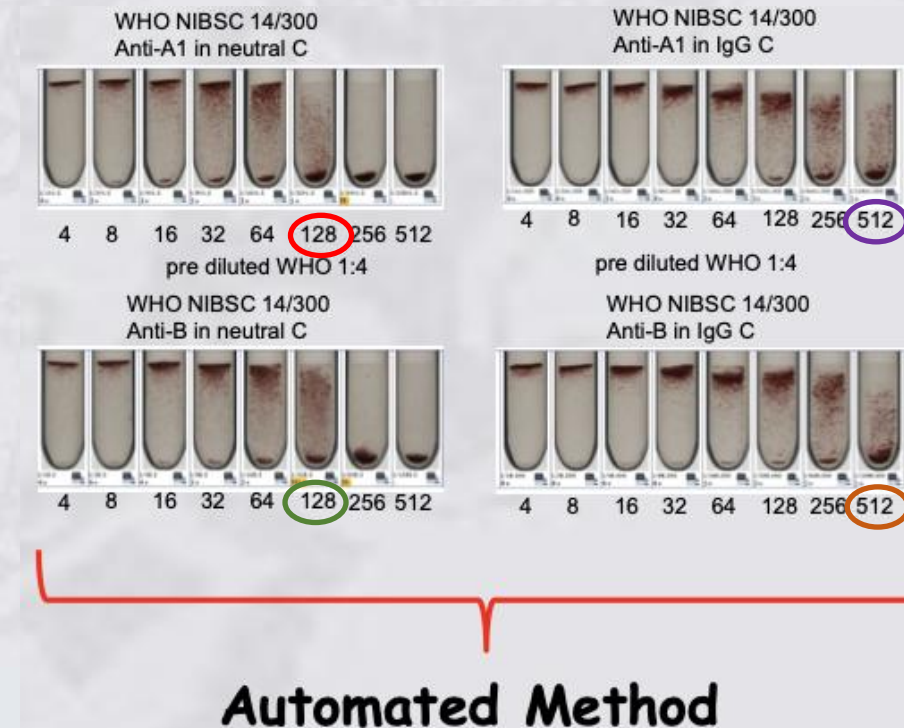


P469 | Evaluation of a new method for titration of anti-A and anti-B isohemagglutinins with fully automated instrumentation

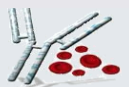
S Bresciani¹, S Merelli¹, R Moreschetti¹, S Petulla¹, A Piccinelli¹, B Rossi¹, P Ventura¹, C Almic¹

¹Dipartimento dei servizi SIMT/CLV, ASST Spedali Civili di Brescia, Brescia, Italy

- In 2024: new automated column technology was evaluated
- technologies in use are subject to rigorous performance monitoring (UKNEQAS / NIBSC WHO14/300 / national and regional external quality control)
- Samples analysed:
 - 7 subjects (5 BMT candidates and 2 HPC-A donors)
 - 4 repetitions of the WHO standard at a known concentration
- Results:
 - Anti-A/B IgM: samples all concordant within one dilution
 - Anti-A IgG: samples all concordant within one dilution
 - Anti-B IgG: two dilution deviation in two cases
- Good correlation/ other sample to study

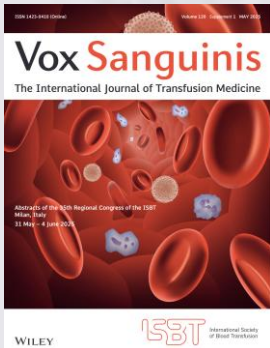


anti-A/B IgM 1:128
neutral CAT RT;
IgG 1:256 in AHG
CAT 37°C



ABO

CAT/Plate: anti-A/B titration t-IHA
Minor ABO mismatch BMT



P753 | Assessment of anti-A and anti-B isohaemagglutinin titers in minor ABO mismatch bone marrow transplants: a comparison of two methods and their impact on HPC-A management

S Bresciani¹, A Bianchetti¹, S Merelli¹, S Masneri¹, L Valsecchi¹, S Macri¹, M Cavagnini¹, M Rocchi¹, E Giacomelli¹, S Braga¹, E Gobbi¹, C Almici¹

¹Dipartimento dei servizi SIMT/CLV, ASST Spedali Civili di Brescia, Brescia, Italy

➤ 2024: Risk analysis - plasma reduction in ABO minor mismatch HPC-A with titer $\geq 1:256$ (Nina Worel:Transfus Med Hemother 2016;43:3-12)

➤ Aim:

- New decision-making workflow for plasma reduction in HPC-A using donor's titer
- Comparison t-IHA- CAT/Plate

➤ 8 allogenic HPC-A donors

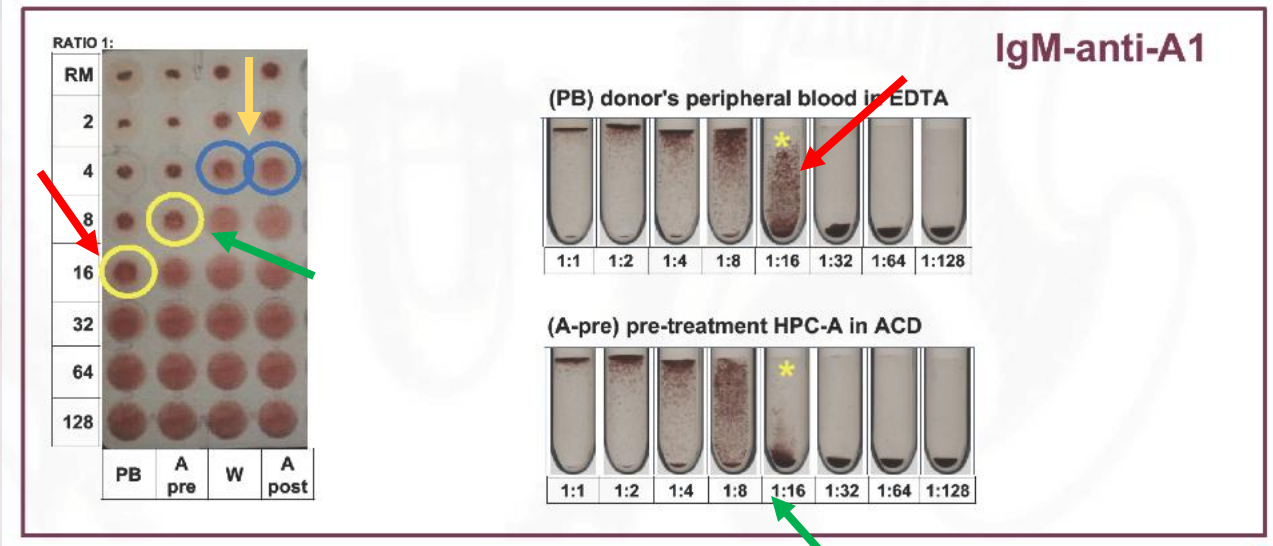
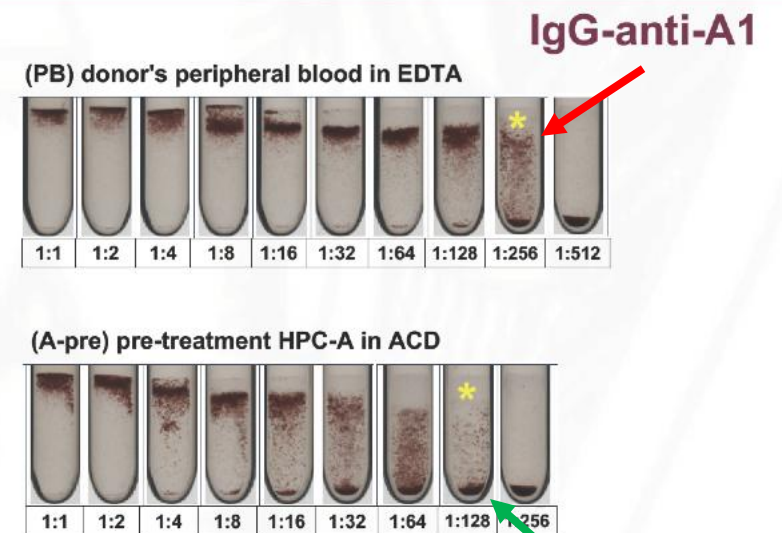
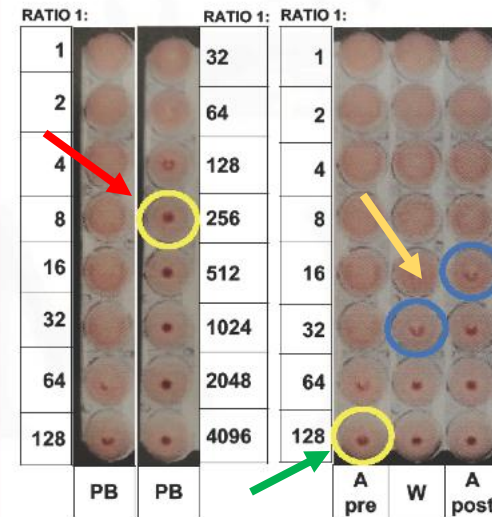
➤ Sample analysed:

- Donor's peripheral blood (PB)
- Pre-treatment HPC-A (A-pre)
- Post-treatment HPC-A (A-Post)
- Plasma removed in wash solution (W)

➤ Results:

- PB and A-pre complete concordance
- A-post and W t-IHA confirm the efficacy of plasma reduction
- 5/8 HPC-A, plasma reduction would not be necessary

Exaple: Donor n.5

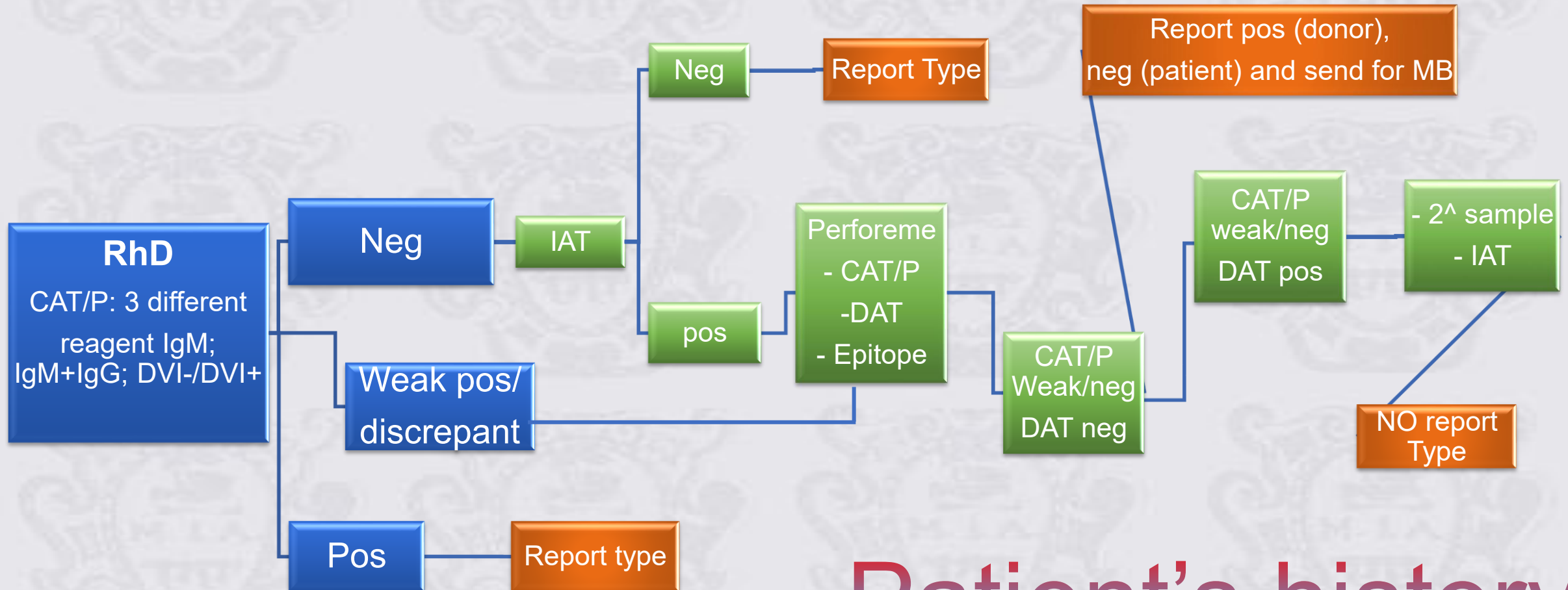


RhD management

- Plate (P) for Donors/patients
- CAT for pre transfusion tests

Algorithm

Serological investigations



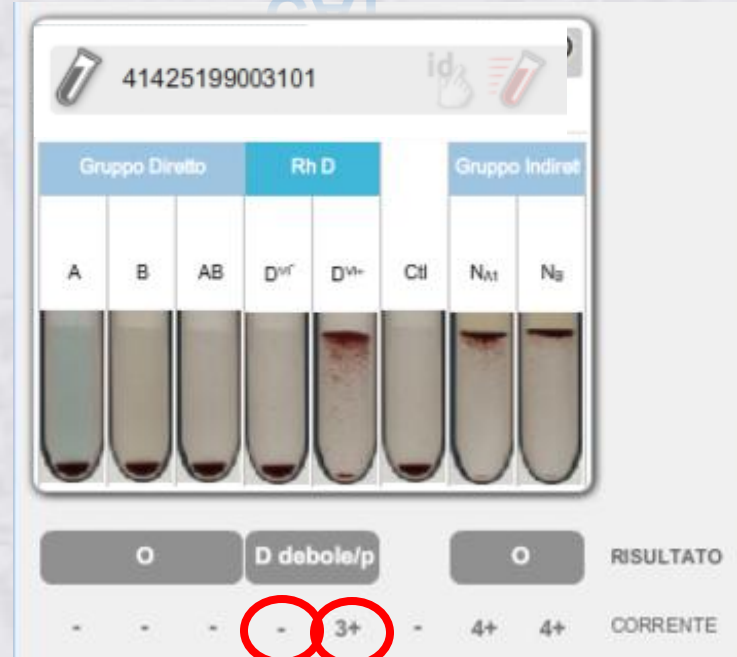
Patient's history



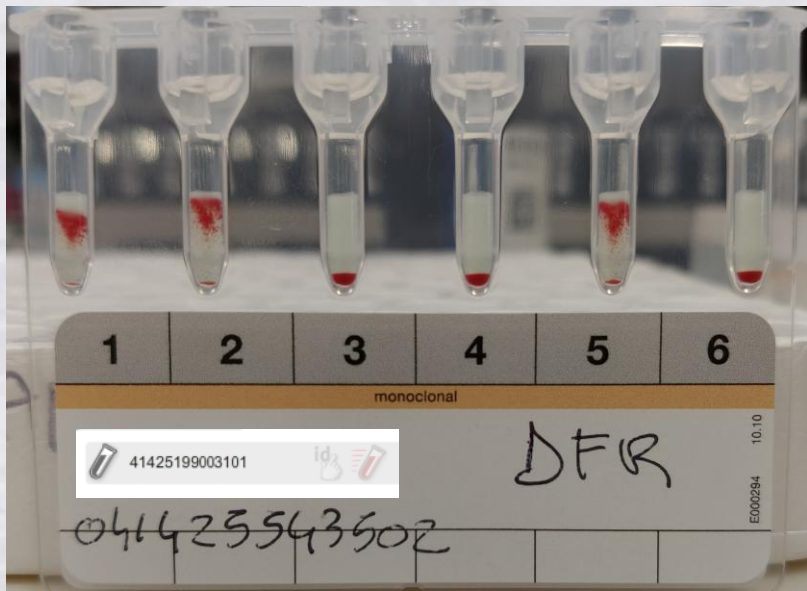
RhD CAT/Plate: ability to detect variants

- Female Donor, 48 y.old
- RHD genotype: DFR
- classified as:
 - Donor: RhD positive
 - Patient: RhD negative
 - anti-D immunoprophylaxis: YES

CAT



Epitopes



liquid phase

Codice Campione 41425199003101
Esame ABD6_DP
Valore Pos
Profilo Strumenti OCABD6_I
Esame strumento OC Anti-D (10ml)
Risultato strumento ?

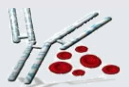
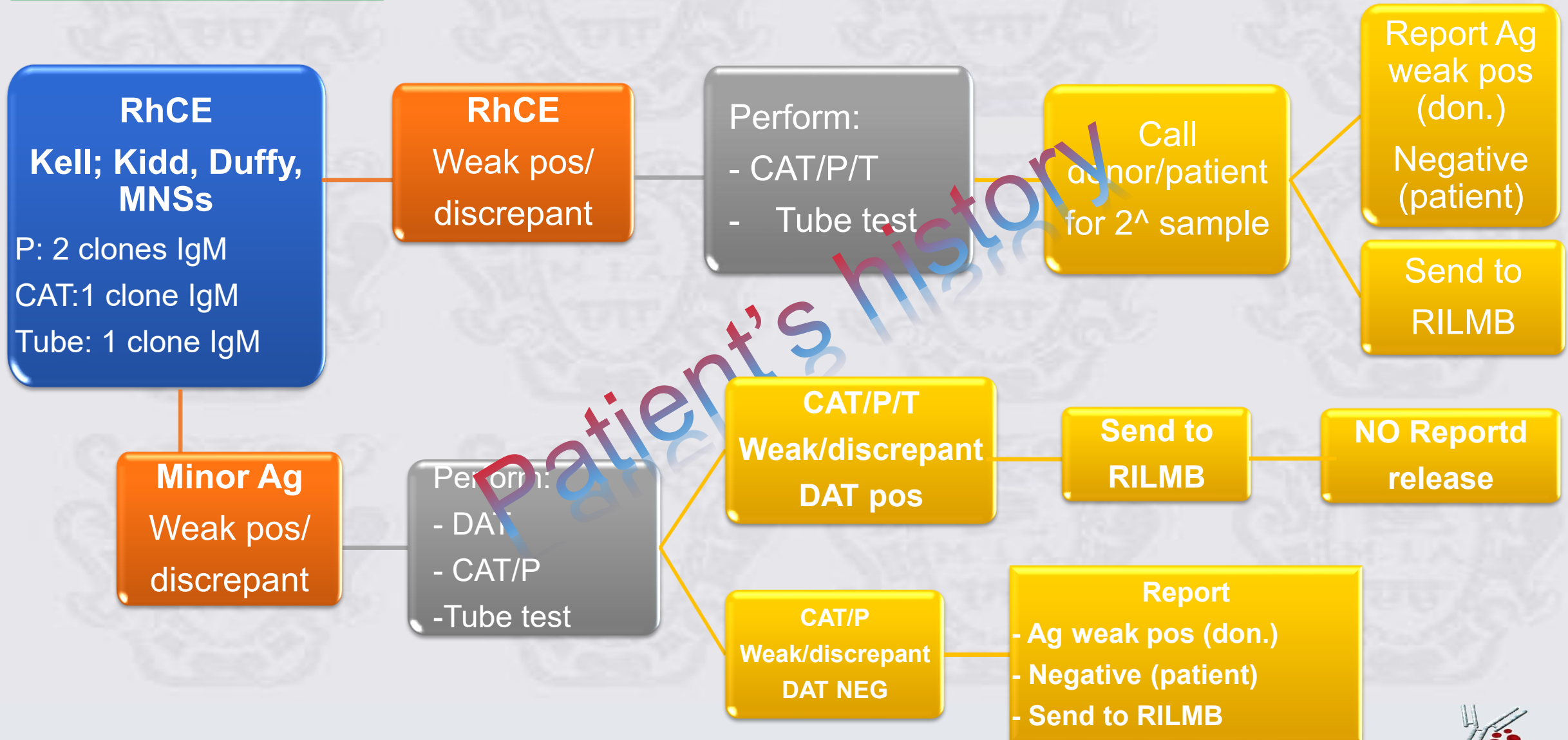
Codice Campione 41425199003101
Esame ABD6_DP
Valore Pos
Profilo Strumenti OCABD6_I
Esame strumento Anti-DNovaclone (10ml)
Risultato strumento 0

Ag Type management

- Plate (P) for Donors/patients
- CAT for pre transfusion tests

Algorithm

Serological investigations



RhCE

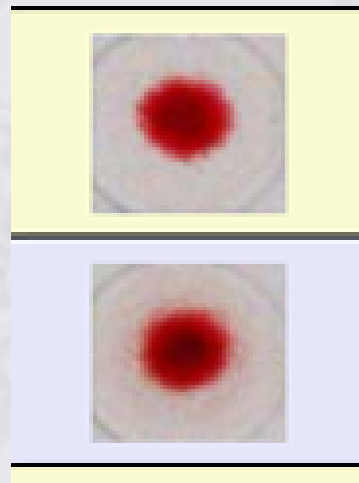
CAT/Plate: discrepancy management

Esame strumento	Valore Finale	Valore Misurato	Immagine
Anti-C(1) (10ml)	4+	99.9	
Anti-C(2) (10ml)	4+	99.9	
Anti-little c(1) (10ml)	4+	99.9	
Anti-little c(2) (10ml)	4+	99.9	
Anti-E(1) (10ml)	4+	99.9	
Anti-E(2) (10ml)	4+	99.9	
Anti-little e(1) (10ml)	4+	99.9	
Anti-little e(2) (10ml)	4+	99.9	
Anti-Kell (10ml)	0	9.8	
Anti Kell(2) (10ml)	0	10.5	
Rh ctrl (10ml)	0	11.4	
RHFORMEL	Cc Ee K-		

Plate: CcDEe kk

4+	4+	-	4+	4+	-	-	-
DVI+	C	E	c	e	C ^w	K	Ctl

Column: CcDee kk



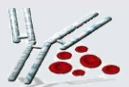
ABS006 - Determinazione del fenotipo Rh: identificazione di una variante rara

Susanna Bresciani ⁽¹⁾ - Sara Merelli ⁽¹⁾ - Alessandro Copeta ⁽¹⁾ - Monia Rocchi ⁽¹⁾ - Marina Cavagnini ⁽¹⁾ - Nicoletta Revelli ⁽²⁾

Dipartimento dei Servizi, SIMT, Spedali Civili di Brescia, Brescia ⁽¹⁾ - SC Medicina Trasfusionale, Fondazione IRCCS Cà Granda Policlinico, Milano ⁽²⁾



- 2024: potential donor, 25-year-old Romanian male
- Rh phenotype in liquid phase P: CcEe
- Historical data in LIS: Ccee
- Report blocked by IT
- Perform test with CAT technology; Ccee
- No report issued, 2nd sample sent to RILMB
- RILMB: discrepancy in CAT with two different clones and genomic determination Wrhce
- BeadChip: Ce/cEw variant RHCE*0301 (cEW)
- Importance of IT
- Conclusion: Ag E positive if Donor; Ag E negative if patient.

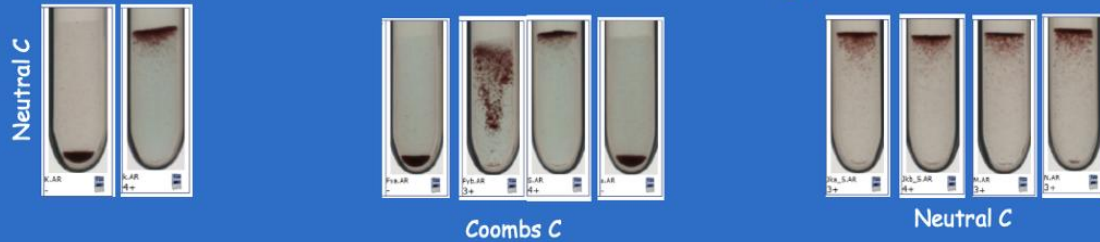


Minor Ag Typing

CAT/Plate: interference related to DAT pos: evaluation

C typing (both manual and automatic) with buffered cards, used to verify dubious reactions in P. P technology (automated only) both liquid and solid phase. We performed Kidd (Jk), Duffy (Fy), MNs, antigen typing.

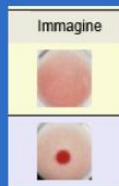
Micro-Column technology



Micro-Plate technology

Esame	Tipo Test	Valore risultato
AG_Fyb	Final	Fyb+
AG_S	Final	S-
s_li	Final	s+
AG_Fya	Final	Fya+
TCD	Final	Neg
AG_Jkab	Final	Jka-b+
AG_M	Final	M-
AG_N	Final	N+

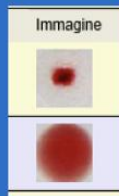
Solid phase



Sample 4+

Negative control

Liquid phase



Sample 4+

Negative control

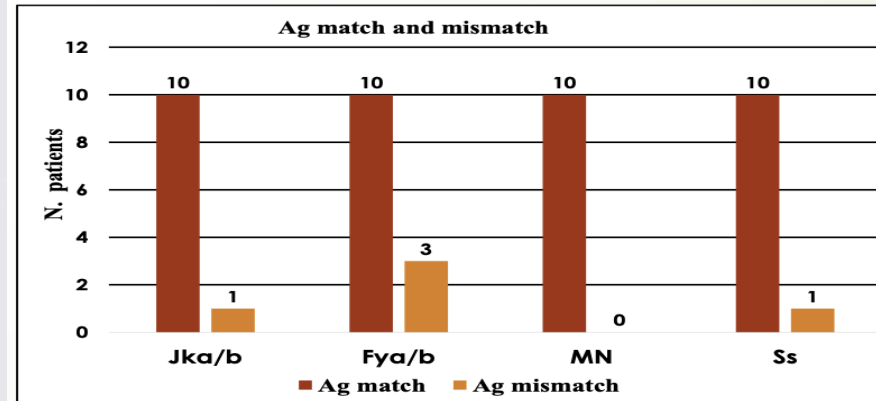
P465 | Minor Ag typing in serology for patients with positive DAT: comparison with genomic typing

S Bresciani¹, S Merelli¹, N Revelli², S Cancelli¹, S Tanganelli¹, B Pasotti¹, F Gerardini¹, C Almici¹

¹Dipartimento dei servizi SIMT/CLV, Spedali Civili di Brescia, Brescia,

²laboratorio di immunoematologia, Fondazione IRCCS Ca Granda Ospedale Maggiore Policlinico, Milano, Italy

Serologic and genomic typing



Reasons/Aims

- Interference by DAT pos in AHG/SPRCA typing
- Long time for genomic typing
- 15 MM patients sample DARA candidates, pos DAT, genomic Typing
- Ag typing in P (liquid phase and SPRCA)

Results:

- Good correlation
- 1 s false negative, 1 Jka discrepant resolved by CAT
- 3 Fya discrepant (solid phase) dependent on the type of specific mono DAT

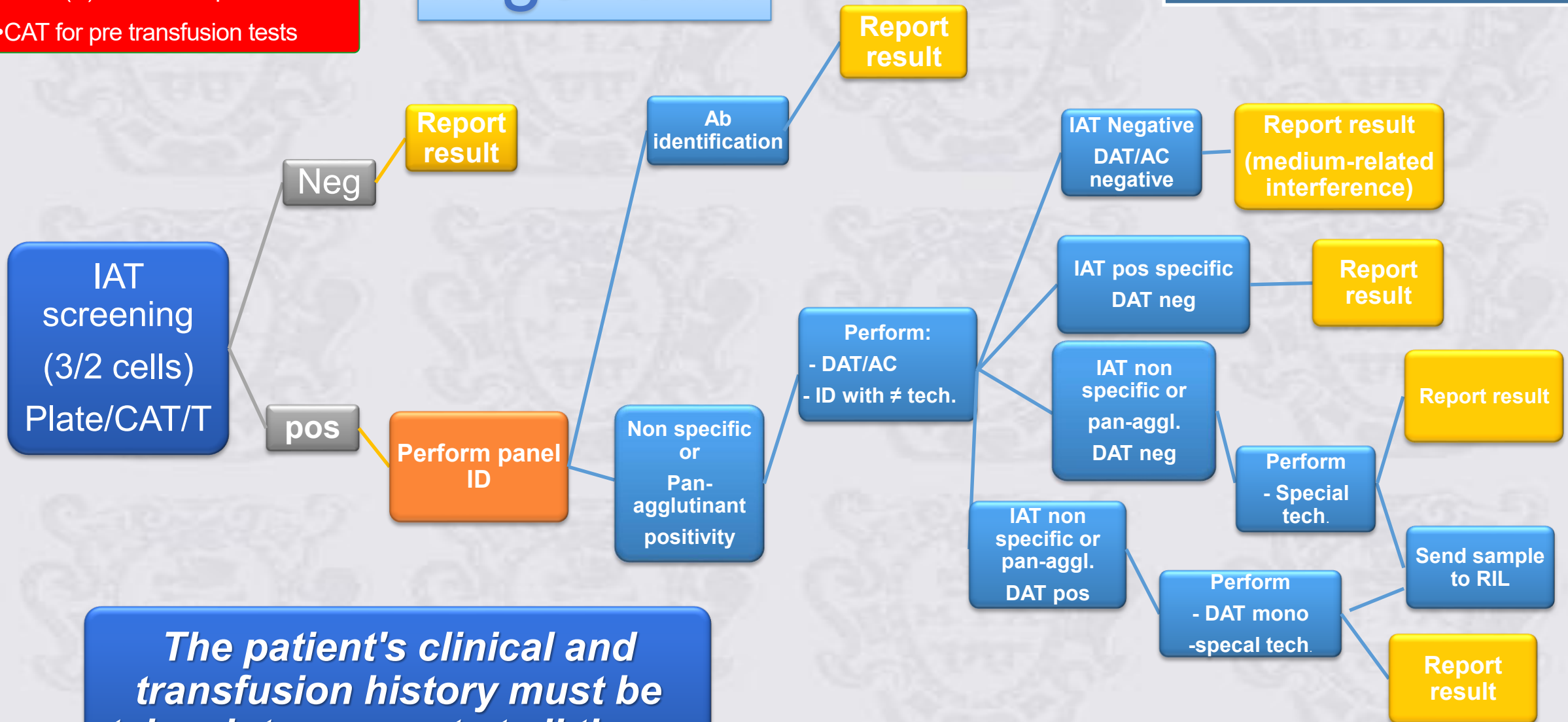


IAT management

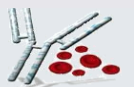
- Plate (P) for Donors/patients
- CAT for pre transfusion tests

Algorithm

Serological investigations



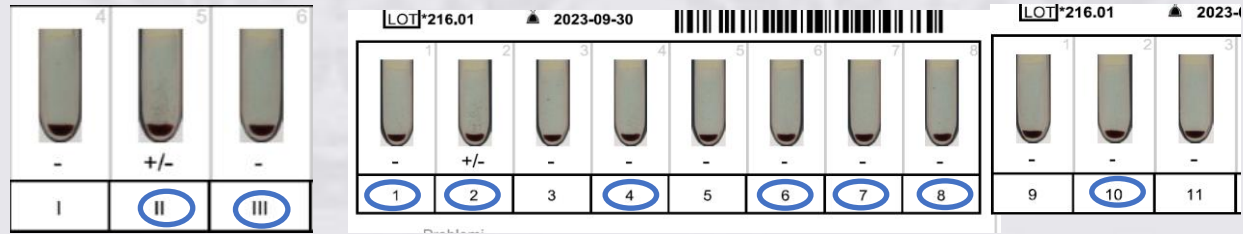
The patient's clinical and transfusion history must be taken into account at all times.



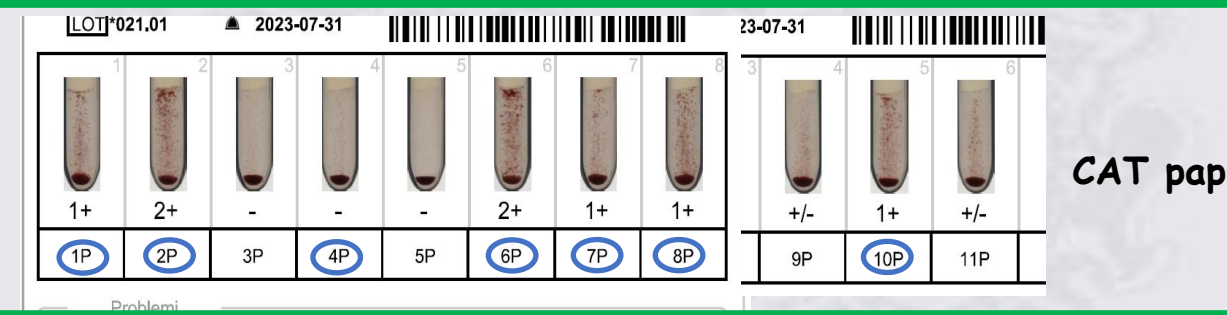
IAT management

CAT/SPRCA: synergic action for ID Allo-anti-Jka

Jka pos cell

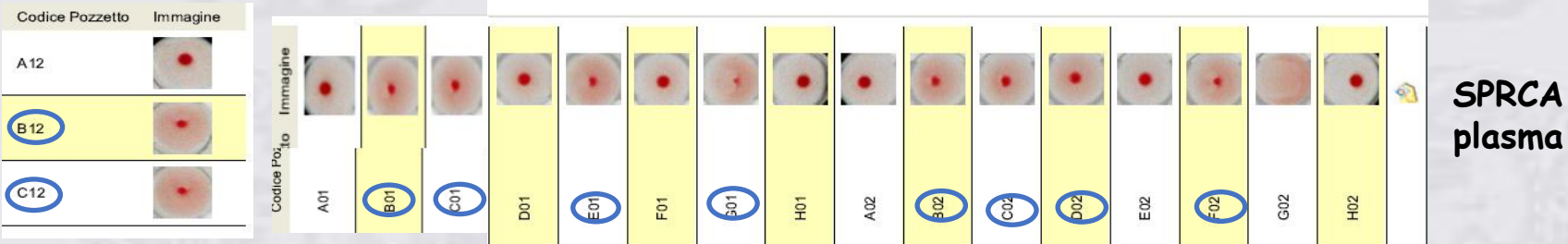


CAT AHG

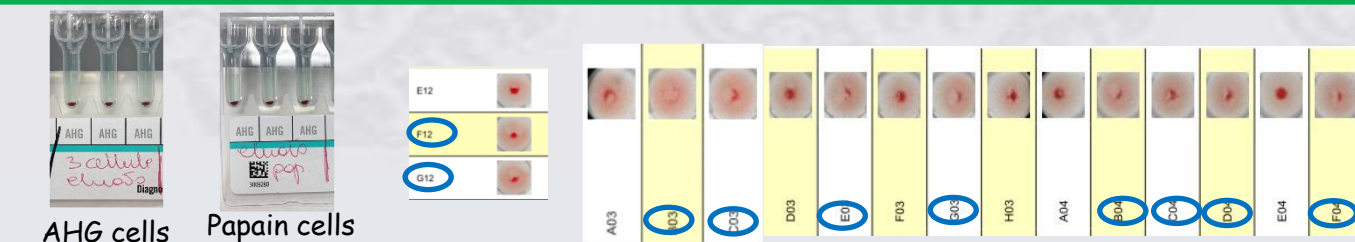


CAT pap

CAT-DAT
IgG 1+ /C3d +/-



SPRCA
plasma



ID on eluate



ABS017 - Importanza dell'integrazione di diversi sistemi diagnostici nelle indagini di immunoematologia: descrizione di un caso

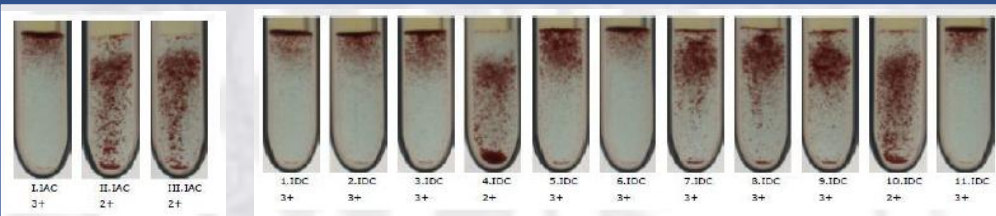
Sara Merelli ⁽¹⁾ - Fiorina Rocca ⁽¹⁾ - Enrica Prati ⁽¹⁾ - Susanna Bresciani ⁽¹⁾ - Alessandra Tiburzi ⁽¹⁾ - Laura Lena ⁽¹⁾ - Sabrina Petullà ⁽¹⁾ - Barbara Rossi ⁽¹⁾ - Camillo Almici ⁽¹⁾

SIMT, ASST Spedali Civili Brescia, Brescia ⁽¹⁾

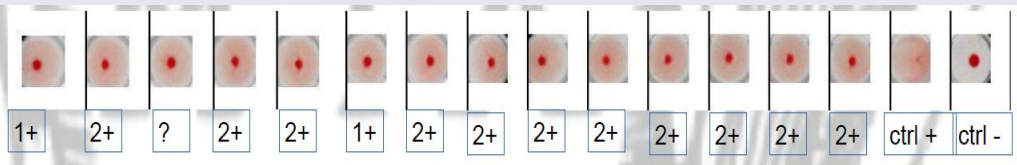
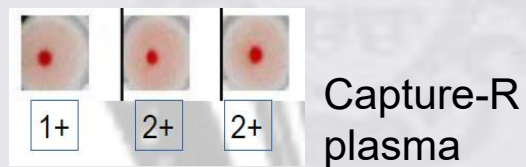
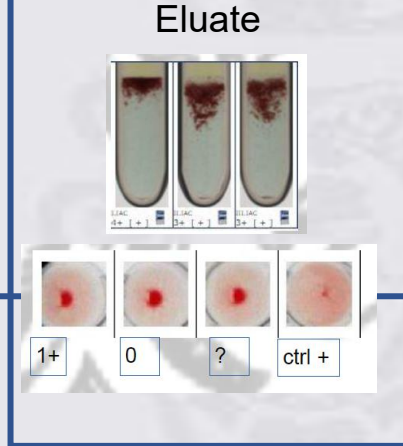
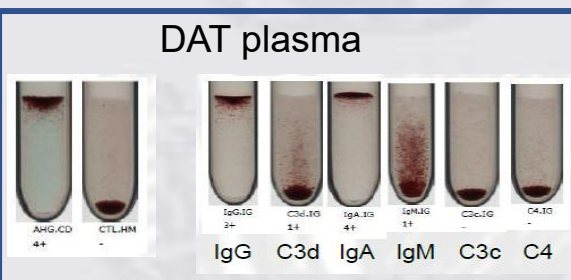
- Female, 88 years old
- Myelodysplasia
- transfuses 15 units of GRC from October 2021 to december 2022 with negative IAT.
- In January 2023 following a new blood request, pre-transfusion tests are Performed:
 - IAT in CAT 3 and 11cells non conclusive; 11 cells papaine possible anti-Jka
 - DAT in CAT: IgG 1+ /C3d +/-.
 - IAT eluate in CAT: negative
 - IAT in SPRCA: 3 and 14 cell identify anti-Jka.
 - IAT eluate in SPRCA Confirm anti-Jka



IAT/DAT management: CAT/SPRCA: apparent DAT discrepancy



CAT/IAT
plasma



CM: 17/17 non comp.
Self-absorption: non conclusive

Minor Ag type

Cap-R Ind
Cells (10ml)
(DAT) 1 0.0



Capture-DAT (Ag Fya+)

← unless

ABS004 - Test di Coombs diretto: discrepanza tra due metodi in un caso di AIHA

Laura Lena ⁽¹⁾ - Sara Merelli ⁽¹⁾ - Susanna Bresciani ⁽¹⁾ -
Lorena Podavini ⁽¹⁾ - Elena Frassine ⁽¹⁾ - Camillo Almici ⁽¹⁾
*Dipartimento dei Servizi SIMT/CLV, Spedali Civili di Brescia,
Brescia* ⁽¹⁾



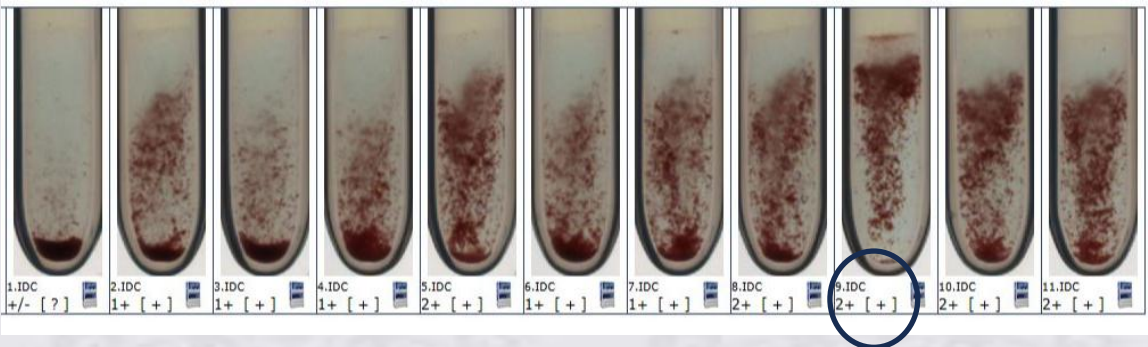
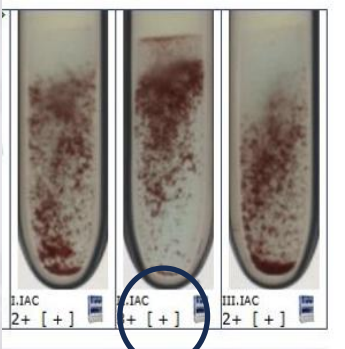
- Male, 59 years old, previous Hodgkin's lymphoma, diagnosis of AIHA, BT: 0 pos CcDee kk -urgent blood request-
- No pregress trasfusione: Pre trasfusione test
- IAT CAT plasma pos 2+/3+. DAT CAT pos IgG/A 4+, C3d/IgM 1+.
- IAT Solid phase pos 1+/2+. CM with 17 donors ABO RhDCE: 17/17 NO comp
- IAT CAT plasma auto adsorbet (2): auto-anti-D+C.
- typing minor Ag in plate. DAT in solid phase (Fya+): DAT NEG
- IgG subclAssess??? IgG4 92.5 mg/dL (40-86mg/dL)
- DAT discrepancy resolved, no allo-Ab high-titer, assigne units with high Ag match

Esame	Risultato	Unità di misura	Valori di riferimento
IgG Sottoclasse 1/2/3/4			
IgG1	290 _L	mg/dL	382.0 - 929.0
IgG2	262.4	mg/dL	242.0 - 700.0
IgG3	38.9	mg/dL	22.0 - 176.0
IgG4	92.5 _H	mg/dL	4.0 - 86.0
IgG	707.6	mg/dL	610.0 - 1 616.0

IAT management: CAT/SPRCA synergy

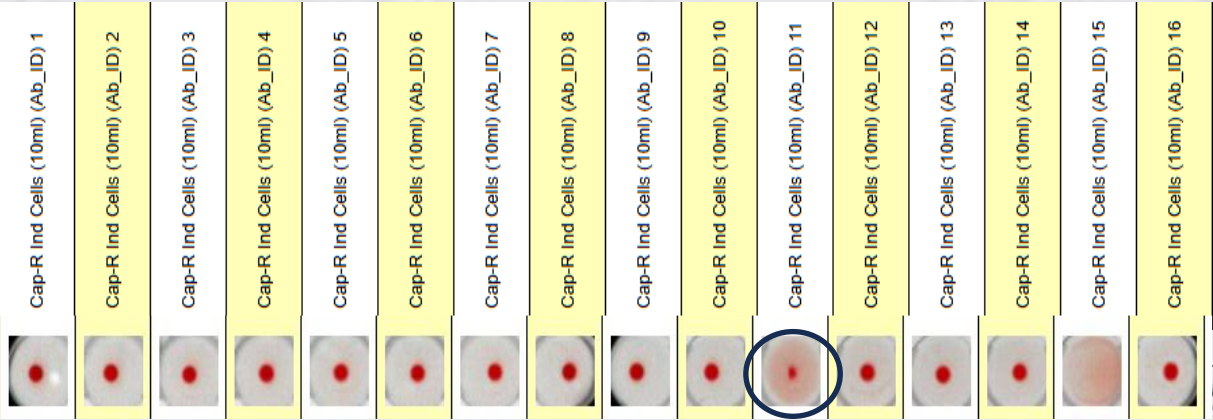


Kpa pos cell

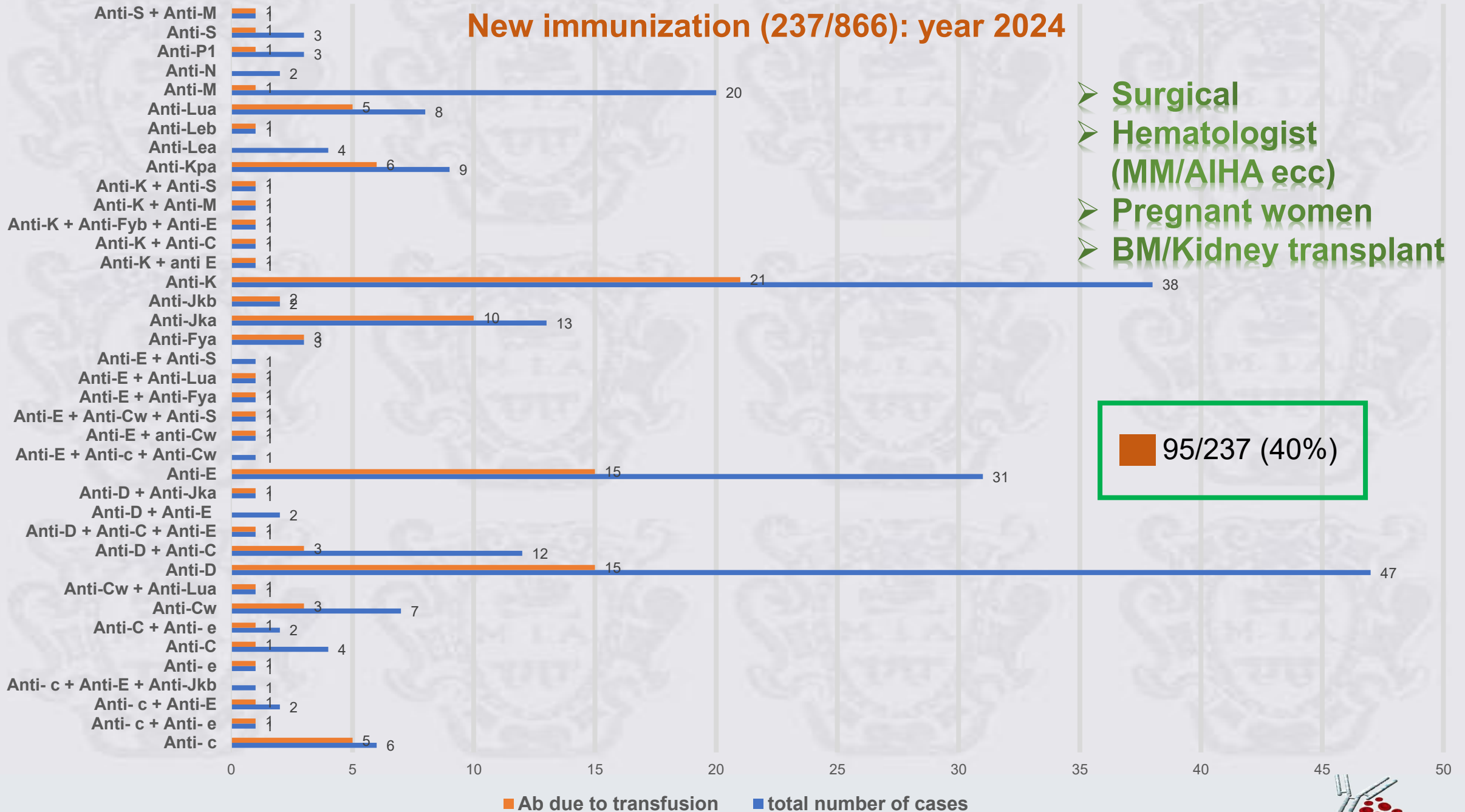


- Male, 14 years old, sickle cell disease patient of African ethnicity
- BT: B pos ccDee kk, Fya-b-;Jka+b-; Ns.
- pregress trasfusione:
 - until 2017 RBC rr and Ror
 - Since 2018 RBC only rr (DIIIIa variant and homozygous for the GATA-1 mutation FY*02N01- Fyb expression related)
- IAT CAT neg antil 2020 with DAT pos IgG1+ since 2012 (no allo-Ab)
- IAT CAT/SPRCA since 2020:
 - CAT: panagg.
 - SPRCA: anti-Kpa

Esame strumento	Modificato	Valore Originale	Valore Finale	Immagine
Cap-R Ind Cells (10ml) (3_Cell) 1		3+	3+	
Cap-R Ind Cells (10ml) (3_Cell) 2		0	0	
Cap-R Ind Cells (10ml) (3_Cell) 3		0	0	
Cap-R Ind Cells (10ml) (3_Cell) 4		3+	3+	
3_Cell			Positive	

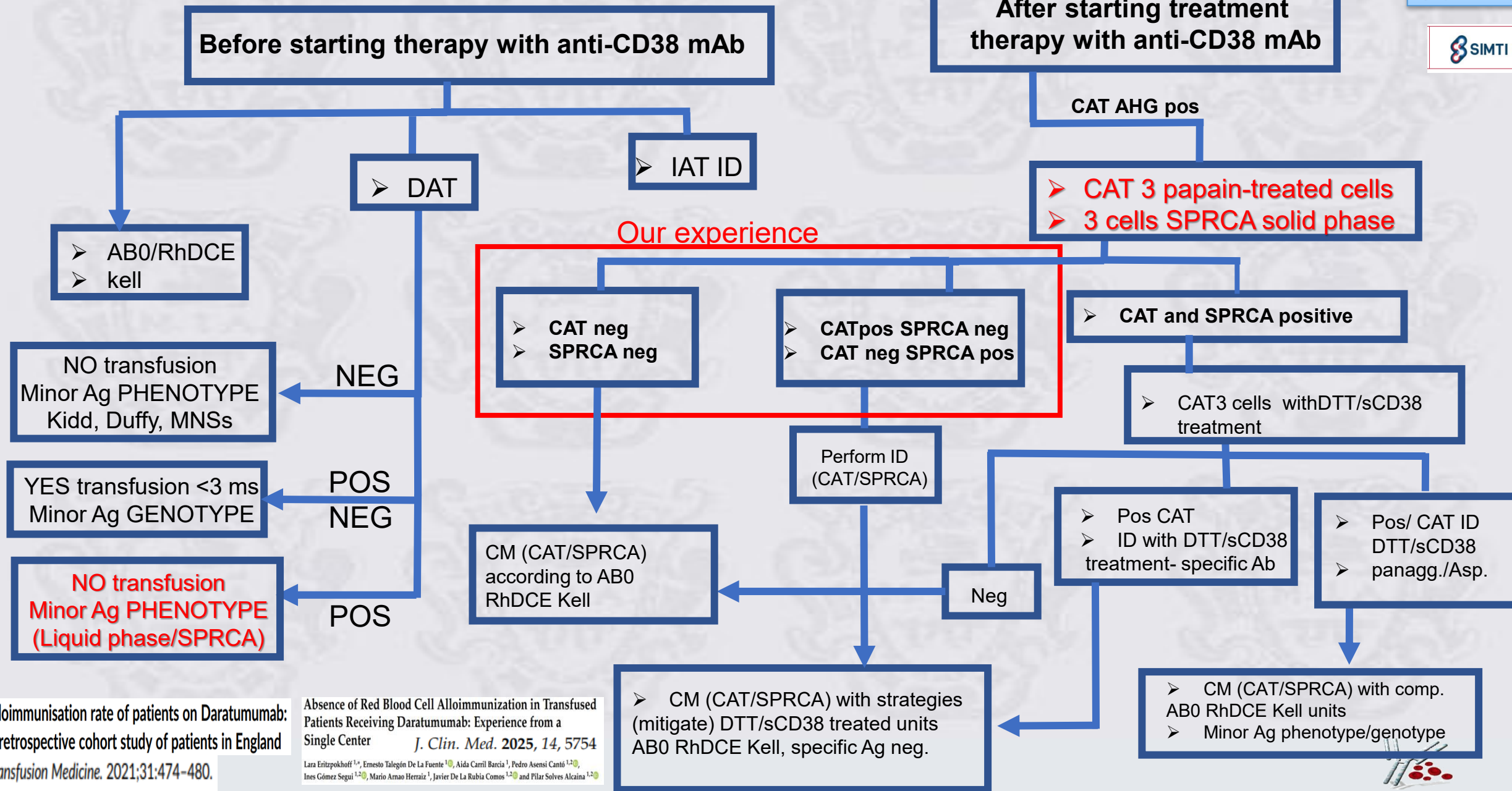


New immunization (237/866): year 2024



Management of patients in treatment with anti-CD38 mAbs

Algorithm
(Specific)

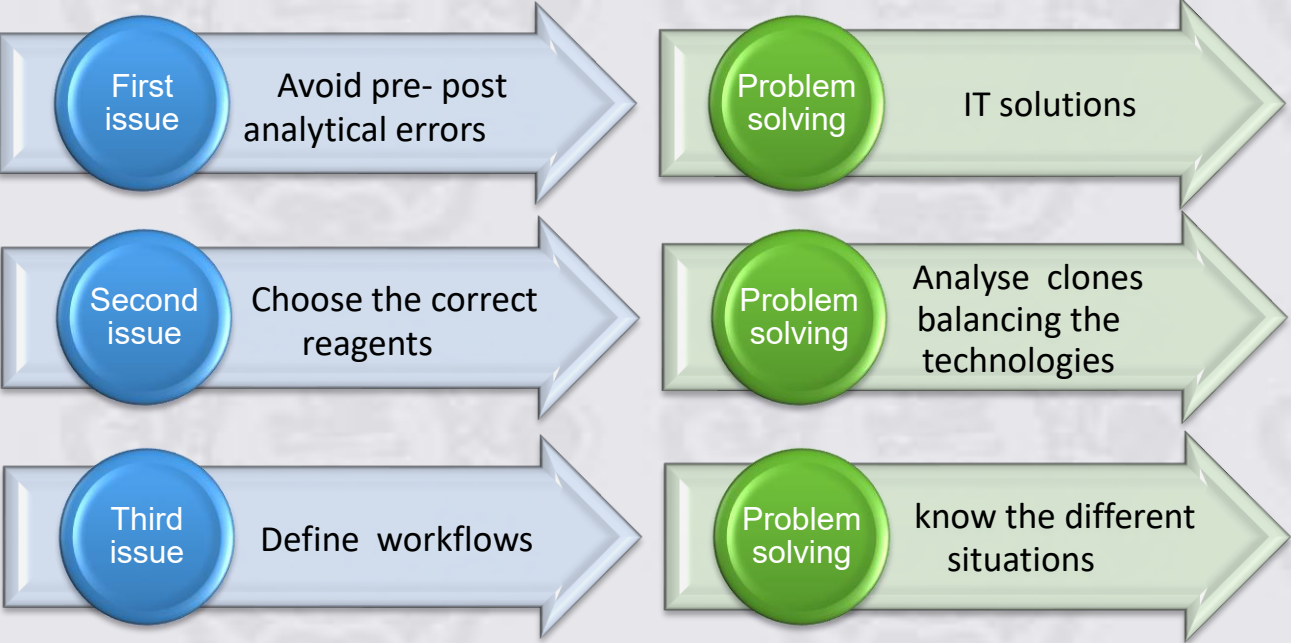


Alloimmunisation rate of patients on Daratumumab:
A retrospective cohort study of patients in England
Transfusion Medicine. 2021;31:474-480.

Absence of Red Blood Cell Alloimmunization in Transfused Patients Receiving Daratumumab: Experience from a Single Center
J. Clin. Med. 2025, 14, 5754
Lara Eritzipokhoff ^{1,*}, Ernesto Talegón De La Fuente ¹, Aida Carril Barcia ¹, Pedro Asensi Cantó ^{1,2}, Ines Gómez Seguí ^{1,2}, Mario Armao Herraz ¹, Javier De La Rubia Comos ^{1,2} and Pilar Solves Alcaina ^{1,2}



Conclusion



**Safety
Accuracy
and
Efficiency**
at every step of the process



**Critical thinking
expertise
collaboration of professionals**



Brings home the message: Learning-Communication-Network



Together,
we can!

Thanks for your attention

