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Irish Blood Transfusion Service
Seirbhís Fuilaistriúcháin na hÉireann

IRISH BLOOD TRANSFUSION SERVICE, NATIONAL BLOOD CENTRE REVIEW OF 1579 PATIENTS WITH ANTIBODIES, THE RATES OF CONCURRENT OR SINGLE SPECIFICITIES

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Introduction

The Irish Blood Transfusion Service (IBTS) offers antibody investigation and confirmation services, for red cell antibodies, to hospitals throughout the Republic of Ireland. Most Hospitals have their own Hospital Blood Banks that routinely perform antibody screening and identification procedures. Samples referred to the IBTS are generally referred for the following tests, Antibody Quantitation or Titration, Antibody Confirmation, Antibody Exclusion and Antibody Identification.

Most hospitals with blood banks do not hold more than 2 antibody investigation panels, for identification of patient antibodies, thus patients with multiple antibodies are generally referred to the IBTS for antibody confirmation and exclusion of other clinically significant antibodies.

It must be noted that all patients with antibodies do not have samples referred to the IBTS for antibody identification or confirmation.

Recent publications (1- 5) show that the most common allo-antibodies detected in hospital patients were Anti-D, -E, -c, -C, -K, -Fya and that multiple allo-immunisation occurred in 21.7%, and 21.4%.

This study was undertaken to determine if multiple allo-immunisation rates in the Irish population were comparible.

This study was also taken to determine if the rates of concurrent antibodies were compariblt to published rates

Patient Selection

Data extracted from IBTS Patient Management Software (Progesa –MAK Systems) and Blood Operations Support Software (BOSS™) ©2004-2010 New York Blood Centre.

Patients with confirmed antibody(ies) of known specificity from the years 2006-2009 inclusive. Not considered, patients with no antibodies detected, undefined, inconclusive or autoantibodies with no underlying allo-antibodies.

Each patient was only included once in the figures given in table 1. Where a patient developed other antibodies during the time period under consideration, the sample with most antibodies was included only.

Data was tabulated using Microsoft Excel Software.

Findings

1628 patients were identified with antbodies. Multiple allo-immunization occurred in 25.7% (418/1628) of allo-immunized patients compared with a reported 21.7% (4). Multiple allo-immunization constituted 50% of all antibodies (1108/1110) compared with a published (4) rate of 39.9%.

Table 1 shows the breakdown of antibodies detected and their rates of apperance as a single antibody or if in combination with other antibodies.

Chart 1 shows the concordance of clinically significant antibodies.

Figures 1-7 shows for some individual antibodies the concordance with specific antibodies.

References

1. Winters JL, Pineda AA, Gorden LD, Bryant SC, Melton J, Vamvakas EC, Moore SB. RBC alloantibody specificity and antigen potency in Olmsted County, Minnesota. Transfusion 2001; 41: 1413-1420.
2. Tormey CA, Stack G. Red Blood Cell alloantibody frequency, specificity, and properties in a population of male military veterans. Transfusion 2008;48:2069-2076.
5. Tormey CA, Stack G. The persistence and evanescence of blood group alloantibodies in men. Transfusion 2009;49:505-512.
4. Tormey CA, Stack G. The characterization and classification of concurrent blood group antibodies. Transfusion;49:2709-2718.
5. Cerdas-Quesada C. Specificity of 136 patient's antibodies to human red blood cells in Dr. Max Peralta J Hospital Blood Bank 2004-February 2009. Transfusion and Apheresis Science;42:2:105-108

antibody	occurrence total	occurrence as single Ab	occurrence with other Ab	% with other Ab	% as single Ab
Anti-D	590	420	170	29	71
Anti-E	272	127	145	53	47
Anti-C	256	23	233	91	9
K	196	93	103	53	47
Anti-c	140	64	76	54	46
Fya	131	55	76	58	42
Jka	80	40	40	50	50
M	69	24	45	65	35
S	66	27	39	59	41
Anti-Cw	61	38	23	38	62
Anti-e	41	22	19	46	54
Bg	37	21	16	43	57
Anti-G	36	7	29	81	19
Jkb	34	7	27	79	21
HTLA	32	32	0	0	100
Lea	29	19	10	34	66
Anti-Kpa	26	13	13	50	50
Lua	22	13	9	41	59
Leb	15	8	7	47	53
Fyb	15	6	9	60	40
P1	12	9	3	25	75
k	8	6	2	25	75
f	7	7	0	0	100
s	6	0	6	100	0
Wra	6	4	2	33	67
Cob	6	2	4	67	33
Anti-Ch	5	5	0	0	100
Anti-U	5	5	0	0	100
N	4	4	0	0	100
Anti-Rga	2	2	0	0	100
Anti-A1	2	1	1	50	50
Ge2	2	2	0	0	100
Lub	1	1	0	0	100
HI	1	1	0	0	100
Anti-Vel	1	1	0	0	100
Anti-Kna	1	1	0	0	100
Csa	1	0	1	100	0

Table 1. Showing the antibodies detected and the breakdown of apperance as a single antibody or in combination with other antibodies. Also detailed is the percentage occurrence as a single antibody or in combination with other antibodies.

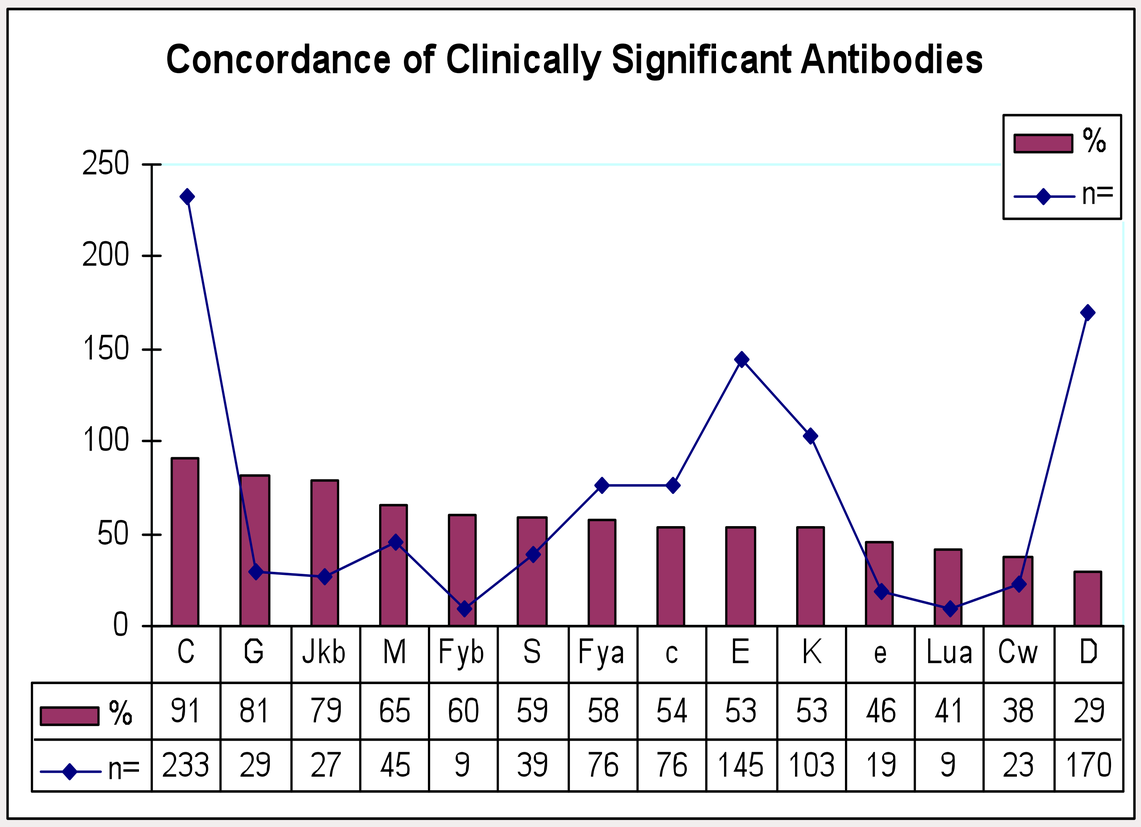
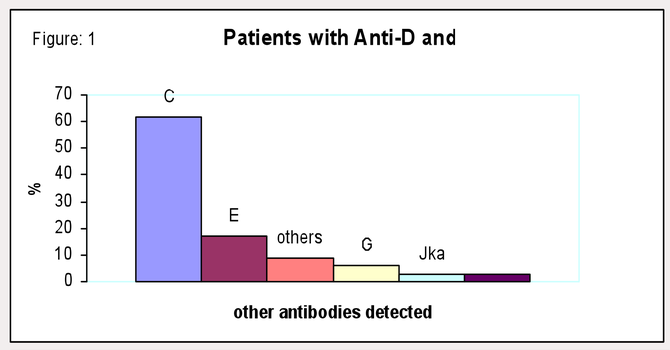
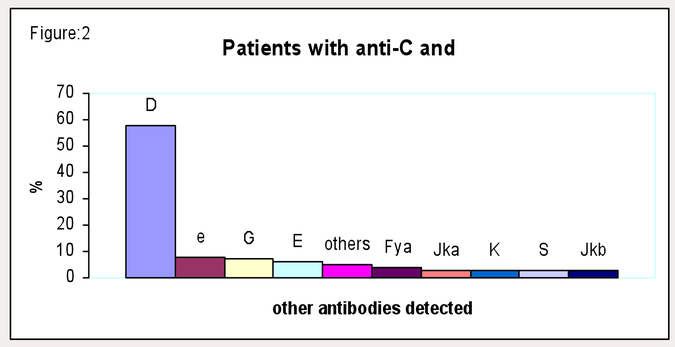
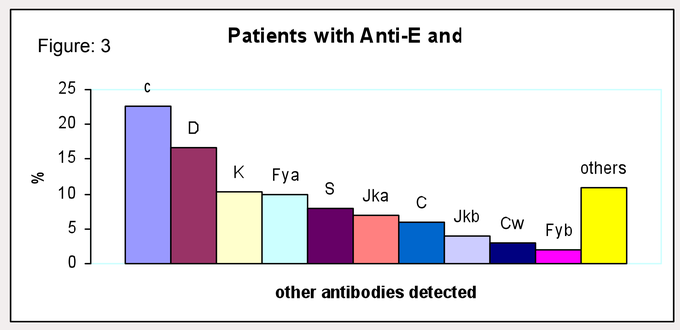
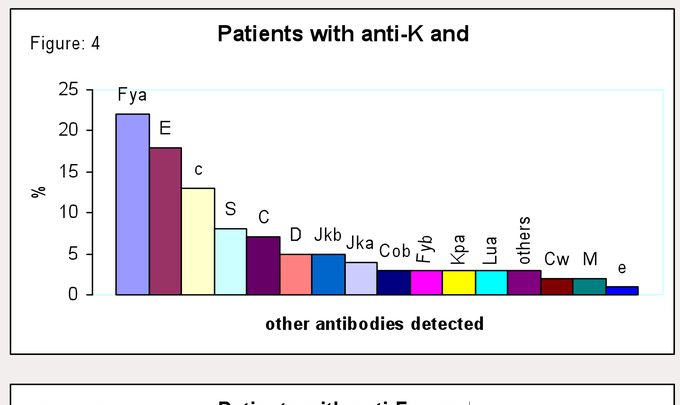


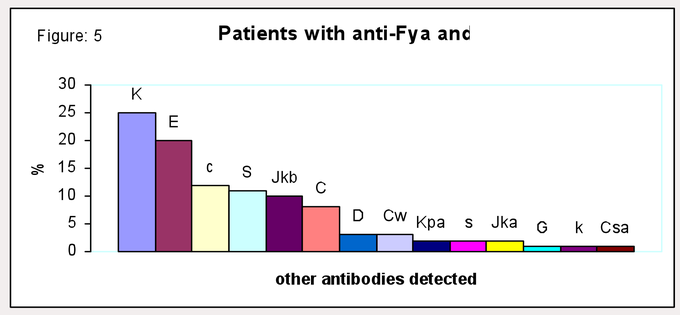
Chart 1. The concordance of clinically significant antibodies, % apperance with other antibodies.

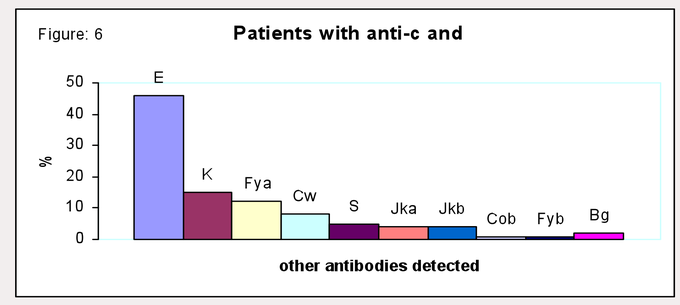


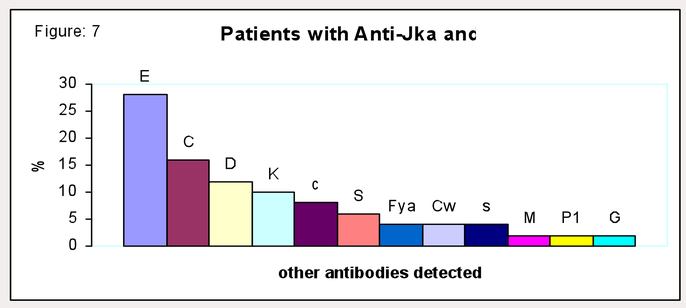












Figures: 1-7 showing concordance with individual antibodies.