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**Interpretive Educational Scheme (iED)  
Clinical Scenario 3/2018 – Neonatal Alloimmune Thrombocytopenia (NAIT)**

Dispatched on 9<sup>th</sup> October 2018

**Summary of Results**

A total of 24 responses were received (11 from UK and Ireland (UK&I) Participants and 13 from the Rest of the World (RoW)).

- 1) Based on results provided in this case comment on the likelihood of NAIT. What transfusion advice would you provide, and comment on the potential risk for any subsequent pregnancy and give advice for management of the patient during subsequent pregnancies.

Question	Response	UK&I (n=11)	RoW (n=13)	Total (n=24)
<b>Likelihood of NAIT</b>	Highly Likely	8	6	14 (56%)
	Likely	3	8	11 (44%)
<b>Defined antibody</b>	HPA-1a antibody	9	9	18 (90%)
	HPA-3a antibody	0	1	1 (5%)
	HPA-5b antibody	1	0	1 (5%)
<b>Transfusion Advice</b>	HPA-1a negative platelets	5	13	18 (75%)
	HPA-1a and 5a negative platelets	6	0	6 (25%)
<b>Risk to Subsequent Pregnancies</b>	Yes	9	13	22 (100%)
<b>Patient Management in Subsequent Pregnancies</b>	Maternal IVIg	7	10	17 (34%)
	Foetal HPA Typing	6	10	16 (32%)
	Ultrasound monitoring	1	4	5 (10%)
	Monitor Maternal HPA antibody levels	2	2	4 (8%)
	Caesarean	2	1	3 (6%)
	Transfuse HPA-1a negative platelets	3	0	3 (6%)
	Counselling	1	0	1 (2%)
Transfuse HPA-1a 5b negative platelets	1	0	1 (2%)	

*Please note not all participants responded to every part of the question and some gave multiple options as part of their response*

- 2) Based on results provided is the case consistent with NAIT? If so why, and what transfusion advice would you provide? Also, comment on the potential risk for any subsequent pregnancy and give advice for management of the patient during subsequent pregnancies.

Question	Response	UK&I (n=11)	RoW (n=13)	Total (n=24)
<b>Consistent with NAIT</b>	Yes	10	13	23 (96%)
	Unclear	1	0	1 (4%)
<b>Reason</b>	HPA-3a antibody	11	13	24 (60%)
	HPA-15b antibody	5	11	16 (40%)

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<b>Transfusion Advice</b>	HPA-3a negative platelets	5	6	11 (46%)
	HPA-3a 15b negative platelets	4	2	6 (25%)
	HPA-1a and 5b negative platelets	2	1	3 (12.5%)
	Transfuse with maternal platelets	1	2	3 (12.5%)
	HPA-3b 15b platelets	0	1	1 (4%)
<b>Risk to Subsequent Pregnancies</b>	Yes	9	13	22 (92%)
	Undetermined	2	0	2 (8%)
<b>Patient Management in Subsequent Pregnancies</b>	Maternal IVIg	8	8	16 (47%)
	Close monitoring/desensitisation	2	4	6 (17%)
	Monitor Maternal HPA antibody levels	2	2	4 (12%)
	Foetal HPA Typing	2	2	4 (12%)
	Ultrasound monitoring	1	2	3 (9%)
	Caesarean	1	0	1 (3%)

Please note not all participants responded to every part of the question and some gave multiple options as part of their response

- 3) Based on the information provided in Figure 3a and 3b, interpret the indirect MAIPA (single volume). Based on the results is the case consistent with NAIT? If so why, and what transfusion advice would you provide?

Question	Response	UK&I (n=11)	RoW (n=13)	Total (n=24)
<b>Consistent with NAIT</b>	Yes	9	2	11 (44%)
	Unclear	1	8	9 (36%)
	No	2	3	5 (20%)
<b>Reason</b>	GPIIb/IIIa antibody	9	10	19 (42%)
	Autoantibodies (ITP)	2	6	8 (18%)
	Possible Glanzmann's Thrombasthenia	4	3	7 (16%)
	HPA-5b antibody not detected	2	2	4 (9%)
	HPA-5b mismatch	2	2	4 (9%)
	HPA-5b antibody detected	1	1	2 (4%)
	HPA-3a antibody detected	1	0	1 (2%)
<b>Transfusion Advice</b>	Transfuse random donor platelets	4	6	10 (29%)
	Do not transfuse	3	3	5 (14.5%)
	IVIg	2	3	5 (14.5%)
	Maternal platelets	2	2	4 (12%)
	Crossmatch mother and father	2	1	3 (9%)
	HPA-1a and 5b negative platelets	2	1	3 (9%)
	Monitor neonatal platelet count	1	0	1 (3%)
	HLA matched platelets	0	1	1 (3%)
	HPA-3a negative platelets	1	0	1 (3%)
	Use medication to increase clotting	1	0	1 (3%)

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- 4) You are provided HPA typing results for Mother and Child (Figure 4a). The results for the indirect MAIPA (single volume) are negative (Figure 4b) with a standard cryopreserved platelet HPA typed panel (GPIIb/IIIa, GPIa/IIa, GPIb/IX) what further test/s would you suggest in this case and explain why? What transfusion advice would you provide ahead of getting these results?

Question	Response	UK&I (n=11)	RoW (n=13)	Total (n=24)
<b>Further test</b>	CD109 MAIPA	6	8	14 (22.5%)
	HPA typing	6	5	11 (18%)
	Crossmatch	5	2	7 (11%)
	Enquire whether mother used egg donor	2	3	5 (8%)
	Use extended panel MAIPA	2	2	4 (6%)
	Re-test after 4-6 weeks	1	3	4 (6%)
	Repeat MAIPA	1	3	4 (6%)
	Repeat MAIPA at double volume	3	0	3 (5%)
	Luminex screen for HLA antibodies	0	3	3 (5%)
	PIFT	2	1	3 (5%)
	Luminex screen for HPA antibodies	1	1	2 (3%)
	Investigate non-immune causes	1	1	2 (3%)
	Repeat MAIPA with dilute serum	0	1	1 (1.5%)
<b>Reason</b>	HPA types do not suggest inheritance	2	4	6 (40%)
	HPA-15 mismatch	1	5	6 (40%)
	HPA-15a alloantibody	1	2	3 (20%)
<b>Immediate Transfusion Advice</b>	HPA-15a negative platelets	2	5	7 (26%)
	Transfuse random donor platelets	1	3	4 (15%)
	HPA-5a 15b negative platelets	0	3	3 (11%)
	HPA-1a 5b negative platelets	3	0	3 (11%)
	Washed maternal platelets	0	2	2 (7.5%)
	IVIg	1	1	2 (7.5%)
	HLA matched platelets	1	1	2 (7.5%)
	HPA-5b negative platelets	1	0	1 (3.6%)
	Crossmatch mother and father	1	0	1 (3.6%)
	HPA-5b 15a negative platelets	0	1	1 (3.6%)
	Maternal HPA matched platelets	1	0	1 (3.6%)

Please note not all participants responded to every part of the question and some gave multiple options as part of their response

- 5) You are provided with HPA typing results for Mother, Father and Child (Figure 5a). The results for the indirect MAIPA (single volume) are negative. What further test/s would you suggest in this case and explain why? Include what transfusion advice you would provide, ahead of results, in this scenario.

Question	Response	UK&I (n=11)	RoW (n=13)	Total (n=24)
<b>Further test</b>	Crossmatch (PIFT or MAIPA)	9	5	14 (22%)
	Repeat MAIPA with extended panel	5	6	11 (17%)
	Repeat MAIPA (double volume sera)	8	0	8 (12%)
	Luminex HPA antibody screen	4	3	7 (11%)
	Repeat test after 4-6 weeks	1	5	6 (9%)
	HLA antibody screen	1	4	5 (8%)

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	HLA-DRB3 type mother	1	3	4 (6%)
	Indirect PIFT	3	0	3 (4.5%)
	HLA Typing	1	1	2 (3%)
	Type for other platelet antigens	0	2	2 (3%)
	Retest with dilute serum	0	1	1 (1.5%)
	Refer to reference lab	0	1	1 (1.5%)
	CD109 MAIPA	1	0	1 (1.5%)
<b>Reason</b>	Rare low titre antibody	2	2	4 (24%)
	Determine likelihood of HPA-1a alloimmunisation by DRB3 association	1	1	2 (12%)
	MAIPA not sensitive enough	2	0	2 (12%)
	Expression levels vary on platelets	1	0	1 (5.7%)
	Non-immune condition causing low platelet count	1	0	1 (5.7%)
	IgM blocking antibody present	1	0	1 (5.7%)
	Competition for binding site if antibody concentration high	0	1	1 (5.7%)
	Potential HPA-1a incompatibility	0	1	1 (5.7%)
	HLA antibodies causing thrombocytopenia	0	1	1 (5.7%)
	Other platelet antigens can cause NAIT	0	1	1 (5.7%)
	Antibodies not always detected on delivery	0	1	1 (5.7%)
	Patient antibodies absorbed on platelets	1	0	1 (5.7%)
<b>Immediate Transfusion Advice</b>	HPA-1a 5b negative platelets	8	7	15 (52%)
	Random donor platelets	0	6	6 (21%)
	HLA matched platelets	1	1	2 (6.75%)
	HPA-1a negative platelets	0	2	2 (6.75%)
	IVIg	0	2	2 (6.75%)
	Washed maternal platelets	0	2	2 (6.75%)

Please note not all participants responded to every part of the question and some gave multiple options as part of their response

- 6) You are provided HPA typing results for Mother, Father and Child the family are South East Asian (Figure 6a) -the results for the indirect MAIPA (single volume) are negative but the indirect platelet immunofluorescence test (PIFT) with all panel cells tested are positive with the mother's serum (Figure 6b) what further test/s would you suggest in this case and explain why?

Question	Response	UK&I (n=11)	RoW (n=13)	Total (n=24)
<b>Further test</b>	Crossmatch	7	3	10 (21%)
	GPIV/CD36 Typing/MAIPA	4	4	8 (17%)
	HLA antibody screening	2	4	6 (12%)
	Luminex HPA Antibody Screen	2	3	5 (10%)
	HLA Type	1	0	4 (8%)
	PIFT	2	1	3 (6%)
	HPA Type	3	0	3 (6%)
	NGS Sequencing	0	3	3 (6%)
	Investigate maternal auto-antibodies	0	3	3 (6%)
	Test for platelet disorder e.g. Glanzmann's	1	0	1 (2%)

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	MAIPA with reduced serum volume	0	1	1 (2%)
	Platelet counts	1	0	1 (2%)
	Non-immune investigations	0	1	1 (2%)
<b>Reason</b>	CD36 clinically relevant in Asian populations	3	5	8 (35%)
	HLA Class I antibodies causing positive PIFT	1	3	4 (18%)
	Low frequency antibodies/antigens	1	3	4 (18%)
	Maternal auto-antibody	0	3	3 (13%)
	Anti-CD36 implicated in NAIT	1	0	1 (4%)
	Alloimmunisation to atypical HPA	1	0	1 (4%)
	Alloimmunisation to blood group antigens	1	0	1 (4%)
	Possible platelet disorder	1	0	1 (4%)

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