2020 Annual SHOT Report – Supplementary information

Chapter 25: Anti-D immunisation in pregnancy

No previous pregnancy (NPP) n=22

There were 22 new cases in 2020 (no cases excluded), cumulative to date 105 cases**.**

Summary of 2020 NPP data

Whilst in the majority of NPP cases, alloimmune anti-D is detected at delivery, there continues to be an increase in cases detected prior to 28 weeks, although the cause remains unclear.

Booking weight data has improved marginally. We would encourage reporters to try and obtain this information as it is important in providing evidence for the role of obesity as a risk factor for immunisation.

Of the cases that were eligible for RAADP (n=15), 12 received RAADP between 28-30 weeks, 1 received delayed RADDP at 36 weeks, 1 received only the second of a two dose regimen and there was 1 case of omission due to a failure to identify the woman was D negative.

The number of documented cases where the Fetal RHD screening test has been performed when gestation appropriate prior to the subsequent detection of alloimmune anti-D has improved but remains lower than expected (n=3). Equally the number of documented cases of fetal genotyping from maternal blood after the detection of maternal antibodies remains low (n=1). The documentation of testing since its introduction in 2018 is improving however and hopefully reflects uptake of cffDNA fetal RHD screening and fetal genotyping from maternal blood and access to the results. The 2018 SHOT Annual Report was the first to include data relating to cffDNA in 2 NPP cases, in 2019 only 1 NPP case reported use of cffDNA testing.

There were 2 cases of potential sensitising events. One was a road traffic accident (RTA) no gestation provided and no details whether an assessment was completed at the time, anti D Ig was not received, the pregnancy outcome was stillbirth at 26 weeks, alloimmune anti-D was detected at delivery, quantification 0.42IU/mL. The second case was an antepartum haemorrhage prior to 20 weeks, no anti D Ig was received, quantification 0.2IU/mL, no treatment for HDFN was required.

In 3 cases alloimmune anti-D was first detected at or beyond 40 weeks, at the time of delivery, all had RAADP, no potential sensitising event, data regarding weight was missing for 2 of the cases the one documented was not obese.

The pregnancy outcome was reported in 19 cases. 18 live births and 1 intrauterine death were reported. The intrauterine death was detected at 26 weeks gestation, alloimmune anti-D was detected at this time, anti-D quantification was 0.42IU/mL, a level that would be very unlikely to cause haemolysis. In the absence of postmortem details, it is not possible to speculate further regarding this case.

With regards to neonatal intervention for HDFN, 3 required phototherapy, 1 required exchange transfusion.

When was the alloimmune anti-D detected?

Whilst cumulative data shows that in the majority of cases immune anti-D is first detected at delivery there has been an increase in the proportion of cases detected prior to 28 weeks in 2019 and 2020.

Table 24.1: Time of detection of alloimmune anti-D

	Number of new cases 2020	Number of cases cumulative to 2020
Before 28 weeks	4	15
At or after 28 weeks, before delivery	10	36
At delivery	7	50
Other	1	2*
No information	0	2
Total	**22**	**105**

*****Alloimmune anti-D was detected 6 months postpartum after large FMH of 12.7mL at delivery managed correctly, Alloimmune anti-D was detected 3 months postpartum prior to a surgical procedure, twin pregnancy managed correctly.*

What was the booking weight?

Weight is used in place of body mass index (BMI) as weight is more fully reported than BMI. Using average female height in the United Kingdom (UK), 80kg would equate to obesity in most women.

Table 24.2: Booking weight

Weight at booking in kg	Number of new cases 2020	Number of cases cumulative to 2020
<68	4	41
68-80	3	11
>80 (obese)	4	15
No information	11	38
Total	**22**	**105**

Did the women receive appropriate RAADP?

Alloimmune anti-D was detected in 6 cases prior to 28 weeks and in 1 case cell free fetal DNA (cffDNA) testing predicted a D negative fetus. The remaining 15 were eligible for RAADP, 12 received RAADP between 28-30 weeks, 1 received delayed RADDP at 36 weeks, 1 only received the second of a two dose regimen* and in was received 1 case there was a failure to identify the woman was D negative.

Table 24.3: Details of RAADP for eligible cases

RAADP regimen	Number of new cases 2020	Number of cases cumulative to 2020
Single dose 1500IU at 28-30 weeks	12	74
Single dose 1500IU after 30 weeks (delayed)	1	1
Two dose regimen 500IU	0	1
Not given	2*	16
Unknown	0	2
Total eligible cases	**15**	**94**

The route was intramuscular (IM) in all cases, in 5 cases deltoid was specified.

cffDNA testing

Table 24.4: cffDNA testing

cffDNA test	Number of cases 2020	Details
Not performed	11	6 cffDNA not available or routinely performed
Performed	4	3 Fetal RHD screening tests 1 Fetal genotyping from maternal blood
No information	7	
Total	**22**	

The number of documented cases where the Fetal RHD screening test has been performed when gestation appropriate prior to the subsequent detection of alloimmune anti-D has improved but remains lower than expected (n=3).

The number of documented cases of fetal genotyping from maternal blood after the detection of maternal antibodies also remains low (n=1).

Details of potentially sensitising events (PSE)

There were 2 cases of potential sensitising events. One was a road traffic accident (RTA) no gestation provided, there are no details whether an assessment was completed at the time, anti D Ig was not received, the pregnancy outcome was stillbirth at 26 weeks, alloimmune anti-D was detected at delivery, quantification 0.42IU/mL. The second case was an antepartum haemorrhage prior to 20 weeks, no anti D Ig was received.

Table 24.5: Details of potentially sensitising events

Number of PSE	Details	Management
2 cases had PSE reported	1 road traffic accident	No anti-D Ig received
	1 antepartum haemorrhage	No anti-D Ig received
18 cases	No PSE reported	
2 cases	No information given	

Pregnancy outcomes in NPP case

In the 2020 dataset pregnancy outcome was reported in 19 cases. There were 18 that resulted in a live birth, and 1 intrauterine death. The intrauterine death was detected at 26 weeks gestation, alloimmune anti-D was detected at this time, anti-D quantification was 0.42IU/mL. This level would be very unlikely to cause haemolysis. In the absence of postmortem details, it is not possible to speculate further. In 3 cases alloimmune anti-D was detected at 40 weeks.

With regards to neonatal intervention for haemolytic disease of the fetus and newborn (HDFN), 3 required phototherapy, 1 exchange transfusion.

Previous pregnancies (PP) n=39

The index pregnancy in these cases refers to the current pregnancy – the pregnancy in which alloimmune anti-D was first detected.

Summary of 2020 PP data

There were 39 new PP cases in 2020, including 12 cases where alloimmune anti-D was found in the first trimester. Review of the cumulative cases identifies 102/272 (37.5%) cases were detected in the first trimester. Where alloimmune anti-D is detected at booking in the index (current) pregnancy, only the events in the preceding pregnancy are relevant to the sensitisation (assuming no other exposure to the D antigen occurred e.g. transfusion, an unlikely event in this demographic). Where anti-D is detected later in the index pregnancy, the relative contribution of events in the previous and index pregnancy is less certain.

In 6 cases where alloimmune anti-D was detected for the first time at delivery of index pregnancy, 2 had a gestation of more than 40 weeks. The cumulative data shows that 43 pregnancies where alloimmune anti-D was first detected at delivery in the index pregnancy, 15 cases (34.81%) were delivered after 40 weeks gestation. National Health Service (NHS) maternity statistics 2019-2020 indicate 15.9% pregnancies extended beyond 40 weeks.
https://www.gov.uk/government/statistics/nhs-maternity-statistics-england-2019-20

With regards to the data of the pregnancy preceding the index pregnancy, there were 32 live births, 1 termination and 5 first trimester miscarriages and 1 intrauterine death. Cumulatively, of the 122 women where booking weight was provided, 32 (26.2%) were obese. National data (NHS digital 2019) report 22% incidence of obesity in pregnant women in England. https://files.digital.nhs.uk/58/FFD7B1/msms-mar19-exp-rep.pdf

The RAADP data in preceding pregnancies suggests a developed, embedded process, with the majority receiving appropriate RAADP where reported, however there are still missed opportunities to get this right.

As with the NPP cases, very few cases report cffDNA testing. In 4 preceding pregnancies cffDNA testing was performed and predicted the fetus in each case to be D-positive. The responses suggest a number of hospitals have still not implemented the cffDNA Fetal RHD screening test.

One case commented that the pregnancy was booked in another Health Board and no cffDNA data was provided. Whilst this comment may reflect access to data for SHOT as opposed to care in pregnancy, it highlights the need for more effective information sharing between care settings, organisations, geographies, as well as professionals and citizens, to optimize patient outcomes and quality of care. NHSBT currently report these results via the online NHSBT database Sp-ICE. At present this is the only way to receive these results. Midwifes can be trained and added as users by the Sp-ICE laboratory administrator and can look up results in this system. Not all hospitals agree to share their data on Sp-ICE, which prevents other UK hospitals from being able to view these results. NHSBT are also developing an electronic data interchange between the NHSBT and hospital LIMS to enable interoperability. This is an example of work that will contribute to the digital transformation of care driven by NHSX, https://hospital.blood.co.uk/diagnostic-services/red-cell-immunohaematology/service-developments/.

There were 9 PSE in preceding pregnancies; 7 appropriately managed, 1 possible error in management due to providing anti-D Ig for miscarriage at 9^{+4} and 1 case where it is not possible to conclude if management was appropriate in a 11^{+0} termination of pregnancy. Since reporting began in 2013, a total of 69 PSE have been reported in the preceding pregnancies of which 46 (66.6%) were managed correctly. It is encouraging to see the antepartum haemorrhages reported have been managed appropriately. It is not clear why the PSE miscarriage at 9^{+4} received anti-D.

A focused approach to get treatment decisions right for D-negative women is necessary to prevent sensitisation. A review of the material available and the possibility of an electronic application to support decision should be considered. In the interim hospitals should align local policies with the BSH addendum which signposts the more recent NICE Guidance 126 and 140 (2019). Electronic health record providers and hospitals who plan to implement or continue to develop an electronic health record should map the pathway for D-negative women in pregnancy and post-partum developing intelligent pathways that support decision making.

Four of the preceding pregnancies delivered beyond 40 weeks gestation. Cumulatively (data collected from 2015 onwards), 39 out of 194 previous pregnancies (20.1%) lasted longer than 40 weeks. National Health Service (NHS) maternity statistics 2019-2020 indicate 15.9% pregnancies extended beyond 40 weeks (*https://www.gov.uk/government/statistics/nhs-maternity-statistics-england-2019-20).*

Where alloimmune anti-D was identified in the first trimester in the index case (n=12), review of the preceding pregnancies highlights cases where 'ideal' management with no risk factors still resulted in immunisation. Gaps in data in these cases make analysis difficult. The NPP cases highlight cases where apparently 'ideal' managemnt still resulted in immunisation associated with possible risk factors, including 4 with 3 or more prior pregnancies, 2 of whom were obese. Two cases did not receive ideal treatment as RAADP had not been received. Only 2 delivered beyond 40 weeks, 2 had a potential sensitising event, although treated according to current guidelines.

There were 27 cases of immune anti-D detected beyond the first trimester. Cumulatively, 31 out of 121 (25.6%) women where booking weight was provided, and who developed alloimmune anti-D in the index pregnancy, were clinically obese. National data (NHS digital 2019) report 22% incidence of obesity in pregnant women in England. https://files.digital.nhs.uk/58/FFD7B1/msms-mar19-exp-rep.pdf. The higher rate of obesity is consistent with the NPP cases; however further research is required to determine if obesity is truly associated with increased alloimmunisation risk.

In keeping with the data regarding NPP cases and PP cases where alloimmune anti D detected in the first trimester; reported use of cffDNA testing is still limited.

All 4 PSE's prior to detection of immune anti-D beyond the first trimester were managed appropriately, as far as can be determined from the data available, again highlighting cases where 'ideal 'management with no risk factors still resulted in immunisation.

Of the 39 PP cases there were 32 live births and 2 miscarriages, outcome data is missing for 2 cases. Interventions were required in 17 cases; intervention data is missing in 5 cases. Interventions ranged from phototherapy to exchange blood transfusion.

When was alloimmune anti-D detected in index (current) pregnancy?

Table 24.6: When alloimmune anti-D was detected

Time of anti-D detection	Number of new cases 2020	Number of cases cumulative to 2020
At booking (if first trimester)	12	102
After booking to 28 weeks (includes late booking)	7	31
At or after 28 weeks	14	87
At delivery	6	43
Other	0	9*
Total	**39**	**272**

***** *2 preoperative assessment following pregnancy, 3 at planned follow up of large FMH at delivery where correct dose of anti-D Ig had been given, 3 unknown, 1 non pregnant*

Where alloimmune anti-D was detected at booking in the index (current) pregnancy, only the events in the preceding pregnancy are relevant to the sensitisation (assuming no other exposure to the D antigen occurred e.g. transfusion, an unlikely event in healthy fertile women). Where anti-D is detected later in the index pregnancy, the relative contribution of events in the previous and index pregnancy is less certain.

In the 6 women who had alloimmune anti-D detected for the first time at delivery of index pregnancy, 2 had gestation of more than 40 weeks (40^{+4}, 41).

The cumulative data show that of 43 pregnancies where alloimmune anti-D was first detected at delivery in the index pregnancy, 15 cases (34.8%) were delivered after 40 weeks gestation.

Information about the pregnancy immediately preceding index (current) pregnancy

Table 24.7: Outcome of the preceding pregnancy

Outcome of preceding pregnancy	Number	Details
Live birth	32	• 22 D-positive neonates • 1 D-negative neonates • 9 D-type unknown

Other	7	• 1 medical termination of pregnancy 11/40 • 5 miscarriages • 1 IUD no anti-D Ig

What was the booking weight of preceding pregnancy? (includes only cases where previous pregnancy resulted in live birth)

Table 24.8: Booking weight of preceding pregnancy

Weight at booking in kg	Number of new cases 2020	Number of cases cumulative to 2020
<68	8	70
68-80	2	20
>80 (obese)	3	32
No information	19	115
Total	**32**	**237**

Cumulatively, of the 122 women where booking weight was provided, 32 (26.2%) were obese. National data (NHS digital 2019) report 22% incidence of obesity in pregnant women in England. (https://files.digital.nhs.uk/58/FFD7B1/msms-mar19-exp-rep.pdf)

RAADP in preceding pregnancy (for women who carried to a live birth in preceding pregnancy)

Table 24.9: Details of RAADP in preceding pregnancy

RAADP	Number of new cases 2020	Number of cases cumulative to 2020
Single dose	20	146
Two doses	1	11
Given (no details on dose)	0	2
Not given	4*	29**
No information	7	49
Total	**32**	**237**

2 TOP and 2 miscarriages not included
***1 unknown reason, 2 declined, 1 concealed pregnancy*
***Reasons include learning difficulties, concealed pregnancy, needle phobic, prior to RAADP introduction, delivered abroad, declined, typed incorrectly, midwife error, typed incorrectly as D-positive.*

In 5 cases the route was specified as deltoid, no cases were given anti-D Ig intravenously.

Details of cffDNA testing in preceding pregnancy (for women who carried to a live birth in preceding pregnancy)

As with the NPP cases, very few cases report cffDNA testing. In 4 preceding pregnancies cffDNA testing was performed and predicted the fetus in each case to be D-positive. The responses suggest a number of hospitals have still not implemented the cffDNA Fetal RHD screening test.
One case did not provide the data and commented the pregnancy was booked in another Health Board.

Table 24.10: cffDNA preceding pregnancy

cffDNA test	Number of new cases 2020	Details
Not performed	21	13 commented cffDNA not available or routinely performed 1 commented only indicated for women with alloantibodies in Scotland 1 commented not required as no antibody identified 1 commented no knowledge alloantibody prior pregnancy 1 commented booked in another Health Board 1 commented maternity decision unit 1 concealed pregnancy 2 no comment
Performed	4	Predicted D positive fetus (test performed at 13,16 and19 weeks gestation) 1 of the 4 cases did not provide gestation.
No information	7	7 missing data
Total	**32**	

Details of PSE in preceding pregnancy reported in 2020

Table 24.11: Details of PSE

Number of PSE	Details
9 PSE reported	**Appropriate management** • Antepartum haemorrhage 16 weeks, received 1500IU anti-D Ig • Antepartum haemorrhage, 34 weeks, kleihauer no fetal cells, received 1500IU anti-D Ig • Antepartum haemorrhage, 35 weeks, kleihauer < 2ml, received 500IU anti-D Ig • Antepartum haemorrhage, 21 weeks, kleihauer no fetal cells, received 1500IU anti-D Ig • Antepartum haemorrhage, 16 weeks, received 500IU anti-D Ig • 1 miscarriage, 5 weeks, no anti-D Ig • 1 fall/ abdominal trauma, 40^{+3},FMH 15.8ml, received 3500IU anti-D Ig iv, repeat FMH 7ml, received additional 1500IU anti-D Ig. **Possible error in management** • 1 miscarriage at 9^{+4}, 500IU anti-D Ig (NICE Guideline 126) **Inconclusive management** • 1 medical termination of pregnancy at 11 weeks, no detail if anti-D Ig provided (NICE Guideline 140)
21 cases had no PSE reported	
9 cases had no information on PSE	

Since reporting began in 2013, a total of 69 PSE has been reported in the preceding pregnancies of which 46 (66.6%) were managed correctly. It is encouraging to see the antepartum haemorrhages reported have been managed appropriately. It is not clear why the PSE miscarriage at 9^{+4} received anti-D.

Method of delivery of preceding pregnancy

Table 24.12: Delivery details

Type	Number of new cases 2020	Number of cases cumulative to 2020
No information	7	59
Vaginal	15	108
Instrumental	2	12
Elective caesarean section (El CS)	7	27
Emergency CS (Em CS)	2	32
Total	**33**	**238**

1 TOP and 5 miscarriages not included

Gestation at delivery of preceding pregnancy

Table 24.13: Gestation at delivery of preceding pregnancy

Gestation at delivery (weeks)	Number of new cases 2020
40 weeks or less	15
More than 40 weeks	5
No information	13
Total	**33**

1TOP and 5 miscarriages not included

Cumulatively (data collected from 2015 onwards), 39 out of 194 previous pregnancies (20.1%) lasted longer than 40 weeks. National Health Service (NHS) maternity statistics 2019-2020 indicate 15.9% pregnancies extended beyond 40 weeks (*https://www.gov.uk/government/statistics/nhs-maternity-statistics-england-2019-20*).

Postpartum management in preceding pregnancy

Table 24.14a: Test for postpartum FMH

FMH test performed postpartum	Kleihauer test (K)	Flow cytometry (F)	K+F	Method not specified	No	Notes on cases where FMH test not done	Unknown
18	14	2	2	0	**2**	1 no reason provided 1 D-negative neonates	**13**

1 TOP and 5 miscarriages not included

Table 24.14b: Postpartum anti-D Ig prophylaxis

What happened?	Number of new cases 2020	Number of cases cumulative to 2020
FMH test and appropriate dose of anti-D Ig	13	133
No prophylaxis	2*	16***
Incorrect dose/timing of anti-D Ig	1	7***
No information	13+ 3****	66**
D-negative baby	1	16
Total	**33**	**238**

1 TOP and 5 miscarriages not included

**Declined (2)*
***No consent for FMH test given 500IU (1), not able to determine if correct dose in absence FMH test, no FMH test detail so not able to determine if correct dose in absence FMH (2)*
****Reasons included: immune anti-D detected at time of delivery, typed in error as D-positive, refused, from abroad, learning difficulties, needle phobic, declined, missed anti-D Ig in error, dose 250IU, dose given late*
***** No FMH test detail so not able to determine if correct dose in absence FMH (3)*

Anti-D detected at first trimester booking of index pregnancy n=12

The details of the preceding pregnancy may provide information on the cause of immunisation in these cases.

Table 24.14: Details of management in previous pregnancy (- =no information/unknown)

Case	Obese (booking weight >80kg)	RAADP	PSE	Delivery gestation (weeks)	Delivery route	PPP	Risk factors identified
1	No	No	No	40	Vaginal	D-positive neonate FMH data missing 500IU anti-D Ig	Concealed pregnancy No RAADP Quantification postpartum FMH not available to determine if dose adequate
2	No	Yes	No	39^{+1}	Vaginal	D-positive neonate FMH data missing 1500IU anti-D Ig	Quantification postpartum FMH not available to determine if dose adequate
3	No	Yes	No	37	Emergency CS	D-positive neonate Anti-D Ig given Dose data missing FMH no fetal cells	Dose anti-D Ig not provided Likely ideal management
4	Yes	Yes	No	39^{+2}	Vaginal	D-positive neonate FMH (K) <2mL Anti-D Ig 500IU	Booking Weight 120kg 4 previous pregnancies 3 miscarriages 1 live Birth

Case	Obese (booking weight >80kg)	RAADP	PSE	Delivery gestation (weeks)	Delivery route	PPP	Risk factors identified
5	Missing data	Yes	Missing data	Missing data	Missing data	Archived pregnancy record	Inconclusive
6	Missing data	Missing data	No	Missing data	Vaginal	Missing data	3 previous pregnancies 3 live births Inconclusive
7	Missing data	No	Missing data	Missing data	Missing data	Missing data	No RAADP
8	Yes	Yes		40^{+4}	Vaginal	D-positive neonate FMH (K) no fetal cells anti-D Ig 1500IU	5 previous pregnancies 4 live birth 1 miscarriage Booking weight >80kg
9	No	Yes	APH 34/40 KH no fetal cells 1500IU anti-D Ig	37^{+2}	Vaginal	D-positive neonate FMH (K) no fetal cells anti-D Ig 1500IU	PSE APH 3 previous pregnancies 2 live birth 1 miscarriage Ideal management

Case	Obese (booking weight >80kg)	RAADP	PSE	Delivery gestation (weeks)	Delivery route	PPP	Risk factors identified
10	Missing data	Yes	No	Missing data	Elective CS	Missing data	Inconclusive
11	Missing data	Missing data	APH 16/40 500IU anti-D Ig	40^{+2}	Vaginal	D positive neonate Missing data	PSE APH Ideal management
12	Missing data	Missing data	No	36	Elective CS	Missing data	Inconclusive

Gaps in data in these cases make analysis difficult, but as in NPP reports, there are cases where apparently ‘ideal’ management still resulted in immunisation, including 4 with 3 or more prior pregnancies, 2 of whom were obese. Two cases did not receive ideal treatment as RAADP had not been received. Only 2 delivered beyond 40 weeks, 2 had a potential sensitising event, although treated according to current guidelines.

Alloimmune anti-D detected after first trimester in index (current) pregnancy n=27

Further information is requested on the index pregnancy when alloimmune anti-D is detected after the booking (first trimester) sample, as it may be that the sensitisation occurred in the index pregnancy rather than in the preceding pregnancy.

What was the booking weight of index pregnancy?

Table 24.16: Booking weight

Weight at booking in kg	Number of new cases 2020	Number of cases cumulative to 2020
<68	9	55
68-80	5	35
>80	5	31
No information	8	40
Total	**27**	**161**

Cumulatively, 31 out of 121 (25.6%) women where booking weight was provided, and who developed alloimmune anti-D in the index pregnancy, were clinically obese. National data (NHS digital 2019) report 22% incidence of obesity in pregnant women in England (https://files.digital.nhs.uk/58/FFD7B1/msms-mar19-exp-rep.pdf). The higher rate of obesity is consistent with the NPP cases; however further research is required to determine if obesity is truly associated with increased alloimmunisation risk.

RAADP in index pregnancy

Table 24.17: Details of RAADP

RAADP given or not	Number
Single dose 1500IU	14
Two dose 500IU	0
Not given	11
Alloimmune anti-D present prior to RAADP	*8**
Declined	*2*
Predicted negative fetus	1
Missing data	2

**concealed pregnancy*

cffDNA testing

Table 24.18: cffDNA testing

cffDNA test	Number of cases	Details
Not performed	18	8 test not available/ not routinely performed 10 reason unknown
Performed	5	Test performed by international blood group reference laboratory (IBGRL)
No information	5	

In keeping with the data regarding NPP cases and PP cases where alloimmune anti D detected in the first trimester; reported use of cffDNA testing is still limited.

Details of potentially sensitising events in index pregnancy

Table 24.19: Details of potentially sensitising events

Number of women	Details
4 cases PSE reported prior to detection alloimmune anti-D	• APH 5^{+2}, no anti-D Ig received • APH 24^{+0} , 1500IU anti-D Ig received, no detail provided FMH quantification • APH 37^{+1}, FMH no fetal cells detected, 1500IU anti-D Ig received • APH 21^{+0}, FMH no fetal cells detected, 1500IU anti-D Ig received
20 cases no PSE reported	

Outcomes of pregnancies reported in 2020

Table 24.20: Outcome of pregnancies reported in 2020

Number of cases	Outcome
32	Live births
2	Miscarriage 6^{+0} and 20^{+3}
5	Outcome data missing
19	No treatment
15	Treatment
10	Phototherapy
4	Exchange transfusion
1	Phototherapy and exchange transfusion
5	Data missing

References

BSH Qureshi H, Massey E, Kirwan D, et al. (2014) Guideline for the use of anti-D immunoglobulin for the prevention of haemolytic disease of the fetus and newborn. Transfus Med 2014;24(1):8–20. https://onlinelibrary.wiley.com/doi/epdf/10.1111/tme.12091 [accessed 06 March 2021].

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