

Welcome



TRANSFUSIONISTS TALK



TRANSFUSION MADE BLOODY EASY

March 18, 2025

9:30 to 10:30 a.m. (EDT) and 2:30 to 3:30 p.m. (EDT)

**Infrequently Administered Blood Products:
Information for Transfusionists**

Donna Berta RN, BScN, Clinical Project Coordinator – Nursing, ORBCoN

With registration, select the blood product you would like to learn more about and submit your questions.

Land Acknowledgement

As we gather, we begin by acknowledging that this virtual event is hosted from the traditional territories of the Mississauga and Haudenosaunee nations, and within the lands protected by the “Dish with One Spoon” wampum agreement.

Please acknowledge and reflect on the land where you are joining.



Disclosure

“This video conferenced event will be recorded, archived, and excerpts may be used for educational purposes.

By participating, you indicate your consent to recording, archiving and use for educational purposes.”



Speaker Disclosure

- No commercial product conflicts of interest to declare.
- Transfusion Transmitted Injuries Surveillance System, member Education Committee.
- Canadian Society of Transfusion Medicine, member Standards Committee.
- Some information is shared for your interest & reference.
- All patient case information is fictitious, fabricated for this learning opportunity.



Presentation Information

This presentation is being recorded.
As of April 1, 2025, slides & recording will be posted on www.transfusionontario.org.

- Click Resources tab
- Select Presentation Library
- Scroll to Transfusionists Talk



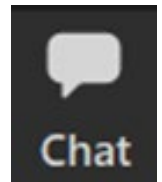
Bloody Easy E-Tools & Publications Bloody Easy Blood Administration (BEBA) Bloody Easy for Healthcare Professionals Bloody Easy Lite ORBCoN Tech Assess	IVIG/SCIG Massive Hemorrhage Protocol eLearning Provincial MHP Toolkit Supplementary Resources Recommendation Statements
Blood Utilization & Audits Audits Tools Blood Utilization Graphs COPTN Reports O Negative RBC Utilization Provincial Audit Reports	ORBCoN Resources Helpful Apps The ORBCoN Report Order Resources Presentation Library



Questions for Speaker



During the presentation, enter comments & questions via the Zoom **Chat** function.



If there are more questions than time permits, answers will be posted with the event recording at www.transfusionontario.org



Practice Polling Question

What is your current role?

- a) Front Line Nurse (RN, RPN).
- b) Nursing Educator.
- c) Transfusion Medicine Lab Technologist.
- d) Other.



Blood Product Selected Summary (as of March 6, 2025)

Rh (D) Immune Globulin (Rhlg)	82
Immune Serum Globulin (IMIG)	68
Subcutaneous Immune Globulin (SCIG)	64
C1 Esterase Inhibitors	39
Cytomegalovirus Inhibitors	35
Hepatitis B Immune Globulin	24
Varicella Zoster Immune Globulin	10



Rh(D) Immune Globulin (RhIg) Transfusionists questions answered ...

Donna Berta RN, BScN
Clinical Project Coordinator – Nursing
Ontario Regional Blood Coordinating Network (ORBCoN)

March 18, 2025

Transfusion Knowledge Question 1 - Pre

Betty is currently 28 weeks pregnant, doing well and is Rh (D) negative. At 21 weeks pregnant, Betty was in a car accident received Rhlg 1,500 IU for fetomaternal hemorrhage treatment.

Select the correct statement(s) (select all applicable):

- a) Betty has received the appropriate Rhlg dose for the pregnancy, no further Rhlg is required.
- b) Betty requires routine antenatal Rhlg prophylaxis, give 1,500 IU now.
- c) Betty requires Rhlg within 72 hours of delivery, if Betty's newborn is of child-bearing potential and Rh (D) negative.
- d) Rhlg is a manufactured medication (has a DIN number), informed consent for blood is not required.



Transfusion Knowledge Question 2 - Pre

Rhlg must be given only to Rh (D) negative individuals.

- a) True.
- b) False.



Transfusion Knowledge Question 3 - Pre

Appropriate route of administration for Rhlg is (select all applicable):

- a) Intravenous (IV).
- b) Oral (PO).
- c) Subcutaneous (SC).
- d) Intramuscular (IM).



Rh(D) Immune Globulin (Rhlg): Transfusionists questions answered ...

Learning Objectives,

by engaging in this learning, participants will be able to:

1. Apply the responses to transfusionists Rhlg questions to their practice.
2. Recognize and understand the clinical indications for Rhlg treatment.
3. Define nursing actions to safely administer Rhlg.

Outline:

- What is Rhlg? How is it manufactured?
- How does Rhlg work (mechanism of action)?
- Rh Blood Group System Review
- Obstetric Rhlg Indication
- Transfusion Rhlg Indication
- Rhlg Administration: Traceability, Injection/Infusion, Patient Monitoring
- Cautions/Side-Effects/Adverse Reactions
- Immune Thrombocytopenic Purpura (ITP) Rhlg Indication



What is Rhlg? How is it manufactured?

- Sterile solution of the gamma globulin (IgG) element of plasma, contains antibodies (anti-D) to the Rh (D) antigen.
- Also contains trace amounts of anti-C, E, A, and B. These antibodies may be detected by TML screening tests.
- Used since 1968.
- Strength denoted in International Units (previously in mcg).
- Manufactured from plasma (pooled from several thousand donors) using an anion-exchange column chromatography method. It is a blood product (informed consent, lot number traceability).
- Manufacturing process (increased safety, reduces viral risks):
 - 20N virus filter removes lipid-enveloped & non-enveloped viruses (virus size basis).
 - solvent/detergent treatment inactivates lipid-enveloped viruses.
- Stabilizers: 10% maltose & 0.03% (w/w) polysorbate 80.



How does Rhlg work (mechanism of action)?

Obstetrical Rhlg Indications

- Rhlg is given only to Rh (D) negative individuals of childbearing potential who do not have anti-D antibodies.
- Rhlg's anti-D antibodies destroy any circulating Rh (D) positive red blood cells (from the fetus or transfusion of Rh (D) positive red blood cells or platelets) before the individual's immune system has a chance to make its own anti-D antibodies.
- Preventing formation of anti-D antibodies limits possible complications:
 - mild to severe hemolytic disease of the fetus and newborn (HDFN)
NOTE: HDFN can be caused by red blood cell antibodies other than anti-D antibody (i.e., anti-K, anti-c, anti-E).
 - acute or delayed hemolytic transfusion reaction.



Rh Blood Group System Review: Rh (D) Antigen

- Blood group antigens are categorized into blood group systems (July 2023, 45 blood group systems known).
Each blood group system is genetically distinct.
- Rh (D): clinically the most important of the 56 antigens in the Rh blood group system.
- For transfusion medicine, Rh (D) antigen is second in importance (ABO blood group system antigens are most significant).
- Rh (D) antigen: highly immunogenic and complex.



**GROUP Rh(D)
POSITIVE**



**GROUP Rh(D)
NEGATIVE**



Rh Blood Group System Review: Anti-D Antibody

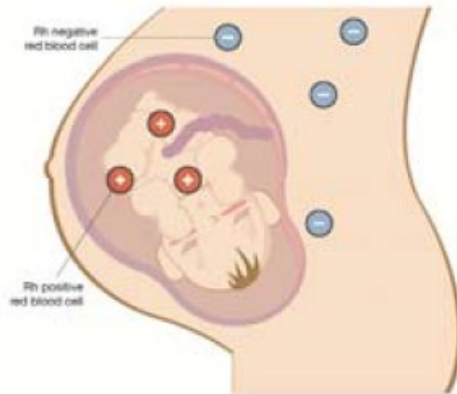


Anti-D antibody is **NOT** naturally occurring and is **NOT** in the plasma of:

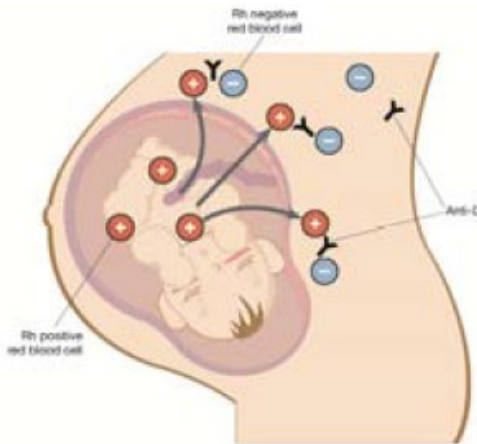
- Rh(D) positive individuals.
 - Rh(D) negative individuals **UNLESS** exposed to the D antigen, and then anti-D antibody may be produced.
- Rh(D) negative individuals can be exposed to the D antigen (and then may produce anti-D antibody) through:
 - Transfusion of Rh(D) positive RBC.
 - Transfusion of Rh(D) positive platelets (platelets contain small amounts of red blood cells).
 - Pregnancy/delivery of an Rh(D) positive fetus.
 - Anti-D antibody (a clinically significant antibody), can cause severe immediate or delayed hemolysis (**highly immunogenic**)



Rh Blood Group System Review: Pregnancy (1)



Rh(D) negative (-) gestational parent
with Rh (D) positive (+) fetus

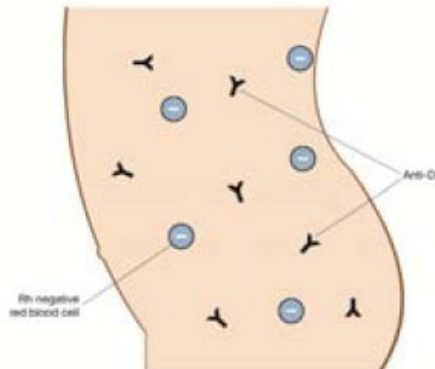


Fetal red blood cells cross the placenta. The gestational parent may form anti-D antibodies (Y) in response to the fetal Rh (D) positive (+) red blood cells.

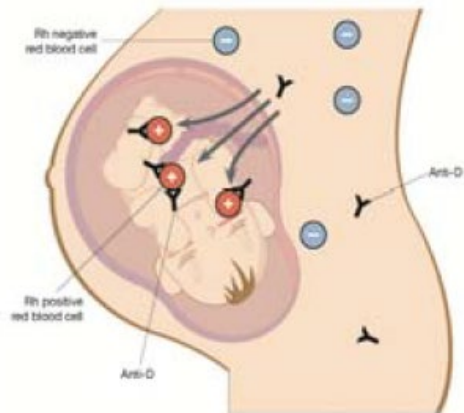
In the first pregnancy, most of the anti-D antibodies remain in the gestational parent's circulation; the fetus is usually not affected.



Rh Blood Group System Review: Pregnancy (2)



The gestational parent's immune system will remember the anti-D antibodies (Y) in case Rh (D) positive red blood cells enter their blood in the future.



If this Rh (D) negative (-) gestational parent has a subsequent pregnancy with an Rh (D) positive (+) fetus, their immune system will produce large amounts of anti-D antibodies (Y), hemolyzing the fetus' red blood cells (Hemolytic Disease of the Fetus and Newborn).



Rh Blood Group System Review: Variant Rh (D) Antigen (1)

- Most Rh (D) positive individuals express the D antigen quite well; TML finds agglutination > 2+ when anti-D reagent is mixed with red blood cells.
- However, agglutination > 2+ is not always the case! ****Complex****
Serologic Rh (D) antigen test result: weak, inconclusive, or discrepant.

Weak D (quantitative)

normal but decreased amounts of D antigen on the red blood cells.

Partial D (qualitative)

abnormal D antigen in normal amounts on the red blood cells.

Weak Partial D or Partial Weak D

overlap categories;
decreased quantities of D antigen have qualitative abnormalities.



Rh Blood Group System Review: Variant Rh (D) Antigen (2)

2022 NAC and 2024 SOGC Recommendations:

- 1. Prenatal individuals with weak, inconclusive or discrepant serological Rh (D) test result** should be further investigated with Rhesus Blood Group, D Antigen (RHD) genotyping to determine Rhlg candidacy and optimal red blood cell Rh D type for transfusion.

NOTE: In the clinical scenario of a sensitizing event (for definition see slide # 26) and serologic Rh (D) antigen test result weak, inconclusive, or discrepant, manage the individual as if Rh (D) negative.
Do not delay Rhlg administration while awaiting genotyping results.



Rh Blood Group System Review: Variant Rh (D) Antigen (3)

2022 NAC and 2024 SOGC Recommendations:

2. Prenatal RHD genotyping result: weak D type 1, 2, or 3

- no risk for alloimmunization to the D antigen
- consider the individual Rh D positive
- no requirement for RhIg prophylaxis

Prenatal RHD genotyping result: any weak D type other than 1, 2, or 3 or a partial D variant

- at risk for developing allo-anti-D antibody if exposed to the D antigen
- offer standard RhIg prophylaxis

NOTE: debate among experts re: weak D type 4; conservative approach is to provide RhIg prophylaxis.



Rh Blood Group System Review: Fetus (1)

- The scenario of concern is an Rh (D) negative gestational parent pregnant with Rh (D) positive fetus. In this scenario, the Rh (D) antigen in the Rh (D) positive fetus is derived from the non-birthing parent.
- If identity of the non-birthing parent is certain and they also test Rh (D) negative, theoretically incompatibility will not exist & RhIg is not required (*identity of the non-birthing parent must be certain*).
- For an Rh(D) negative gestational parent, if their newborn is identified as Rh (D) negative, postpartum RhIg is not required.



Rh Blood Group System Review: Fetus (2)

Genotyping of fetal blood group

- Cell-free fetal DNA (cffDNA) in the gestational parent's blood (non-invasive testing of the fetus); determines if fetus is Rh (D) positive or negative.
- Advantage of cffDNA: target RhIg prophylaxis to Rh (D) negative gestational parent pregnant with Rh (D) positive fetus; testing of the non-birthing parent is not required.
- In Canada, universal cffDNA fetal genotyping of Rh (D) negative gestational parent is not the standard of care related to costs of this technology (also international reference lab). This may be re-visited as costs might decrease with high throughput testing and as parent preferences are voiced.



Patient Case – Question 1

Anne Shirley is a 22-year-old healthy individual. Family doctor testing confirms they are 6 weeks pregnant. Anne has no previous pregnancy history and has never received a blood transfusion. Blood group & screen: Group A, Rh (D) negative, antibody screen negative.

Select the correct statement(s) (select all applicable):

- a) If Anne decides to terminate the pregnancy, Rhlg is not required.
- b) If Anne decides to continue the pregnancy, Rhlg is required at 28 weeks gestation.
- c) If Anne decides to continue the pregnancy, Rhlg is required within 72hr of delivery, only if the newborn is Rh (D) negative.
- d) Informed consent for blood transfusion is required if Anne is to receive Rhlg.



SOGC Rhlg Prophylaxis Guidelines (1)

Pregnancy

- Prenatal testing for blood group type and antibody screen is recommended after 8 weeks gestation. This test result may be appropriate for the 28-week Rhlg dose unless a sensitizing event has occurred. Refer to your hospital's policy.
- Generally D antigen is not produced prior to 8 weeks gestational age (earliest gestational age at which the D antigen has been detected on embryonic red blood cells was 7 weeks, 3 days).

Rh (D) negative pregnant individuals

- Sensitizing event definition:
Clinical conditions/events associated with potential placental trauma or disruption of the fetomaternal interface.
- Gestational age < 8 weeks: if undergoing potentially sensitizing events, i.e., threatened, spontaneous, or induced abortion, Rhlg is not required.



SOGC Rhlg Prophylaxis Guidelines (2a)

Rh (D) negative pregnant individuals

Potentially sensitizing events in pregnancy < 20 weeks gestation

- Threatened, spontaneous, or induced abortion; molar pregnancy (partial or unknown), ectopic pregnancy.
- Gestational age 8-12 weeks:
 - Some evidence that the fetal red blood cells entering maternal circulation are not sufficient to lead to sensitization; also are rare reports of sensitization following procedures.
 - May consider not giving Rhlg or may give Rhlg following risks and benefits discussion (600 or 1,500 IU; little evidence re: dose).
- Gestational age ≥ 12 weeks:
 - Give Rhlg 1,500 IU.



SOGC Rhlg Prophylaxis Guidelines (2b)

Fetomaternal Hemorrhage (FMH) / Sensitizing Event

- Volume of fetal red blood cells considered potentially sensitizing (leading to formation of anti-D antibody): 0.1 mL Rh (D) positive red blood cells.
- Established that 100 IU (20 mcg) of Rhlg protects against 1 mL of Rh (D) positive red blood cells (about 2 mL of fetal blood).
- Rhlg dose 1,500 IU (300 mcg) protects against 30 mL of fetal blood (15 mL of fetal red blood cells).
- Rhlg dose 600 IU (120 mcg) protects against 12 mL of fetal blood (6 mL of fetal red blood cells).
- 20 weeks gestation: fetoplacental blood volume 30 mL (estimate).
- Prior to 20 weeks gestation: give single Rhlg dose of 1,500 IU (300 mcg); quantification of FMH is not necessary.



SOGC Rhlg Prophylaxis Guidelines (3a)

Rh (D) negative pregnant individuals

Potentially sensitizing events in pregnancy at > 20 weeks gestation

- FMH / Sensitizing Event: placental abruption, bleeding placenta previa, blunt abdominal trauma, unexplained uterine bleeding.
- After 20 weeks gestation: quantification of FMH recommended; additional Rhlg may be needed depending on the quantity of fetal blood within gestational parent circulation.
- TML Quantification of FMH
 - Qualitative/Screening test: Rosette test.
 - Quantitative tests: Kleihauer-Betke test, Flow cytometry.
- FMH: fetal bleed volume/give Rhlg
 - < 12 mL, give Rhlg 600 IU.
 - 12 – 30 mL, give Rhlg 1,500 IU.
 - > 30 mL, give Rhlg 1,500 IU
& additional Rhlg 50 IU/1 mL fetal bleed volume > 30 mL.



SOGC RhIg Prophylaxis Guidelines (3b)

Rh (D) negative pregnant individuals

Potentially sensitizing events in pregnancy at > 20 weeks gestation

- FMH / Sensitizing Event: amniocentesis, chorionic villous sampling, cordocentesis, external cephalic version
- Give RhIg 1,500 IU (300 mcg).
- RhIG monograph advises for amniocentesis and chorionic villus sampling, repeat RhIg every 12 weeks during the pregnancy.
- Ongoing antepartum hemorrhage (RhIg was given for initial sensitizing event): serial quantitative FMH testing q 2-3 weeks, FMH positive, give additional RhIg [50 IU (10 mcg)/1 mL fetal blood], round up to vial size.



SOGC Rhlg Prophylaxis Guidelines (4a)

Rh (D) negative pregnant individuals: Antepartum Prophylaxis

- This Rhlg dose is routine antenatal prophylaxis; should be given, regardless of additional Rhlg previously provided for potentially sensitizing events/FMH.
- 28 weeks gestation: SOGC recommends Rhlg single dose of 1,500 IU (300 mcg); a 2-dose regimen may also be implemented.
- Debate:
 - Single dose of 1,500 IU (300 mcg) at 28 weeks gestation compared with a 2-dose regimen of 600 IU (120 mcg) per dose at 28 and 34 weeks gestation (2-dose regimen endorsed by The Royal Australian and New Zealand College of Obstetricians and Gynaecologists and the British Society for Haematology).
 - The 2-dose approach may attain a higher circulating concentration of Rhlg closer to term than the single larger dose.
 - Reports of decreased administration compliance with a 2-dose regimen when compared with a 1-dose regimen.
 - Evidence supports acceptable efficacy with 1 dose.



SOGC Rhlg Prophylaxis Guidelines (4b)

Rh (D) negative pregnant individuals: Antepartum Prophylaxis

- SOGC suggests 28-week antibody screening (to identify gestational parent who may need other, more intensive monitoring and/or treatment due to the presence of other alloantibodies).
- Rhlg administration should not be deferred pending antibody screen results.
- Some recommendations are changing, refer to your hospital's policy. Many hospitals' policy historically required a blood group & screen test within 30 days of Rhlg administration.



SOGC Rhlg Prophylaxis Guidelines (5)

Rh (D) negative pregnant individuals: Postpartum Prophylaxis

- Rh(D) negative gestational parent: to determine if postpartum prophylaxis is needed, newborn blood typing using cord blood.
- If newborn is Rh (D) negative, Rhlg is not required.
- If newborn is Rh (D) positive, Rhlg prophylaxis is required.
This Rhlg dose is routine postpartum prophylaxis; should be given, regardless of additional Rhlg provided for potentially sensitizing events/FMH.
- In Canada: Rhlg vials 600 IU (120 mcg) or 1,500 IU (300 mcg).
- A single dose of 600 IU or 1,500 IU can be given; quantification of FMH is required to determine if additional Rhlg is needed.
- Dose 600 IU given: FMH over 12 mL requires additional Rhlg.
- Dose 1,500 IU given: FMH over 30 mL requires additional Rhlg.
- Timing of Rhlg:
 - Ideally give Rhlg within 72 hours of delivery. Otherwise give Rhlg 1,500 IU as soon as the need is recognized, for up to 28 days following delivery.



Patient Case - Question 2

Flo, a 60-year-old individual undergoing chemotherapy required urgent platelet transfusion (spontaneous mucosal bleeding, platelet count $< 3 \times 10^9/L$).

Blood group & screen: Group A, Rh (D) negative, antibody screen negative. TML platelet inventory was limited to Group A Rh (D) positive platelet.

It is appropriate to transfuse the Group A Rh (D) positive platelet and then administer RhIg 600 IU IV.

- a) True.
- b) False.



Transfusion Rhlg Indication (1)

- To prevent alloimmunization in Rh (D) negative individual of child-bearing potential transfused with Rh (D) positive RBC (e.g., massive hemorrhage protocol) or Rh (D) positive platelets (e.g., availability).
- Each platelet unit contains less than 10×10^8 red blood cells. An average volume pooled platelet unit (194 mL) includes about 15 mL of residual RBC.
- Each Rhlg dose 1,500 IU (300 mcg) covers 30 mL of whole blood (15 mL red blood cells); lasts approximately 21 days; should be given within 72 hours of the Rh (D) incompatible platelet transfusion.
- Rhlg is **not** recommended for individuals of non-childbearing potential, because risk of immunization from platelets is low (about 1%) and passive anti-D antibodies complicate compatibility testing and may delay further transfusion.
- Rhlg treatment was developed specifically to prevent HDFN not anti-D antibody formation.



Transfusion Rhlg Indication (2)

Table 6: Transfusion Indication and Recommended Dose

Route of Administration	WinRho SDF Dose	
	If exposed to Rh _o (D) Positive Whole Blood	If exposed to Rh _o (D) Positive Red Blood Cells
Intravenous	45 international units (9 mcg)/mL blood	90 international units (18 mcg)/mL of red blood cells
Intramuscular	60 international units (12 mcg)/mL blood	120 international units (24 mcg)/mL of red blood cells

Administer 3,000 international units (600 mcg) every 8 hours **via the intravenous route** until the total dose, calculated from the above table, is administered.

Administer 6,000 international units (1,200 mcg) every 12 hours **via the intramuscular route** until the total dose, calculated from the above table, is administered.

WINRHO® SDF monograph p.20



RhIg Administration: Traceability



- TM Standards require that the lot number of RhIg is documented on the record of administration.
- This requirement supports vein to vein traceability.
- Confirm patient identifiers (surname, first name, unique identification number) are identical on armband, transfusion order, transfusion label & chart label.
- Confirm the lot number is identical on the manufacturer label, transfusion label & chart label.



RhIg Administration: Injection/Infusion

- Vial sizes: 600 IU (120 mcg), 0.5 mL and 1,500 IG (300 mcg), 1.3 mL. Single use vial, use or discard by 4 hours after the vial was entered/punctured. Administer using aseptic technique.
- RhIg is stored at 2 – 8°C. Bring to room temperature prior to administration (gently roll the vial in your hand).
- Route: IM or IV; specified in order or standard order “per hospital policy”
- IM route: per hospital IM injection policy & procedure.
- IV route: Compatible with 0.9 % sodium chloride (NaCl).
Butterfly needle and tubing, IV cannula with saline lock,
Standard IV tubing (may be diluted with 0.9% NaCl).
Flush tubing prior to and post administration.
Rate: 1,500 IU / 1.3 mL over 5 to 15 seconds
- Prepare injection/infusion at the bedside, in the presence of the patient and administer immediately. Per CNO Medication Practice Standard, once prepared do not leave RhIg unattended.



RhIg Administration: Patient Monitoring

Per RhIg product monograph:|

“Following administration of WinRho SDF for prophylaxis of Rh immunization, patients should be **kept under observation for at least 20 minutes for monitoring of potential adverse effects**. This product should be administered under the supervision of a qualified health professional that is experienced in the use of passive immunizing agents and in the management of non-sensitized Rh (D) negative individuals who receive Rh (D) positive RBCs. Appropriate management of therapy and complications is only possible when adequate diagnostic and treatment facilities are readily available.”



Patient Case – Question 3

Anne Shirley is a 22-year-old healthy individual and is now 28 weeks pregnant. Blood group & screen: Group A, Rh (D) negative, antibody screen negative. Anne has just received antenatal RhIg, 1,500 IU IV via a butterfly over 15 seconds.

About 1 hour after she returned home, Anne felt fevered, her temperature was 38.2°C.

Select the correct statement(s) (select all applicable).

- a) Anne should proceed to the closest emergency department.
- b) Anne should take acetaminophen 1000 mg 4 times daily for 5 days.
- c) Anne should notify the clinic where the RhIg was administered of her fever.
- d) Anne should ignore the fever and proceed with her usual activities.



Rhlg Cautions/Side-Effects/Adverse Reactions

- Majority of adverse reaction information is related to Rhlg given for the treatment of Immune Thrombocytopenic Purpura (ITP): intravascular hemolysis including significant anemia, acute renal insufficiency, disseminated intravascular coagulation; thromboembolic events.
- Reactions are rare when Rhlg is given for Obstetrical or Transfusion Indication: discomfort and slight swelling at the injection site, mild elevation in temperature, headache, general malaise.
- Rhlg is manufactured from human plasma. Measures to decrease the risk of transmission of infectious pathogens are followed (donor testing and manufacturing steps to filter and inactivate some viruses), however potential risk of transmission remains.
- Allergic reactions have been reported. Inform individuals of the early signs of hypersensitivity reaction including hives, generalized urticaria, chest tightness, wheezing, hypotension, and anaphylaxis.
- Rhlg may affect the efficacy of live attenuated virus vaccines for 3 months (i.e., measles, mumps, rubella, varicella/chickenpox).



How does Rhlg work (mechanism of action)?

Immune Thrombocytopenic Purpura (ITP) Indication

- Mechanism of action is not completely understood.
- Considered in clinical scenarios where the platelet count must be increased to manage bleeding.
- Rhlg should NOT be given to treat ITP in Rh (D) negative patients or in patients who have undergone splenectomy.
- Rhlg's antibodies specifically bind to Rh (D) positive red blood cells. In an Rh (D) positive patient, the antibody coated Rh (D) positive red cells are thought to be preferentially destroyed by macrophages, thereby lessening the destruction of platelets. In turn, this leads to increased circulating platelets, alleviating ITP related bleeding.
- Managed by a Hematologist; effect is transient not curative; platelet count increases for several days to several weeks.
- Possible Complications: Intravascular hemolysis including significant anemia, acute renal insufficiency, disseminated intravascular coagulation.
- Refer to product monograph for treatment protocol.



Transfusion Knowledge Question 1 - Post

Betty is currently 28 weeks pregnant, doing well and is Rh (D) negative. At 21 weeks pregnant, Betty was in a car accident received Rhlg 1,500 IU for fetomaternal hemorrhage treatment.

Select the correct statement(s) (select all applicable):

- a) Betty has received the appropriate Rhlg dose for the pregnancy, no further Rhlg is required.
- b) Betty requires routine antenatal Rhlg prophylaxis, give 1,500 IU now.
- c) Betty requires Rhlg within 72 hours of delivery, if Betty's newborn is of child-bearing potential and Rh (D) negative.
- d) Rhlg is a manufactured medication (has a DIN number), informed consent for blood is not required.



Transfusion Knowledge Question 2 - Post

Rhlg must be given only to Rh (D) negative individuals.

- a) True.
- b) False.



Transfusion Knowledge Question 3 - Post

Appropriate route of administration for Rhlg is (select all applicable):

- a) Intravenous (IV).
- b) Oral (PO).
- c) Subcutaneous (SC).
- d) Intramuscular (IM).



References (1)

Blood Bank Guy [Internet] California: Chaffin, J; 1998 Weak D phenotype 2012 [cited 2025 Mar 14] Available from: <https://www.bbgyu.org/education/glossary/glw04/>

Callum JL, Pinkerton PH, Lin Y, Cope S, Karkouti K, Lieberman L, Pendergrast JM, Robitaille N, Tinmouth AT, Weibert KE. Bloody easy 5.1 blood transfusions, blood alternatives and transfusion reactions a guide to transfusion medicine. 5th ed. Toronto: Ontario Regional Blood Coordinating Network; 2022 [revised 2023; cited 2025 Mar 14]. 145p. Available from: <https://transfusionontario.org/en/category/bloody-easy-e-tools-publications/bloody-easy-for-healthcare-professionals/>

Canadian Society for Transfusion Medicine (CA). Standards for hospital transfusion services. Markham ON; 2021 Dec; cited 2025 Mar 14. 110 p. Report No.: Version 5. Available from: <http://www.transfusion.ca/Resources/Standards>

Clarke G, Hannon J. Hemolytic disease of the fetus and newborn. In: Khandelwal A, Abe T, editors. Clinical Guide to Transfusion [Internet]. Ottawa: Canadian Blood Services, 2018 [cited 2025 Mar 13]. Chapter 12. Available from: <https://professionaleducation.blood.ca/en/transfusion/clinical-guide/hemolytic-disease-fetus-and-newborn-and-perinatal-immune>

College of Nurses of Ontario (CNO). Standards & learning CNO documents practice standard medication [Internet]. Toronto (CA): College of Nurses of Ontario; 1996 Nov [revised 2023 Dec cited 2025 Mar 14]. 8p. Report No: 41007.

Fung-Kee-Fung K, Wong K, Walsh J, Hamel C, Clarke G. The Society of Obstetricians and Gynaecologists of Canada (SOGC) Clinical Practice Guidelines. Guideline No. 448: Prevention of Rh D Alloimmunization, Journal of Obstetrics and Gynaecology Canada, Volume 46, Issue 4, 2024, 102449, ISSN 1701-2163, <https://doi.org/10.1016/j.jogc.2024.102449>.



References (2)

Issitt PD, Anstee DJ. Applied blood group serology 4th edition. Durham (North Carolina USA): Montgomery Scientific Publications; 1998. 1232p.

National Standard of Canada Canadian Standards Association (CA). Blood and blood components. Toronto ON; 2020 Mar 24; cited 2025 Mar 13. 162 p. Report No.: CAN/CSA-902:20. Available from: <https://community.csagroup.org/docs/DOC-126295> (Note: must create a user account for access)

KI BioPharma LLC Distributor (in Canada) Accuristix WINRHO® SDF product monograph [Internet]. [Vaughan, Ontario, Canada], [Publisher unknown] 2022 Jun 27 [cited 2025 Mar 13]. Available from: https://pdf.hres.ca/dpd_pm/00066449.PDF

National Advisory Committee on Blood and Blood Products. RHD Genotyping in prenatal patients. [Internet]. [Place unknown]: National Advisory Committee on Blood and Blood Products; 2017 Mar. [update 2022 May 24; cited 2025 Mar 13]. Available from: <https://nacblood.ca/en/resource/rhd-genotyping-prenatal-patients>

Ontario Regional Blood Coordinating Network. Bloody easy blood administration. version 3. Toronto: Ontario Regional Blood Coordinating Network; 2020 [cited 2025 Mar 13]. 146p. Available from: <https://transfusionontario.org/en/category/bloody-easy-e-tools-publications/bloody-easy-blood-administration/>

Ontario Regional Blood Coordinating Network. Perinatal consensus conference. Toronto: Ontario Regional Blood Coordinating Network; 2022 [cited 2025 Mar 13]. Available from: <https://transfusionontario.org/en/category/orbcon-resources/presentation-library/perinatal-consensus-conference/>

Ontario Regional Blood Coordinating Network. Resources for Midwives. version 2 Toronto: Ontario Regional Blood Coordinating Network; 2017 [cited 2025 Mar 14]. 29p. Available from: https://transfusionontario.org/wp-content/uploads/2020/06/ResourceForMidwives_Final.pdf

Reid ME, Lomas-Francis C, Olsson ML. The blood group antigen factsbook. 3rd ed. Amsterdam ; Elsevier/Academic Press; 2012.



Acknowledgements

The Ontario Regional Blood Coordinating Network (ORBCoN) gratefully acknowledges funding support provided by the Ontario Ministry of Health. The views expressed in this presentation are those of the authors and of ORBCoN and do not necessarily reflect those of the Ontario Ministry of Health or the Government of Ontario.

Many thanks to my ORBCoN and Transfusion Medicine family for their ongoing mentorship and support.

Special thanks to Laura Aseltine and Sheena Scheuermann, without their expertise this event would not have been possible!



Your participation is appreciated!



Save the Date!

Transfusion Medicine Boot Camp for Nurses Patient Experiences - Lessons for Learning

Date: November 26, 2025

Time: 9:00 a.m. – 1:00 p.m. (EST)

Registration will open mid-October.

Visit the ORBCoN website,
Presentation Library page
[to access recordings of past events.](#)



Save the Date!

Transfusionists Talk –

Transfusion Made Bloody Easy

Discussion of challenging, unusual, interesting transfusion scenarios.

Dates: June 18, 2025

September 24, 2025

Times: 9:30 – 10:30 a.m. (EDT)

2:30 – 3:30 p.m. (EDT)

To submit topics/cases, email:

bertad@mcmaster.ca



Rh(D) Immune Globulin (Rhlg): Transfusionists questions answered ...



Email: bertad@mcmaster.ca



Evaluation Survey

Please complete the evaluation survey to provide your feedback/suggestions and receive your certificate of attendance.



Evaluation Survey Options:

1. QR code
2. Link is posted in the Chat
3. Link will be emailed

