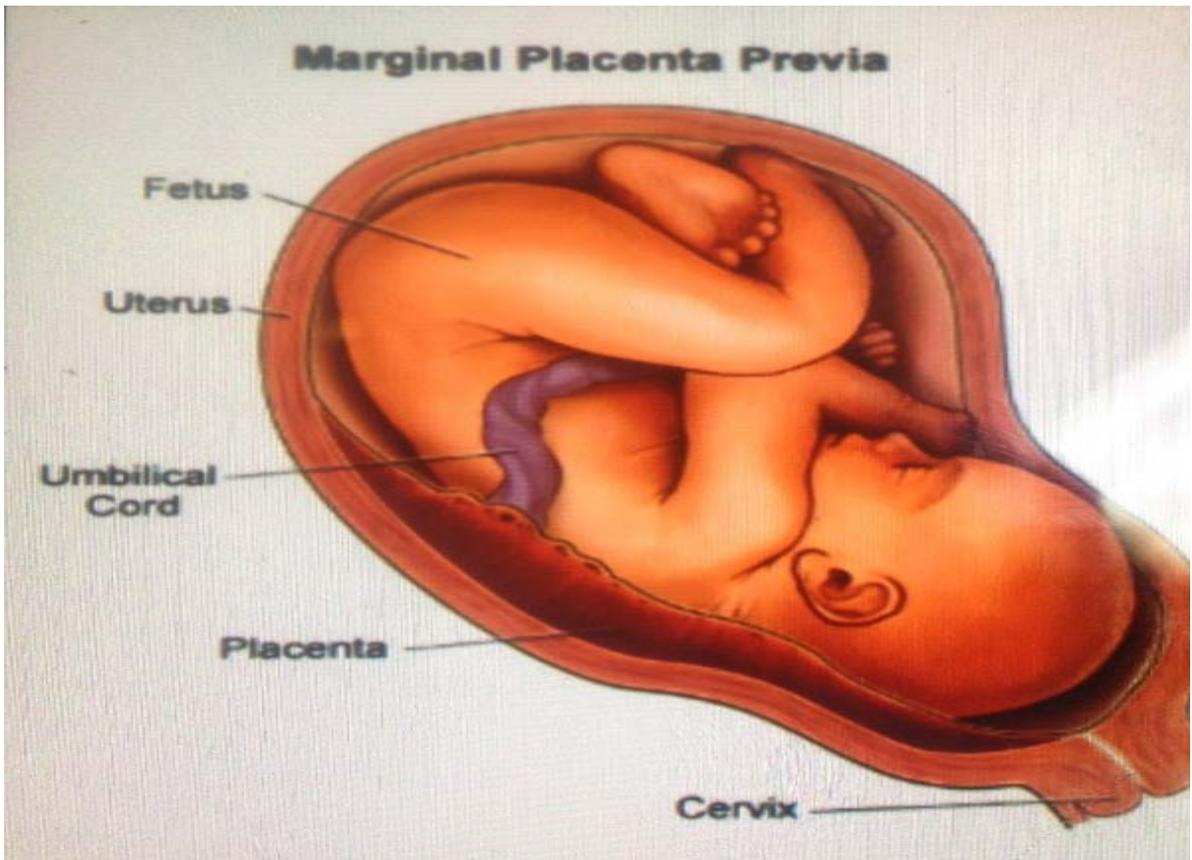




الشركة العامة لتسويق الادوية
والمستلزمات الطبية
قسم العلاقات العامة
لجنة التعليم الطبي المستمر
الشعبة العلمية / ٢٠١٦

Rho(D) immune globulin [Human; Anti-D]



(كانون الثاني / ٢٠١٦)

Rh₀(D) immune globulin :

is a [medicine](#) given by [intramuscular injection](#) that is used to prevent the immunological condition known as [Rh disease](#) (or [hemolytic disease of newborn](#)). The medicine is a solution of [IgG anti-D \(anti-RhD\) antibodies](#) that take out any fetal RhD-positive erythrocytes which have entered the maternal blood stream from fetal circulation, before the maternal immune system can react to them, thus preventing maternal sensitization. In a Rhesus-negative mother, Rh₀(D) immune globulin can prevent temporary sensitization of the maternal immune system to Rh D [antigens](#), which can cause rhesus disease in the current or in subsequent pregnancies.

Indications:

1-In a pregnancy where the mother is D-negative and the father is D-positive:

there is a 50%-100% chance, depending on whether the father is heterozygous or homozygous for RhD, that the fetus will be D-positive and the mother is therefore at risk for D alloimmunization. These women are candidates for RhIG prophylaxis.

The medication has an FDA [Pregnancy Category C](#). It is given by intramuscular injection as part of modern routine [antenatal](#) care at about 28 weeks of pregnancy, as recommended by the American College of Obstetricians and Gynecologists (ACOG). The '28 weeks' recommendation comes from the fact that 92% of women who develop an anti-D during pregnancy do so at or after 28 weeks gestation.

There is not good evidence that the use of Rho(D) immune globulin after a spontaneous miscarriage is needed

2-Postpartum administration:

A D-negative mother who is not alloimmunized to D should also receive an appropriate dose of RhIG after delivery of a D-positive infant. After delivery, a cord blood sample from infants born to D-negative mothers should be tested for the D antigen. If the neonate is D-negative, no further RhIG is needed. However, if the infant is D-positive, the mother should have a postpartum blood sample screened for fetomaternal hemorrhage in order to determine the appropriate dosage of RhIG to be administered. (the presence of residual anti-D from antepartum RhIG administration does NOT indicate ongoing protection from alloimmunization- repeat administration of RhIG is necessary).

The [rosette test](#) is a sensitive method to detect fetomaternal hemorrhage of 10 cc or more. A rosette test will be positive if fetal D-positive cells are present in the maternal sample, indicating a significantly large fetomaternal hemorrhage has occurred. A rosette test may be falsely positive if the mother is positive for the [weak D](#) phenotype and falsely negative if the neonate is weak D. If the rosette test is negative, then a dose of 300 micrograms of RhIG is given (sufficient to prevent alloimmunization after delivery in 99% of cases). The RhIG dose suppresses by up to 30 cc of whole blood.

If a fetomaternal hemorrhage in excess of 30 cc has occurred, additional testing is mandatory in order to determine the appropriate dosage of RhIG to prevent alloimmunization. A positive rosette test should be followed by a quantitative test such as the [Kleihauer-Betke test](#) (acid/elution) or an alternative approach such as [flow cytometry](#). See article on [Kleihauer-Betke test](#) for details on how the volume of fetomaternal hemorrhage is calculated.

The dosage of RhIG is calculated from the volume of fetal hemorrhage (in mL). Ex: 50 mL fetal hemorrhage / 30 ml = 1.667 (round up to 2) then add 1 = 3 vials of RhIG.

Postpartum RhIG should be administered within 72 hours of delivery. If prophylaxis is delayed, the likelihood that alloimmunization will be prevented is decreased. However, ACOG still recommends that RhIG be administered because partial protection still occurs. If the D-type of a newborn or stillborn is unknown or cannot be determined, RhIG should be administered.

3-Immune thrombocytopenia:

Primary **Immune Thrombocytopenia** (ITP) is an acquired immune mediated disorder characterized by isolated **thrombocytopenia**, defined as a peripheral blood platelet count less than $100 \times 10^9/L$, and the absence of any obvious initiating and/or underlying cause of the thrombocytopenia. Symptoms of ITP include abnormal bleeding and bruising due to the reduction in **platelet count**.¹ Rh_o(D) Immune Globulin Intravenous [Human; Anti-D] is indicated for use in non-splenectomized, Rh_o(D)-positive children with chronic or acute ITP, adults with chronic ITP, and children and adults with ITP secondary to HIV infection. Anti-D must be administered via the intravenous route when used in clinical situations requiring an increase in platelet count.

The mechanism of action of anti-D use in Immune thrombocytopenia : is not fully understood however, after administration the anti-D coated red blood cell complexes saturate **Fcγ receptors** sites on **macrophages**, resulting in preferential destruction of **red blood cells** (RBCs), therefore sparing antibody-coated **platelets**. Anti-D is recommended as a first-line therapy for ITP, along with corticosteroids and intravenous immune globulin (IVIG).

Contraindications:

The following females are NOT candidates for RhIG:

- D-negative females whose fetus is known to be D-negative
- D-negative females who have been previously alloimmunized to D (they have an anti-D antibody)
- Any D-positive females (women who test positive for the **weak D** phenotype should be considered D-positive and not receive RhIG).

Routes of administration:

RhIG can be administered either by intramuscular (IM) or intravenous (IV) injection, depending on the preparation. The IM-only preparation should never be administered IV due to the risk of complement system activation. Multiple IM doses should be given at different sites or at different times within the 72-hour window. Or, multiple IV doses can be administered according to the instructions in the package insert.

Questions for (CME):

- 1- Rh_o(D) immune globulin is _____ .
- 2- The '28 weeks' recommendation comes from the fact that _____.
- 3- Postpartum RhIG should be administered within _____ hours of delivery
- 4- Contraindications of Rh_o(D) immune globulin is _____, _____, and _____.
- 5- RhIG can be administered either by _____ or _____.