

Rh Immune Globulin Administration in the First Trimester

SUMMARY: Guidelines vary for first trimester Rh Immune Globulin administration following an event that could cause alloimmunization. This document contains updated department guidelines, which align closely with the Society of Family Planning committee 2022 consensus statement.

Gestational age	Clinical Situation	Recommendation
< 12 weeks	Spontaneous or induced abortion	No routine administration*
	Ectopic, sharp curettage & other invasive procedures	50 mcg/250 IU
> 12 weeks	All types of abortion, all procedures	300 mcg/1500 IU

***Exception:** suspected molar gestation; it is NC State Law to offer Rh Immune Globulin to patients undergoing pregnancy termination.

History: Postpartum administration of Rh D immune globulin was introduced in the 1970s. It reduced the rate of alloimmunization from 13-16% to 0.5-1.8%; antepartum administration further reduced this to 0.14-0.2%¹.

Sensitizing events include CVS, amniocentesis, threatened miscarriage or miscarriage, ectopic, evacuation of molar pregnancy, termination of pregnancy, antepartum hemorrhage, abdominal trauma, IUFD, ECV and delivery². Historically, Rh D immune globulin was given for first trimester abortion and miscarriage however there is lack of definitive evidence for these as sensitizing events.

ACOG's recommendations are based on published rates of alloimmunization derived from Kleihauer-Betke (KB) testing. The KB test is used to estimate the volume of fetal-maternal hemorrhage (FMH) but it cannot distinguish between maternal F cells and fetal red blood cells and may over-estimate the volume of FMH³. In 2019, Horvath et al utilized a flow cytometry protocol that differentiated between those two cell types and allowed accurate quantification of fetal blood in the maternal circulation before and after first trimester uterine aspiration. They calculated a threshold for alloimmunization and found that no patients met that threshold. Of note, only 5% of the patients in this study underwent sharp curettage and the mean gestational age was 7+6⁴. In 2023, Horvath et al utilized flow cytometry to prospectively evaluate 506 patients undergoing induced first trimester pregnancy termination at ≤ 12 0/7. They found no risk of sensitization⁵.

International guidelines vary. In Canada, Rh negative patients received Rh Immune Globulin for any vaginal bleeding in the first trimester. In the Netherlands neither Rh testing nor treatment was performed before 10 weeks for spontaneous abortion. A study comparing these practices did not find clinically or statistically significant higher Rh (D) antibodies in the Netherlands⁶.

In 2021, ACOG published an interim update to PB #200: Early Pregnancy Loss. They changed their wording about Rh Immune Globulin from "should receive" to "should be considered" for patients in the

first trimester although they add “especially” for those later in the first trimester. For first trimester surgical procedures, they use “should” receive².

Incidental subchorionic hemorrhage on ultrasound at <12 does not require Rh Immune Globulin administration, as this represents maternal blood.

It is NC Law to administer Rh Immune Globulin to patients undergoing pregnancy termination. A declination form must be signed if it is not administered.

Organization	Recommendation
WHO	No administration for medical or surgical abortion < 12 weeks
United Kingdom	No administration for medical < 10 weeks and consideration for surgical < 10 weeks
National Abortion Federation	No administration for medical or surgical abortion < 12 weeks
Society of Family Planning	No administration for medical abortion or uterine aspiration < 12 weeks, DO give for sharp curettage.

References:

1. *Prevention of Rh D Alloimmunization*. (2017). Wwww.acog.org. <https://www.acog.org/clinical/clinical-guidance/practice-bulletin/articles/2017/08/prevention-of-rh-d-alloimmunization>
2. *Early Pregnancy Loss*. (2018). Acog.org. <https://www.acog.org/clinical/clinical-guidance/practice-bulletin/articles/2018/11/early-pregnancy-loss>
3. Gilmore, Emma, et al. “Use of Rh Immune Globulin in First-Trimester Abortion and Miscarriage.” *Obstetrics & Gynecology*, vol. 141, no. 1, 30 Nov. 2022, pp. 219–222, <https://doi.org/10.1097/aog.0000000000005017>. Accessed 18 Aug. 2023.
4. Horvath, Sarah, et al. “The Concentration of Fetal Red Blood Cells in First-Trimester Pregnant Women Undergoing Uterine Aspiration Is below the Calculated Threshold for Rh Sensitization.” *Contraception*, vol. 102, no. 1, July 2020, pp. 1–6, <https://doi.org/10.1016/j.contraception.2020.02.011>. Accessed 18 Aug. 2023.
5. Horvath, Sarah et al. “Induced abortion and the risk of Rh Sensitization.” *JAMA*, vol 33, Sep. 2023, pp 1167-1174. doi:10.1001/jama.2023.16953.
6. Abortion at Less than 12 Weeks’ Gestation: A Systematic Review.” *BMJ Sexual & Reproductive Health*, vol. 48, no. 3, 24 Nov. 2021, pp. 163–168, <https://doi.org/10.1136/bmjsex-2021-201225>. Accessed 18 Aug. 2023.
7. Horvath, Sarah, et al. “Society of Family Planning Committee Consensus on Rh Testing in Early Pregnancy.” *Contraception*, vol. 114, Oct. 2022, pp. 1–5, <https://doi.org/10.1016/j.contraception.2022.07.002>. Accessed 18 Aug. 2023.