

Title: Intrapartum Management of Inherited Bleeding Disorders: Addressing Common Maternal and Neonatal Considerations

Authors: Samita Islam, BS¹, Mohammad Sunoqrot, MD², Najeebah A. Bade, MD³, Homa Ahmadzia, MD, MPH²

¹ The George Washington University School of Medicine and Health Sciences, Washington, DC,

² Inova Fairfax Medical Campus, Department of Obstetrics and Gynecology, Fairfax, VA,

³ Inova Schar Cancer Institute, Fairfax VA

Background:

Inherited bleeding disorders pose unique challenges during pregnancy, labor, and delivery due to the increased risk of hemorrhagic complications for both mother and neonate. While pregnancy induces physiological changes that may improve coagulation profiles in some patients, others require targeted management to ensure safe outcomes. Prior literature is limited primarily to case reports and small series, with variable recommendations regarding the use of factor replacement, timing of delivery interventions, and neonatal risk mitigation. This review aims to consolidate current knowledge across multiple rare bleeding disorders and focus specifically on intrapartum considerations—a critical and under-addressed period of care.

Purpose:

This review aims to synthesize current evidence on the intrapartum management of selected inherited bleeding disorders—specifically von Willebrand disease (VWD), hemophilia A and B carriers, factor VII deficiency, factor XI deficiency, and factor V deficiency—highlighting maternal and neonatal considerations during labor and delivery.

Methods:

A comprehensive literature search was conducted using PubMed to identify relevant case reports, case series, original research, and systematic reviews. Search terms included “factor V deficiency pregnancy,” “factor VII deficiency pregnancy,” “factor XI deficiency,” “von Willebrand disease pregnancy,” “hemophilia pregnancy and labor management,” among others. Articles published in English were included. Data were extracted regarding physiologic coagulation changes in pregnancy, clinical outcomes, and management strategies—such as the

use of replacement therapies, antifibrinolytics, and the timing of invasive procedures—to address both maternal hemorrhagic risk and neonatal bleeding complications.

Results:

Pregnancy induces a hypercoagulable state characterized by increased levels of several coagulation factors, such as VWF and factor VIII, which may partially correct mild deficiencies. In VWD, this physiologic increase may suffice in mild cases, whereas patients with severe (e.g., type 3) VWD require prophylactic replacement with FVIII/VWF concentrates and adjunctive antifibrinolytic therapy to mitigate the risk of postpartum hemorrhage. Hemophilia carriers demonstrate variable increases in factor levels during gestation; clinical management is guided by prenatal diagnosis and individual bleeding history, with cesarean delivery often preferred for male fetuses at risk for intracranial hemorrhage. For factor VII deficiency, the severity of the disorder—ranging from mild to severe—dictates the need for replacement therapy using fresh frozen plasma (FFP) or recombinant factor VIIa, with bleeding history serving as a critical predictor of peripartum risk. In factor XI deficiency, bleeding risk is unpredictable and not always correlated with laboratory values, necessitating an individualized approach based on clinical history and global hemostatic assessments. Conversely, factor V deficiency does not benefit from the gestational increase in coagulation factors, and management relies on timely FFP administration to achieve hemostatic levels and reduce the risk of significant hemorrhage.

Conclusion:

The optimal intrapartum management of inherited bleeding disorders remains challenging due to limited high-quality evidence, with current recommendations largely based on case reports and expert opinion. A multidisciplinary, individualized approach is essential to balance maternal and neonatal risks. Future research should focus on establishing evidence-based guidelines and include more women—particularly pregnant women—in clinical trials to refine prophylactic strategies and improve outcomes in this high-risk population.