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Case Series

Management of Congenital Dysfibrinogenemia during Pregnancy through Joint Obstetric Hematology Clinic - Shared Experience through 5 Cases

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Abstract

Congenital dysfibrinogenemia (CD) is a rare coagulation disorder caused by monoallelic mutations in one of the fibrinogen genes (FGA, FGB, or FGG) inherited in autosomal dominant pattern. Most individuals with CD are asymptomatic at the time of diagnosis; however, the condition may lead to bleeding or thrombosis, which can pose life-threatening risks during pregnancy, childbirth, and the early postpartum period. As such, early diagnosis and the management of blood loss are crucial. This article discusses five of our recent cases to highlight their diagnosis and treatment, with the goal of presenting various clinical scenarios involving pregnant women with congenital dysfibrinogenemia, emphasizing multidisciplinary management during antenatal, intrapartum and postpartum periods to improve obstetric and neonatal outcomes.

Keywords: *Congenital Dysfibrinogenemia (CD); Fibrinogen Replacement Therapy (FRT)*

Introduction

Dysfibrinogenemia is a rare coagulation disorder caused by monoallelic mutations in one of the fibrinogen genes (FGA, FGB, or FGG) inherited in autosomal dominant pattern [1]. It presents with a broad range of clinical symptoms, including asymptomatic cases (55%), hemorrhage (25%), and thrombosis (20%) [2]. Women with dysfibrinogenemia are reported to face a higher risk of pregnancy complications compared to the general population, such as spontaneous abortion, placental abruption, postpartum hemorrhage (PPH), and thromboembolic events, though epidemiological data on this are limited [1]. While it is well recognized that managing pregnancies in these cases requires a multidisciplinary team of specialists (including hematologists and maternal/fetal medicine experts skilled in inherited bleeding disorders), specific management guidelines are currently unavailable [3]. This report presents a case series of five pregnant patients diagnosed with dysfibrinogenemia.

Case Presentation

Case 1

A 24-year-old woman, gravida 2 para 1, with a known diagnosis of congenital dysfibrinogenemia identified during her previous pregnancy, for which she received fibrinogen replacement therapy (FRT) prior to cesarean delivery.

Throughout her current pregnancy, she was under the care of a multidisciplinary team (MDT) including anesthesiology, hematology, and maternal medicine specialists. Her fibrinogen levels remained low, between 0.5 and 0.6 g/L, while her coagulation profile-prothrombin time (PT), activated partial thromboplastin time (aPTT), and international normalized ratio (INR) remained within normal limits.

Prior to her scheduled cesarean section at 39 weeks, her fibrinogen level was found to be significantly reduced at 0.3 g/L. She was administered 8 grams of fibrinogen replacement therapy, which increased her fibrinogen level to 1.1 g/L.

She underwent cesarean section under general anesthesia, with an estimated blood loss of 600 mL. One gram of intravenous tranexamic acid was administered intraoperatively. Her postoperative course was uneventful, and she was discharged in stable condition on postoperative day three. No complications occurred during the puerperium. On the second day of life, her baby boy was found to have a very low fibrinogen level of 0.3 g/L. He was admitted to the neonatal intensive care unit (NICU) for monitoring, and circumcision was deferred due to the bleeding risk.

Case 2

A 28-year-old woman, gravida 3 para 2, with a history of two previous uncomplicated vaginal deliveries and a strong family history of congenital hypofibrinogenemia. She has no personal history of bleeding symptoms.

Current pregnancy, she was referred to the combined obstetrics-hematology clinic at 33 weeks gestation due to a low fibrinogen level of 0.86 g/L.

At 38 weeks, labor was induced. Her fibrinogen level at the time was 0.73 g/L, and she received 4 grams of fibrinogen replacement therapy (FRT), which raised her level to 1.1 g/L.

She had a spontaneous vaginal delivery without the use of neuraxial anesthesia. The delivery was uneventful, with minimal blood loss. No complications occurred during the postpartum period, and the mother remained stable.

On day 2 of life, the female newborn was found to have a low fibrinogen level of 0.4 g/L, consistent with a likely inherited hypofibrinogenemia.

Case 3

29 years old, gravida 4 para 2, previous 2 cesarean sections, she was diagnosed with dysfibrinogenemia after her last pregnancy which was ended by miscarriage at 7 weeks, and she received FRT before the surgical evacuation.

The patient was seen in our combined obstetric hematology clinic at 33 weeks, her fibrinogen level was 0.7, other coagulation profile was normal. A multidisciplinary formulated plan was done in the third trimester to plan her delivery and postpartum care.

She received 2 grams of FRT before her delivery. She underwent elective cesarean section at 37 weeks under general anesthesia, blood loss was around 700 ml. She received one gram of tranexamic acid intraoperatively.

Post operatively, fibrinogen level remained low 0.8 to 0.9, she received another 2 grams of FRT, was discharged after 4 days and no complications occurred during puerperium.

On day 2 of life, the male newborn had a normal fibrinogen level of 2.2 g/L and subsequently underwent circumcision without any complications.

Case 4

A 40-year-old woman, gravida 9 para 4, with a known diagnosis of dysfibrinogenemia (heterozygous pathogenic variant in the FGA gene identified in 2019) following a second-trimester miscarriage at 17 weeks, during which she experienced significant vaginal bleeding during surgical evacuation.

Her obstetric history includes three uncomplicated vaginal births and one cesarean section. She has a history of recurrent pregnancy losses, but extensive evaluations, including thrombophilia screening, were negative.

Throughout this pregnancy, she was closely monitored in a joint obstetrics-hematology clinic. She was managed with low-dose aspirin (100 mg daily), and her fibrinogen levels were consistently low, ranging between 0.45 and 0.6 g/L.

In the third trimester, a multidisciplinary team developed a detailed delivery and postpartum care plan. She was admitted one day prior to her scheduled cesarean section. On admission, her fibrinogen level was 0.65 g/L. She received 4 grams of fibrinogen replacement therapy (FRT), but repeat levels remained low at 0.83 g/L. Subsequently, she was given 10 units of cryoprecipitate, which raised her fibrinogen level to 1.14 g/L.

She underwent an elective cesarean section at 38 weeks under general anesthesia, indicated due to a history of prior cesarean and breech presentation. Her postoperative course was uneventful with no abnormal vaginal bleeding, and she was discharged in stable condition on the fourth postoperative day. Fibrinogen level was not assessed for the female baby.

Case 5

A 30-year-old woman, gravida 2 para 1, with a history of a previous uncomplicated vaginal delivery. She has been diagnosed with dysfibrinogenemia since 2009 but has no personal history of bleeding complications. During her first pregnancy, she received fibrinogen replacement therapy (FRT), and the course was uneventful.

This pregnancy was managed with regular follow-up in a combined obstetrics-hematology clinic. Her baseline fibrinogen levels ranged between 0.5 and 0.9 g/L. The multidisciplinary team plan was for delivery at 40 weeks.

At 37 weeks, she presented with labor pains; her fibrinogen level at that time was 0.7 g/L. She received 4 grams of FRT, but the pain subsided, and she was subsequently discharged home.

At 40 weeks, she was admitted for induction of labor. Due to persistently low fibrinogen levels (0.7 g/L), she received another 4 grams of FRT, and a repeat level showed improvement to 1.14 g/L.

She proceeded to have a spontaneous vaginal delivery without the need for epidural analgesia. Uterotonic agents and tranexamic acid were administered, and blood loss was minimal. Her postpartum course was uncomplicated, and she was discharged 24 hours later with a fibrinogen level of 1 g/L. Fibrinogen level was not assessed for the female baby.

Discussion

Pregnancy in women with congenital dysfibrinogenemia is considered high-risk. Although most pregnancies proceed without complications, there have been reports of miscarriage, stillbirth, placental abruption, intrauterine growth restriction, postpartum hemorrhage (PPH), and thrombosis. In a study of 111 pregnancies, the miscarriage rate was 19.8%. However, for women with a mutation linked to thrombosis, the rate was significantly higher, reaching approximately 40%. The likelihood of PPH also appears to be increased, with 21.4% of pregnancies being complicated by this condition [3].

In our cases with dysfibrinogenemia, pregnancy course was uneventful, all patient delivered at term and no post-partum hemorrhage or thrombotic event occurred.

In the third trimester of pregnancy, it is recommended to develop a personalized birth plan for both the mother and neonate, involving a multidisciplinary team of obstetricians, hematologists, anesthetists, neonatologists, and pharmacists. This team should collaborate to create antenatal, intrapartum and postpartum care plan that is accessible to all healthcare professionals involved. If possible, delivery should be planned in hospitals equipped with a bleeding disorder center [3].

One area of discussion is the appropriate target for fibrinogen activity. Some studies suggest aiming for an activity level of 1 g/L. However, due to the natural increase in fibrinogen levels during pregnancy, more intensive supplementation may be required, with a target fibrinogen activity of at least 1.5 g/L, especially in the third trimester [5].

In the cases we reviewed, the fibrinogen levels were consistently low throughout pregnancy and did not reach 1 g/L. As a result, all patients received fibrinogen replacement therapy (FRT) before their planned delivery, aiming to achieve a fibrinogen level of 1 g/L.

Recent guidelines indicate that fibrinogen replacement therapy (FRT) is not routinely recommended. However, in cases of recurrent miscarriages or placental insufficiency with no clear cause, fibrinogen replacement aiming for a level ≥1 g/L may be considered [6]. Congenital dysfibrinogenemia is linked to a 20% to 30% lifetime risk of thrombotic events. Pregnant women with dysfibrinogenemia are already in a hypercoagulable state, and administering fibrinogen replacement further increases the risk of thrombosis. Therefore, it is essential to thoroughly assess the patient's personal and family medical history to identify the most likely thrombotic or bleeding phenotype [7]. The use of prophylactic thromboprophylaxis or aspirin should be carefully considered, weighing the risks and benefits [8].

In our cases, we decided against using prophylactic anticoagulation during pregnancy. With the support of a multidisciplinary team, including maternal-fetal medicine (MFM), hematology, anesthesia, and pharmacy, our patients experienced safe and successful pregnancies, leading to the delivery of healthy, full-term infants.

It is recommended to assess fibrinogen activity levels quarterly, and, if possible, measure fibrinogen antigen levels [9]. For cases of vaginal bleeding during pregnancy, fibrinogen replacement should be initiated, aiming for a fibrinogen level ≥ 1.5 g/L until the bleeding stops [9].

For patients with fibrinogen levels below 1 g/L in the third trimester, it is recommended to schedule delivery with access to laboratory and blood bank support. For women with third-trimester fibrinogen levels of 1 g/L or higher, spontaneous labor and vaginal delivery may be considered, though scheduled delivery is preferred, especially in those with a history of bleeding. During labor, fibrinogen replacement is advised for women with a bleeding phenotype, targeting a fibrinogen level of ≥1.5 g/L. For those undergoing neuraxial anesthesia, it is important to monitor fibrinogen levels throughout delivery to maintain a level of ≥ 1.5 g/L. In cases of cesarean section, some guidelines recommend maintaining a fibrinogen level of ≥ 1.5 g/L, based on limited consensus from hematology and obstetrics experts [10].

In our cases, fibrinogen levels remained low throughout the pregnancy and did not reach 1 g/L. All patients received fibrinogen replacement therapy (FRT) prior to their planned delivery, with the goal of achieving a fibrinogen level of 1 g/L. None of the patients who had a vaginal delivery received an epidural during labor, and all patients who underwent cesarean sections were given general anesthesia.

As the fetus is at risk for congenital dysfibrinogenemia, an autosomal dominant condition, invasive fetal procedures are advised to be avoided like fetal scalp monitoring and forceps or vacuum-assisted delivery. In these cases, an early cesarean section should be considered,

particularly if prolonged labor is anticipated. During the postpartum period, it is recommended to monitor fibrinogen levels and initiate early replacement therapy, aiming for a level greater than 1.5 g/L. Additionally, tranexamic acid should be administered if bleeding occurs [3].

Thromboprophylaxis is recommended for 6 weeks postpartum in women with dysfibrinogenemia type 3B. For other types of dysfibrinogenemia, thromboprophylaxis guidelines are similar to those for the general population, regardless of fibrinogen levels. In women with a bleeding phenotype, mechanical prophylaxis is preferred [3].

Conclusion

Managing congenital dysfibrinogenemia during pregnancy is challenging and requires a multidisciplinary approach, involving hematology, obstetrics, maternal-fetal medicine, anesthesia, pharmacy, and blood bank services. To guide treatment, it is essential to thoroughly assess both clinical and laboratory parameters. These cases contribute to the limited literature on fibrinogen disorders in pregnancy and emphasize the role of a multidisciplinary approach, the safety and tolerability of fibrinogen replacement therapy. However, further research with a larger sample size is necessary to enhance the understanding of effective management strategies for this condition in pregnancy.

Bibliography

1. Yan J., *et al*. "Management of dysfibrinogenemia in pregnancy: A case report". *Journal of Clinical Laboratory Analysis* 32.3 (2017): e22319.
2. Peyvandi F. "Epidemiology and treatment of congenital fibrinogen deficiency". *Thrombosis Research* 130.2 (2012): S7-S11.
3. Alessandro C., *et al*. "Management of pregnancy and delivery in congenital fibrinogen disorders: communication from the ISTH SSC Subcommittee on Factor XIII and Fibrinogen". *Journal of Thrombosis and Haemostasis* 22.5 (2024): 1516-1521.
4. Miesbach W., *et al*. "Treatment of patients with dysfibrinogenemia and a history of abortions during pregnancy". *Blood Coagulation and Fibrinolysis* 20.5 (2009): 366-370.
5. Saes JL., *et al*. "Pregnancy outcome in afibrinogenemia: Are we giving enough fibrinogen concentrate? A case series". *Research and Practice in Thrombosis and Haemostasis* 4.2 (2020): 343-346.
6. Miesbach W., *et al*. "Treatment of patients with dysfibrinogenemia and a history of abortions during pregnancy". *Blood Coagulation and Fibrinolysis* 20 (2009): 366-370.
7. Langer M., *et al*. "Management of congenital dysfibrinogenemia in pregnancy: A challenging patient case". *Research and Practice in Thrombosis and Haemostasis* 5.8 (2021): e12619.
8. Bouvier S., *et al*. "Successful pregnancy under fibrinogen substitution with heparin and aspirin in a woman with dysfibrinogenemia revealed by placental abruption". *Thrombosis and Haemostasis* 118.11 (2018): 2006-2008.
9. Casini A and de Moerloose P. "How I treat dysfibrinogenemia". *Blood* 138.21 (2021): 2021-2030.
10. Zhang Y., *et al*. "Women with congenital hypofibrinogenemia/afibrinogenemia: from birth to death". *Clinical and Applied Thrombosis/Hemostasis* 26 (2020): 1076029620912819.

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