IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 23, Issue 2 Ser. 2 (February. 2024), PP 33-35
www.iosrjournals.org

A Pregnant Woman With Von Willebrand Disease Type 3 – Successful Outcome At A Tertiary Care Hospital

Dr.Indiramani[1], Dr.Sunitha[2], Dr.Harika.G[3]
[1](Department Of Obstetrics And Gynaecology, Osmania Medical College, India)
[2](Department Of Obstetrics And Gynaecology, Osmania Medical College, India)
[3](Department Of Obstetrics And Gynaecology, Osmania Medical College, India)

ABSTRACT
Von Willebrand disease is a hereditary bleeding disorder. This disease can be severe and life threatening anytime in her lifetime, more critical in pregnant women during labour and subsequently during early puerperium. Early diagnosis can help in minimizing and controlling blood loss and to reduce maternal and perinatal morbidity and mortality. We are discussing a case of a pregnant woman with type 3 Von Willebrand disease, who presented to Niloufer Hospital, Hyderabad. We are presenting how early diagnosis, regular antenatal checkups, multidisciplinary approach helped in successful outcome by transfusing timely adequate Antihemophilic Factor/von Willebrand Factor Complex. Prompt diagnosis, frequent surveillance, multidisciplinary approach with hematologist landed us in good outcome.

Date of Submission: 27-01-2024 Date of Acceptance: 07-02-2024

I. INTRODUCTION

Von Willebrand Disease is the most common inherited bleeding disorder. Symptomatic disease occurs in 1 in 1000 to 1 in 10,000 individuals. Von Willebrand Factor serves two roles 1) as the major adhesion molecule that tethers the platelet to the exposed subendothelium 2) as the binding protein for factor VIII, resulting in significant prolongation of Factor VIII half life in circulation. The platelet adhesive function of vWF is critically dependent on the presence of large vWF multimers, whereas Factor VIII binding is not. Most of the symptoms of Von Willebrand Disease are 'platelet-like' except in more severe Von Willebrand Disease when Factor VIII is low enough to produce symptoms similar to those found in Factor VIII deficiency(Hemophilia A).

Von Willebrand Disease has been classified into 3 major types, Type 1 – is the most common type, accounting for about 80% of cases, partial quantitative deficiency, with a parallel decrease in vWF protein, vWF function and Factor VIII levels. Type 2 – have functional defects, accounting for about 15-20% cases. 4 subtypes – 2A, 2B, 2M, 2N. In subtype 2A, 2B, 2M platelet binding and/or collagen binding vWF activity is decreased. In subtype 2N, variation in vWF gene that affect binding of Factor VIII. Type 3 – with virtually no vWF protein and usually Factor VIII levels <10%. This is the most rare type with less than 1% cases. Inheritance is autosomal dominant. Type 3 and occasionally type 2 are autosomal recessive.

Risk of bleeding differs with the subtype. They can be easy bruising, gingival bleeding, epistaxis, menorrhagia, severe bleeding after surgery or trauma. In pregnancy, heavy bleeding may follow first trimester pregnancy loss, postpartum hemorrhage is a serious complication. Clinical course in pregnancy and labour is variable. Bleeding complications during pregnancy are most frequent when levels of vWF and Factor VIII levels are <50IU/L. Risk persists for several weeks, with reports of hemorrhage upto 3-5 weeks postpartum.

In our report, we present a case of a pregnant woman with type 3 Von Willebrand disease, how she was managed during antepartum, intrapartum and postpartum period.

II. CASE REPORT

A 31 year old primigravida who is a known case of type 3 Von Willebrand Disease was referred from Hematologist, Nizams Institute of Medical Sciences, Hyderabad to Department of Obstetrics and Gynaecology, Niloufer Hospital, Hyderabad at around 20 weeks of gestation to plan for safe institutional delivery. Patient was apparently asymptomatic until menarche, when she presented with puberty menorrhagia, had inpatient hospital admission multiple times, multiple PRBC transfusions and on evaluation was diagnosed with Von Willebrand Disease at Nizams Institute of Medical Sciences, Hyderabad where platelet aggregometry test showed decreased levels of Ristocetin. Symptomatic treatment was been given for AUB using antifibrinolytic tranexamic acid. At around 25 years of age, patient had spontaneous hemoperitoneum, for which she was conservatively managed at

Nizams Institute of Medical Sciences using cryoprecipitate, PRBC and Desmopressin nasal spray. As patient did not have any complaints later, she did not go for followup.

Patient was admitted at 20 weeks of gestation in our institute for evaluation. Bleeding time and APTT was prolonged. Rest of the coagulation profile was normal. vWF:Ag-3%. Factor VIII Assay-3% activity. Mixing studies with Factor VIII deficient plasma(1:1) showed prolonged APTT. Targetted Imaging For Fetal Anomalies was normal. Maternal and fetal cardiac evaluation was normal. Rest of the investigations were normal. Patient was kept under close monitoring by frequent antenatal checkups and fetal monitoring done. She was admitted at 39 weeks for safe confinement. At 39 weeks, platelet count was normal, APTT was prolonged, Factor VIII assay-2% activity, vWF-3% activity, growth scan was normal, showing normal flow velocities with estimated fetal weight of 3.2kg.

Adequate blood and its components were arranged and reserved. Planned for induction with mechanical method and dinoprostone PGE2 vaginal insert.Close monitoring of maternal and fetal condition was done. Instrumental delivery was conducted and delivered an alive female of birth weight 3.1kg with $APGAR^{7}_{9}$. Postpartum hemorrhage was noted and managed medically. Baby was seen by paediatrician and shifted to mother side. Throughout intrapartum period, close monitoring was done and under the guidance of hematologist, injection Alphanate(Antihemophilic factor/von Willebrand Factor complex) was given. Immediately after delivery, sinus tachycardia was noted and started on tab Metoprolol 25mg OD. 2 packed red cell transfusion was given.

	Injection Alphanate in IU
Before induction	2500
In active phase of labour	2500
Immediate postpartum	1000
12hr postpartum	2500
Postnatal day 1	2500
Postnatal day 2	2500
Postnatal day 3	2500
Postnatal day 4	2500

Tranexamic acid was continued till 7 days postpartum. Patient discharged after 1week and followed up weekly upto 6 weeks, no secondary postpartum hemorrhage noted. Contraceptive advice given at time of discharge and baby is under neonatologist care.

III. DISCUSSION

During pregnancy, many changes in hemostasis occur that result in hypercoaguable state. The levels of several hemostatic factors increase, including factors VII and X, fibrinogen and plasminogen activator inhibitor type1. Conversely, the levels of anticoagulant factors such as protein S, decrease. Furthermore, FactorVIII and vWF levels change during pregnancy in both women with and without Von Willebrand Disease. The levels of both factors start increasing in the second trimester and peak during the third trimester. These increases depend on the type and subtype of Von Willebrand disease. On the other hand, women with type 1 and type 2 vWD usually achieve normal vWF and Factor VIII levels at the end of pregnancy. These levels are unchanged in women with type 3 vWD during pregnancy. Factor VIII and vWF levels decrease rapidly after delivery in women with vWD, approaching baseline after 1 week and reaching baseline after 3weeks. Consequently, women with vWD may be at risk of postpartum hemorrhage upto 3-5 weeks. vWD does not appear to affect fetal growth or development.

Vaginal birth is usually appropriate. Casaerean birth is indicated only for obstetric indications. Usually, if level of vWF activity is >50%, excessive bleeding does not occur in vaginal delivery. Even for neuraxial anaesthesia, vWF activity >50% is generally considered adequate. Delivery should be planned at a centre where vWF and Factor VIII levels can be monitored and replacement products available for administration if needed, since vWF levels can decrease within hours after delivery.

Management : Desmopressin is the treatment of choice in type 1 vWD. Intranasal preparation 300mcg repeated 12^{th} hourly are used. Intravenous preparation, 0.3mcg/kg over 30 minutes can also be given. Other than type 1and who do not respond to desmopressin, injection Alphanate should be given. Usual dose is 20-50IU/kg. During labour, this can be given every 12hour. For vaginal delivery and labour, usually lower end of dose range will suffice. For casaerean delivery, upper end of dose range will suffice. For those with type 2 and 3, Factor VIII/vWF concentrates are needed.

Delivery : Regarding of mode of delivery, it is recommended that levels of vWF and Factor VIII be maintained at >50IU/L during delivery and for atleast 3-5 days after delivery. Postpartum period requires extravigilant monitoring and intervene as and when needed. Antifibrinolytic agent, tranexamic acid has been

suggested by 2021 ASHVWD guidelines for vWD patients during postpartum period for 10 to 14 days. Intravenous dose of 10 to 15 mg/kg every 8 hourly. Oral dose is 25mg/kg, 3 times per day. It can be given in addition to other hemostatic agents. It is safe during lactation. NSAIDS should generally be avoided to reduce the possible contribution to increased bleeding risk.

Newborn : newborns at risk of mild vWD should receive normal newborn care. Those at risk of more severe types of vWD should be seen by paediatric hematologist. Neonatal vWF and Factor VIII levels tend to be higher than baseline for approximately 6 months. Testing should be delayed or repeated after 6 months.

Prenatal testing : Individuals with type 3 vWD or those who have had a previous child with type 3 vWD, may choose to have prenatal diagnosis using chorionic villus sampling or amniocentesis.

IV. CONCLUSION

Early diagnosis, regular followup, multidisciplinary approach and timely transfusion of Factor VIII/vWF and necessary blood products lead towards a successful delivery in our case. These women need institutional deliveries and multidisciplinary approach and lifetime followup.

REFERENCES

[1]. Inocencio G, Braga A, Azevedo S, Buchner G, Management Of Von Willebrand Disease Type 3 During Pregnancy – 2 Case Reports. Eur Rev Med Pharmacol Sci. 2013;17(21):2857-9.
[2]. Rashmi Ag, Kumar R, Dayamayi As, Nallipalli S. Von Willebrand Disease In Pregnancy; Int J Reprod Contracept Obstet Gynecol 2021;10:4602-5.
[3]. Govorov I, Lofgren S, Chaireti R, Et Al. Postpartum Hemorrhage In Women With Von Willebrand Disease- A Retrospective Observational Study. Plos One, 2016;11:10.
[4]. Pacheo Ld, Constantine Mm, Saade Gr, Et Al. Von Willebrand Disease And Pregnancy: A Practical Approach For The Diagnosis And Treatment. Am J Obstet Gynecol. 2010;203:194.