

BLOOD TRANSFUSION REACTION IN ABNORMAL UTERINE BLEEDING WITH SEVERE ANEMIA: A CASE REPORTRicha Lucy¹, Rahul S.^{2*}, Shiv Kumar³ and Doddayya H.⁴¹Pharm D. Intern, Department of Pharmacy Practice, N.E.T Pharmacy College, Raichur-584103 Karnataka, India.²Lecturer, Department of Pharmacy Practice, N.E.T Pharmacy College, Raichur-584103 Karnataka, India.³Professor & HOD, Department of Pharmacy Practice, N.E.T Pharmacy College, Raichur-584103 Karnataka, India.⁴Principal & HOD, Department of Pharmaceutics, N.E.T Pharmacy College, Raichur-584103 Karnataka, India.***Corresponding Author: Rahul S.**

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ABSTRACT

Blood transfusion remains a life-saving therapy and according to World Health Organization (WHO) guidelines, of 10 units per 1000 population, approximately 8 million units of blood are currently needed to meet the transfusion demand for a population of about 800 million. Blood transfusion may be needed in circumstances like obstetric hemorrhage, road traffic accidents, armed conflicts, sickle cell disease, anaemias especially in children, malnutrition, HIV, malaria, and parasitic infections. It is important to highlight the blood transfusion reactions, possible causes, expected symptoms and signs, preventive measures, and appropriate management. Blood transfusion reaction refers to undesirable, unintended, adverse response to the administration of blood, blood components, or derivatives that are well thought-out to be definitely probable or possibly related to this product. About 0.5–3% of all transfusions result in transfusion reaction. Blood transfusion reaction/adverse transfusion reactions could be fatal/severe or mild, immediate or delayed, immunological or nonimmunological, and infectious or non-infectious.^[1]

KEYWORDS: adverse blood reactions, blood transfusions, clinical features, management, immunological, immediate, infectious.

INTRODUCTION

Blood transfusion is generally the process of receiving blood or blood products intravenously. Transfusions are used for various medical conditions to replace lost components of the blood. The blood transfusion procedure begins when an intravenous (IV) line is placed onto the patient's body. It is through the IV that the patient will begin to receive the new blood. Depending on the amount of blood, a simple blood transfusion can take between 1-4 hours. Following the completion of the blood transfusion, the patient's vital signs are checked and the IV is removed. There are four common types of blood transfusions: Red blood cell transfusions: A person may receive a red blood cell transfusion if they have experienced blood loss, if they have anaemia (such as iron deficiency anaemia), or if they have a blood disorder. Platelet transfusions: A platelet transfusion can help those who have lower platelet counts, such as from chemotherapy or a platelet disorder. Plasma transfusions: Plasma contains proteins important for health. A person may receive a plasma transfusion if they have experienced severe burns, infections, or liver failure. Whole blood transfusion: A person may receive a whole blood transfusion if they have experienced a severe traumatic hemorrhage and require red blood cells,

white blood cells, and platelets. Blood transfusion reaction refers to undesirable, unintended, adverse response to the administration of blood, blood components, or derivatives that are well thought-out to be definitely probable or possibly related to this product.^[3] About 0.5–3% of all transfusions result in transfusion reaction. There are multiple complications of blood transfusions, including infections, hemolytic reactions, allergic reactions, transfusion-related lung injury (TRALI), transfusion-associated circulatory overload, and electrolyte imbalance.^{[4][5][6]} According to the American Association of Blood Banks (AABB), febrile reactions are the most common, followed by transfusion-associated circulatory overload, allergic reaction, TRALI, hepatitis C viral infection, hepatitis B viral infection, human immunodeficiency virus (HIV) infection, and fatal hemolysis which is extremely rare, only occurring almost 1 in 2 million transfused units of RBC. Adverse Event and Approximate Risk Per Unit Transfusion of RBC.

- Febrile reaction: 1:60.
- Transfusion-associated circulatory overload: 1:100.
- Allergic reaction: 1:250.
- TRALI: 1:12,000.
- Hepatitis C infection: 1:1,149,000.

- Human immunodeficiency virus infection: 1:1,467,000.
- Fatal hemolysis: 1:1,972,000.

Blood transfusions can be a key part of treatment for people with anaemia, when necessary. In people with anaemia, the blood is not carrying as much oxygen to cells throughout the body as it should. The reason is either that there is not enough blood or that there are not enough hemoglobin-rich, fully functioning red blood cells to transport the oxygen. Doctors can use a blood test of hemoglobin levels to diagnose anaemia. According to the American Society of Hematology, females with hemoglobin values lower than 12.0 grams per decilitre (gm/dl) and males with readings lower than 13.5 gm/dl have anaemia. Anaemia is one of the world's most common blood disorders. Many factors contribute to the disorder, including a poor diet, life threatening disease, or lifelong health conditions. Blood transfusions can be a key part of treatment for people with anaemia, when necessary.^[7]

CASE REPORT

A 50 year old female patient hospitalized in the obstetrics and gynaecology department with acute uterine bleeding and severe anaemia. She has a history of irregular cycles and blood transfusions 2 years back. The patient presented to the hospital with complaints of bleeding since 1 month and irregular cycles since 5 months.

Her Hemoglobin was 5.3gm/ dL, MCV – 65.2 fL, MCH – 18.5 pg, MCHC –28.3g/dL PCV – 28.7%, & RBC – 2.66 million cells/mcL. No obvious demographic abnormalities was detected during the USG abdomen.

Patient started on Injection Tranexamic acid 500 mg (Pause MF) IV in 100 ml normal saline thrice a day to treat heavy menstrual bleeding. Tablet Ferrous Ascorbate 100mg and Folic Acid 1.1mg (Orofer XT) for treatment and prevention of iron and folic acid deficiency anaemia, Tablet Calcium citrate, magnesium zinc and vitamin D3 (Caltin)100 mg once daily. Packed red blood cells (PRBCs) transfusion was started on the third day of admission. The blood transfusion reaction occurred by the end of transfusion. The patient developed fever and chills, for which Injection Pheniramine Maleate (Avil) 25 mg and Injection Dexamethasone (Dexona) 4 mg/ml was given.

DISCUSSION

Red blood cell transfusions may be given to patients with severe iron-deficiency anaemia who are actively bleeding or have significant symptoms such as chest pain, shortness of breath, or weakness. Transfusions are given to replace deficient red blood cells. Abnormal uterine bleeding occurs most commonly at the beginning and end of the reproductive years: 20% of cases occur in adolescent girls, and more than 50% occur in women older than 45. Drugs that are not

hormones are often used first, especially in women who want to become pregnant or to avoid the side effects of hormone therapy. These drugs include, Nonsteroidal anti-inflammatory drugs (NSAIDs) and Tranexamic acid. Rarely, very heavy bleeding requires emergency measures. They may include fluids given intravenously and blood transfusions. The amount of time that it takes to receive a blood transfusion varies. It depends on factors such as how much blood a person needs and what sort of blood product is necessary. For anaemia, people will receive a transfusion of red blood cells, which takes longer than a transfusion of plasma or platelets. The typical length of time for such a procedure is approximately 4 hours.^[8] In the above mentioned case the patient had a history of irregular cycles and was admitted to the hospital due to bleeding. The laboratory data showed the patient is severely anaemic. Proper treatment was given to the patient for her conditions and blood transfusion was started as per the advice of the physician. Packed red blood cells were transfused to the patient by the nurse under the supervision of the clinician. The patient showed allergic reactions like fever and chills by the end of the transfusion for which Injection Pheniramine Maleate 25 mg and Injection Dexamethasone 4mg/ml was administered immediately in order to stop the allergic reactions.

CONCLUSION

The clinicians should be aware of the possibility of the adverse reactions that can occur during the blood transfusion and should be well known about the treatments to resolve the problems if an adverse reaction occur. In this case the patient was recovered from the allergic reaction by immediately administering Injection Pheniramine Maleate 25 mg and Injection Dexamethasone 4mg/ml. Further the patient was followed up for her condition and was found to be recovered; also she was advised to inform the clinicians about the reaction prior to blood transfusion in the future.

Conflict of interest: No conflict of interest.

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