INTERNATIONAL JOURNAL OF CURRENT MEDICAL AND PHARMACEUTICAL RESEARCH
ISSN: 2395-6429, Impact Factor: 4.656
Available Online at www.journalcmpr.com
Volume 8; Issue 08(A); August 2022; Page No.357-359
DOI: http://dx.doi.org/10.24327/23956429.ijcmpr20220083

Research Article

DERMATOLOGICAL REACTION AFTER BLOOD TRANSFUSION

Sasi Kumar T*, Sathya Narayana Reddy B, Surya Kiran S, Nandini V and Tejaswini K

Department of Pharmacy Practice, Annamacharya college of Pharmacy, Razampet, Kadapa, Andhra Pradesh, India

ARTICLE INFO

Article History:
Received 6th May, 2022
Received in revised form 15th June, 2022
Accepted 12th July, 2022
Published online 28th August, 2022

Key words:
Dermatological, transfusion, reactions, adverse effects.

ABSTRACT

Blood is an expensive and precious resource. Non-hemolytic transfusion reactions are the most common type of transfusion reactions, circulatory overload related to blood transfusion, allergic reactions. The goal of hemovigilance is to increase the safety and quality of blood transfusion. It is necessary to recognize and prompt response to adverse transfusion reactions. Evidence-based medicine has changed today's scenario of clinical practice to decrease adverse transfusion reactions with prevalence and incidence rate also discussed.

INTRODUCTION

In 1901 discovery of the blood group, by Karl Landsteiner helps in Transfusion therapy from a difficult to a relatively safe procedure, by the use of advanced technology furtherly improved the safety of blood transfusion. Medicine and Obstetric /Gynec patients were affecting the highest number of reactions. [1]Allogenic blood transfusions were causes Adverse reactions which are unprecedented risks. Most commonly donor blood having unknown components causes Allergic reactions. Along with mast cell stimulation, immunologically active undigested / digested food allergens and the presence of sensitizing antigens in donor plasma or less commonly antibodies from an allergic donor can act as triggering events in allergic reactions. In 1994 France implemented the first hemovigilance surveillance system, 1996 United Kingdom were established Serious hazards of transfusion (SHOT) as voluntary reporting. As a part of the SHOT initiative in the United Kingdom and Ireland were reported 366 deaths or major complications of Transfusions were reported. Nearly 52% of common adverse effects were providing wrong blood to patients. On 10th December 2012 Indian Pharmacopoeia Commission in collaboration with the National Institute of Biological has launched a Hemovigilance Programme of India.[2,3]

Allergic reactions are characterized by cutaneous symptoms, and minor, anaphylactoid, anaphylactic have been used to describe the severity of the symptoms in patients. The term anaphylactoid was similar to symptoms of anaphylaxis but not mediated by IgE. The term major allergic reactions are characterized by symptoms including hypotension, dyspnea, wheezing, chest pain, and tachycardia. Gastrointestinal problems like nausea, vomiting, diarrhea may also develop. Major allergic reactions can be catastrophic, resulting in shock, cardiac arrest, and death.[4]Symptoms of Allergic reactions were occurring within seconds to minutes of the start of transfusion or sometimes it takes a few hours to develop allergic reactions. [5]

The estimated risk of Delayed Hemolytic Transfusion Reaction in various studies shows a range between 0.007 to 0.6907 per 1,000 red cell units transfused.[6]The rate of the prevalence of Isolated IgA deficiency is very common between 1 in 500 and 1 in 200. The total annual incidence of hypotensive acute transfusion reaction was 86 out of 2.5 million blood transfusions in the UK in 2015.[7]In the United States (2009) A national blood collection and utilization survey estimated that more than 60,000 transfusion reactions annually which 16,000 were serious reactions.[8]Incidence of adverse reactions to any blood components is estimated to be 1 in 100 transfusions, incidence of adverse reactions with platelet transfusions is approximately 1% to 4%, which is higher compared with RBC or plasma transfusions. Life-threatening should occur in 1:20 000 – 50 000 transfusions.[9,10]

Case report

A 40 years male patient was admitted to the male medicine ward in a government general hospital with the chief complaints of shortness of breathand pedal edema for 5 days. The patient was known case of CKD with MHD (maintain hemodialysis) for 3 months.He had hypertension for 1 year and

*Corresponding author: **Sasi Kumar T**
Department of Pharmacy Practice, Annamacharya college of Pharmacy, Razampet, Kadapa, Andhra Pradesh, India

the patient was diagnosed as a CKD with MHD, HTN with disseminated tinea with erythroderma. But the patient got a blood transfusion then he got dermatological reactions.(figure 1 &2 shows the dermatological reaction on the whole body).

Figure 1 Dermatological reaction on stomach

Figure 2 dermatological reaction on legs

The patient got treatment with the drugs of Inj. Erythropoietin 4000units (S.C) thrice weekly. T. Nodosis 500mg thrice a day, T. Prazosin 5mg BD, T. Cilindipine 10mg BD, T. Cal+D_3OD, Oint. Betamethasone+ glycerine lotion, T. Cetrizine 10mg OD. The laboratory reports Hemoglobin 7.9g/dl, Total count 11,600 cells/cum, ESR 25 mm/hr, platelet count 2.6lakhs/cum, RBS 112 mg/dl, Creatinine 6.5mg/dl, T. Bilirubin0.8mg/dl.

Outcomes

After suspecting the condition patient was advised to use the drugs for preventing the worsening of the condition like T. Prazosin 5mg, T. Cilindipine 10mg for Hypertension, Oint. Betamethasone+ glycerine lotion, T. Cetrizine 10mg for dermatological reactions. After 7 days of treatment, the patient shows significant improvement in his condition and got discharged.

DISCUSSION

With hemovigilance reported the incidence rate of transfusion reaction in the adult population is nearly 2%, for pediatric patients may experience 1.9 – 2.6 times more reactions than adults. Febrile non-hemolytic transfusion reactions (FNHTR), were the majority of transfusion reactions (61.4%) and 35.7% were considered as allergic and 2.9% were diagnosed as a transfusion-associated circulatory overload (TACO). This study reveals that transfusion reactions reported to the National Healthcare Safety Network Haemovigilance Module, only 5136 reactions were reported among 2144,723 components transfused (0.24%).[11]The mechanisms of allergic transfusion reactions are largely unknown, but most commonly explain the deficiency of IgA which is implicated in fatal anaphylactic transfusion reactions. The prevalence rate indicates that severe IgA deficiency with anti-IgA antibodies is ~1 in 1,200 people.[12]The study by Williams shows that there are 21 cases of laboratory error, including incorrect grouping (13), mislabelling (3), selection of wrong components (5), some other like a collection of blood from its storage is a major source of primary error, misidentification of patients, bedside check is vital in preventing transfusion error.[13]In 2010-2012 SHOT reported that Analysis of allergic reactions to plasma shows the incidence was 2 per 100,000. In the UK, the current risk of blood and blood component transfusion remains a low risk of death at 8.0 and risk of major morbidity 51.8 per 1,000,000 components issued.[14]

CONCLUSION

Transfusion reactions are responsible for causing the most serious adverse reactions or events. Awareness about various clinical features of acute transfusion reactions with an ability to assess the serious reactions on time can lead to a better prognosis. Observation and monitoring are required throughout the transfusion episode, more so within in first 15 min. There should be a standard operating procedure containing the details for documentation, reporting, evaluation, and follow-up of all adverse reactions.

Reference

1. Chavan, Patil, Rajopadhy. Adverse blood transfusion reactions at tertiary care hospital: *International Journal of Research in Medical Sciences*: 2016.4:6:2402.
2. Sinha RTK, Rai P, Dey A. A study of transfusion related adverse events at a tertiary care center in Central India: A retrospective evaluation. *J Med Sci Health* 2016;2(3):6-12.
3. Obeagu, Babar, Uzoma. Allergic blood Transfusion reaction: A Review: *Int. J. Curr. Res. Med. Sci*. (2021). 7(5): 25-3.
4. Eder, Linda. Noninfectious Complications of Blood Transfusion: Arch Pathol Lab Med. 2007;131:708–718.
5. Sahu S, H, Verma A. Adverse events related to blood transfusion. *Indian J Anaesth* 2014;58:543-51.
6. Chavan, Patil, Rajopadhy. Adverse blood transfusion reactions at tertiary care hospital: *International Journal of Research in Medical Sciences*: 2016.4:6:2402.
7. Webb, Alan, Hands. An acute transfusion reaction: Clinical Medicine 2018 Vol 18, No 1: 95–7.
8. Gelaw, Yemataw *et al*. "Proportion of Acute Transfusion Reaction and Associated Factors Among Adult Transfused Patients at FelegeHiwot Compressive Referral Hospital, Bahir Dar, Northwest Ethiopia: A Cross-Sectional Study." *Journal of blood medicine* vol. 11 227-236. 30 Jun. 2020, doi:10.2147/JBM.S250653.
9. Ben Clevenger, MB BS FRCA, Andrea Kelleher, MB BS FRCA, Hazards of blood transfusion in adults and children, Continuing Education in Anaesthesia Critical Care & Pain**,** Volume 14, Issue 3, June 2014, Pages 112–118, https://doi.org/10.1093/bjaceaccp/mkt042
10. Sato, Nelson, Goto, *et al*. Incidence and severity of adverse effects related to platelet: Ann Blood 2021;6:24 | http://dx.doi.org/10.21037/aob-20-90.
11. Kohorst, Khazal, Tewari *et al*. Transfusion reactions in pediatric and adolescent young adult haematology

oncology and immune effector cell patients: EClinical Medicine 26 (2020) 100514.
12. William Savage. Allergic Reactions to Blood Transfusion, Pearls of Laboratory Medicine.
13. Williamson, lowe, coben *et al*. summary of annual report 1996-97:Seriuos hazards of transfusion:1998.
14. Dr Dafydd Thomas, Bolton-Maggs. Annual shot report, summary: 2013

How to cite this article:

Sasi Kumar T *et al* (2022) 'Dermatological Reaction after Blood Transfusion', *International Journal of Current Medical and Pharmaceutical Research,* 08(08), pp 357-359.

****