Elite Journal of HIV. Volume 2 issue 2(2024), Pp. 16-32
https://epjournals.com/journals/EJHIV

Challenges and Considerations in Managing Blood Transfusion for Individuals with HIV

*Emmanuel Ifeanyi Obeagu[1], Chinyere Nkemjika Anyanwu[2] and Getrude Uzoma Obeagu[3]

[1]Department of Medical Laboratory Science, Kampala International University, Ishaka, Uganda.
[2]Department of Microbiology and Immunology, Kampala International University, Western Campus, Uganda
[3]School of Nursing Science, Kampala International University, Ishaka, Uganda.

*Corresponding authour: Emmanuel Ifeanyi Obeagu, Department of Medical Laboratory Science, Kampala International University, Uganda.

E-mail: emmanuelobeagu@yahoo.com, obeagu.emmanuel@kiu.ac.ug, 0000-0002-4538-0161

Abstract

This review addresses the complex landscape of managing blood transfusions for individuals with HIV, uncovering challenges and considerations that influence patient care. As HIV has evolved into a manageable chronic condition with the advent of antiretroviral therapy (ART), the coexistence of transfusion requirements introduces a nuanced dynamic. Key challenges explored in this review encompass transfusion-related immunomodulation, the risk of alloimmunization, disparities in access to safe blood products, maintaining optimal adherence to ART, potential transfusion-related complications, pediatric considerations, and the ethical and psychosocial dimensions inherent in the intersection of blood transfusion and HIV management. Transfusion-related immunomodulation stands as a significant challenge, requiring careful monitoring due to its potential impact on the immune response of individuals with HIV. Alloimmunization, particularly in the context of multiple transfusions or prolonged exposure, poses a risk that necessitates strategic measures to minimize its occurrence. Disparities in access to safe blood products, especially in resource-limited settings, underscore the importance of establishing robust blood supply systems and advocating for equitable healthcare access for individuals with HIV. Maintaining optimal adherence to ART, a cornerstone in managing HIV, becomes challenging in the presence of potential drug interactions and alterations in absorption related to blood transfusions. The risk of transfusion-related complications, including infections and reactions, accentuates the need for stringent screening and monitoring protocols to ensure the safety of blood products. Pediatric considerations add an additional layer of complexity, demanding tailored approaches that account for developmental factors and the unique needs of younger populations with HIV.

Citation: Obeagu EI, Anyanwu CN, Obeagu GU. Challenges and Considerations in Managing Blood Transfusion for Individuals with HIV. Elite Journal of HIV, 2024; 2(2): 16-32

Keywords: *challenges, blood transfusion, HIV*

Introduction

The confluence of blood transfusion and antiretroviral therapy (ART) in the management of individuals living with HIV introduces a multifaceted intersection that demands a comprehensive exploration of challenges, considerations, and tailored care strategies. Over the past decades, advances in ART have transformed HIV from a life-threatening illness to a chronic, manageable condition.[1-4] However, individuals with HIV may encounter circumstances necessitating blood transfusions, ranging from complications of the disease itself to surgery-related needs or coexisting medical conditions. The delicate balance between the benefits of ART in suppressing viral replication and the potential challenges introduced by blood transfusions forms the central focus of this examination. Antiretroviral medications have been instrumental in prolonging and enhancing the quality of life for individuals with HIV, allowing for viral suppression and immune reconstitution. Nonetheless, the coadministration of blood transfusions introduces a layer of complexity that extends beyond routine considerations in both HIV management and transfusion medicine. This introduction emphasizes the pivotal role of understanding the dynamic interplay between these interventions, each crucial in its own right, and collectively shaping the landscape of patient care for those navigating the complexities of HIV.[5-20]

Viral load, a key determinant of HIV replication in the bloodstream, serves as a critical parameter guiding treatment decisions. The fluctuations in viral load associated with blood transfusions raise questions about the timing, frequency, and immunomodulatory effects of these interventions. As we delve into the nuanced aspects of viral load dynamics influenced by both blood transfusions and ART, a comprehensive understanding emerges as paramount for optimizing treatment outcomes and maintaining the overall well-being of individuals living with HIV. The complexities inherent in pediatric HIV management add a distinct dimension to this exploration. Children living with HIV may require both blood transfusions and ART, prompting considerations of developmental factors, drug metabolism, and the unique challenges associated with providing integrated care for younger populations. This review aims to bridge existing knowledge gaps, providing insights into the specific considerations in pediatric HIV management within the context of blood transfusions.[21-33]

Transfusion-Related Immunomodulation

Transfusion-Related Immunomodulation (TRIM) refers to the complex immunological alterations that can occur as a result of blood transfusions. While the primary goal of transfusions is to provide essential components such as red blood cells, platelets, or plasma, emerging research suggests that the immune system of the recipient may undergo various changes in response to the transfused blood products. Blood transfusions have been associated with immunosuppression, affecting both cellular and humoral immunity. This suppression may increase the susceptibility of recipients to infections and alter the course of existing immune-related conditions. Conversely, transfusions can trigger inflammatory responses. The introduction of foreign antigens, storage lesions in blood

components, and the release of cytokines during storage may contribute to inflammatory reactions, impacting the overall immune homeostasis of the recipient. Various immune cells, including T cells, B cells, and natural killer cells, may experience functional changes post-transfusion. This alteration in immune cell behavior has implications for both immediate and long-term immune responses in transfusion recipients. Transfusions can lead to the release of cytokines into the recipient's bloodstream. This cytokine release may contribute to systemic inflammatory responses, potentially influencing the development of complications such as transfusion-related acute lung injury (TRALI) or febrile non-hemolytic reactions.[34-39]

TRIM has been investigated in the context of organ transplantation and cancer. Blood transfusions may influence the immune response to transplanted organs and tissues, and there is ongoing research on the potential impact of transfusions on cancer recurrence and progression. The effects of TRIM are often dependent on the duration and dose of transfusions. Prolonged exposure to transfused blood components and the cumulative dose may exacerbate immunomodulatory effects. Individual patient factors, including age, underlying health conditions, and the presence of inflammatory disorders, may contribute to variations in the extent and nature of TRIM. Personalized medicine approaches are essential for understanding and mitigating these effects. TRIM has implications for patient outcomes, particularly in vulnerable populations such as critically ill patients, those undergoing surgery, or individuals with compromised immune systems. Clinicians must consider the potential immunomodulatory effects when making transfusion decisions.[40-49]

Risk of Alloimmunization

Alloimmunization refers to the immune response of an individual to antigens that are foreign to their own body, typically occurring in response to exposure to blood products from a donor with different blood group antigens.[50] The risk of alloimmunization is an important consideration in transfusion medicine, as it can have clinical implications for individuals receiving blood transfusions. Alloimmunization commonly occurs when there are discrepancies between the blood type of the donor and the recipient. The immune system may recognize the transfused blood as foreign, leading to the production of antibodies against the donor's blood group antigens. The major blood group systems, such as the ABO system and the Rh system, are crucial in determining compatibility between donors and recipients. Mismatches in these antigens can trigger an immune response and increase the risk of alloimmunization. The risk of alloimmunization is influenced by the frequency of transfusions. Individuals who receive multiple transfusions, such as those with chronic conditions requiring regular blood transfusions, are at a higher risk of developing antibodies against donor antigens. Pregnant women may be exposed to fetal blood group antigens that differ from their own, leading to sensitization. This can result in the production of antibodies against these antigens, impacting future pregnancies and transfusion compatibility. Individuals

who have previously received blood transfusions may develop antibodies against antigens present in the transfused blood. Subsequent transfusions with mismatched antigens can exacerbate the risk of alloimmunization.[51-56]

In addition to blood group antigens, human leukocyte antigen (HLA) disparities between donors and recipients can contribute to alloimmunization.[57] HLA antigens play a role in organ transplantation and can also provoke immune responses in the context of blood transfusions. Alloimmunization can lead to hemolytic transfusion reactions, where the immune system attacks and destroys transfused red blood cells. This can result in serious complications, including hemolytic anemia, kidney injury, and, in severe cases, disseminated intravascular coagulation (DIC). Matching blood types between donors and recipients, especially in the ABO and Rh systems, is a key strategy to minimize the risk of alloimmunization. Blood banks and transfusion services employ strict protocols to ensure compatibility and reduce the likelihood of sensitization. Crossmatching involves testing the compatibility of donor and recipient blood before a transfusion. This additional step helps identify and prevent potential alloimmunization reactions. Regular monitoring of individuals at risk for alloimmunization, such as pregnant women. [58-62]

Disparities in Access to Safe Blood Products

Disparities in access to safe blood products persist globally, presenting a significant public health challenge.[63] Safe blood is essential for various medical interventions, including surgeries, trauma care, and the treatment of certain medical conditions. However, several factors contribute to uneven access to safe blood products, particularly in low- and middle-income countries. Rural and remote areas often face challenges in accessing safe blood products due to inadequate infrastructure, transportation difficulties, and a scarcity of blood collection and processing facilities. This geographic disparity can result in delayed or insufficient availability of blood in emergency situations. Weak healthcare infrastructure, especially in resource-limited settings, contributes to disparities in access. The lack of well-equipped blood banks, trained personnel, and appropriate storage facilities can compromise the safety and availability of blood products. Disparities in blood donor recruitment are evident, with certain populations being less likely to donate blood. Cultural beliefs, societal norms, and misconceptions about blood donation can affect donor participation, leading to shortages in specific regions or communities. In some regions, limited access to advanced testing and screening technologies may pose challenges in ensuring the safety of donated blood. Screening for infectious diseases, including HIV, hepatitis, and syphilis, is crucial to prevent the transmission of infections through blood products.[64-68]

Economic factors play a role in access to safe blood products. Individuals in economically disadvantaged communities may face difficulties in affording the costs associated with blood transfusions, testing, and other related medical procedures.[69] Lack of awareness and education about the importance of voluntary blood donation, blood safety, and the impact of transfusions contribute to disparities. Efforts to increase public knowledge and dispel myths about blood donation are essential to encourage voluntary, regular donations. Disparities in access to safe blood can be influenced by variations in regulatory frameworks, policies, and governance. Strong, well-

enforced regulations are crucial to ensuring the quality and safety of blood products. Cultural beliefs, social stigma, and religious considerations may affect the willingness of individuals to donate blood or accept blood transfusions. Addressing these factors is vital for promoting a positive culture around blood donation and ensuring the availability of safe blood. In regions prone to natural disasters, conflicts, or other emergencies, disparities in access to safe blood products may be exacerbated. Adequate emergency preparedness and response plans are essential to ensure a timely and effective supply of safe blood during crises. Global collaboration and support are crucial for addressing disparities in access to safe blood products. International partnerships, funding, and capacity-building initiatives can contribute to strengthening healthcare systems and improving blood safety worldwide.

Adherence to Antiretroviral Therapy (ART)

Adherence to Antiretroviral Therapy (ART) is a critical factor in the effective management of HIV (Human Immunodeficiency Virus) infection. ART involves the use of a combination of antiretroviral drugs to suppress the viral load, enhance the immune system, and prevent the progression to AIDS (acquired immunodeficiency syndrome). Adherence to prescribed treatment regimens is essential for achieving optimal therapeutic outcomes. Adherence to ART typically involves a daily regimen of antiretroviral drugs. Strict adherence is necessary to maintain consistent drug levels in the body, preventing viral replication and the development of drug-resistant strains. Consistent adherence to ART is associated with viral suppression, where the amount of HIV in the blood is significantly reduced. Viral suppression is a key goal of treatment, leading to improved immune function and a lower risk of transmission to others. Inconsistent adherence can lead to the development of drug-resistant strains of HIV. Drug resistance poses a significant challenge in HIV management, as it limits the effectiveness of certain antiretroviral drugs and may necessitate a switch to alternative medications. Adherence involves taking medications at the prescribed times and following the recommended dosage. Deviating from the prescribed schedule can impact drug efficacy and compromise treatment outcomes. Some individuals may experience side effects from antiretroviral drugs, which can affect adherence. It is important for healthcare providers to address side effects promptly and explore alternative drug options if necessary to enhance tolerability and adherence.[70-84]

Comprehensive patient education and counseling are crucial components of promoting adherence. Providing clear information about the importance of adherence, potential side effects, and the long-term benefits of ART can empower individuals to adhere to their treatment plans. Psychosocial factors, such as mental health, substance abuse, and social support, can influence adherence. Individuals facing challenges in these areas may require additional support and interventions to enhance their ability to adhere to ART. The healthcare system plays a role in supporting adherence through regular monitoring, follow-up appointments, and the availability of healthcare professionals for consultation. Accessible healthcare services contribute to a supportive environment for individuals on ART. Stigma and discrimination associated with HIV can be barriers to adherence. Creating a supportive and non-judgmental environment, both within healthcare settings and in the community, is essential for promoting adherence and overall well-

being. Mobile health interventions, such as reminder apps and telehealth services, can be effective.[85-97]

Potential for Transfusion-Related Complications

Blood transfusions, while essential for various medical conditions, carry the potential for complications.[98] The safety of transfusions is a paramount concern, and healthcare providers take rigorous measures to minimize risks. However, complications can still arise. Immunologic reactions occur when the recipient's immune system reacts to foreign antigens in the transfused blood. This can lead to acute hemolytic reactions, febrile non-hemolytic reactions, allergic reactions, or anaphylaxis. Hemolytic reactions result from the destruction of red blood cells. This can be due to ABO or Rh incompatibility between the donor and recipient blood, leading to hemolysis, hemoglobin release, and potential organ damage. These reactions involve an immune response to donor white blood cells or platelets, causing fever, chills, and other flu-like symptoms. Leukoreduction (removing white blood cells) and premedication with antipyretics can reduce the risk. Allergic reactions can range from mild hives and itching to more severe anaphylaxis. Allergic responses are often associated with plasma proteins or other components in the transfused blood. Anaphylactic reactions are severe and potentially life-threatening allergic responses. They can occur due to sensitivities to plasma proteins, IgA deficiency, or other allergic triggers in the transfused blood.

TRALI is a rare but serious complication characterized by acute respiratory distress after transfusion. It is associated with donor antibodies reacting with recipient white blood cells, leading to lung injury and inflammation. Rapid transfusion of large volumes of blood can overload the circulatory system, leading to congestive heart failure, pulmonary edema, and other cardiovascular complications.[99] Despite stringent screening, there is a small risk of transfusion-transmitted infections. Bacterial contamination, viruses, or other pathogens may be present in the donor blood, leading to infections in the recipient. Individuals receiving frequent blood transfusions, such as those with thalassemia or sickle cell disease, may develop iron overload over time. This can lead to organ damage, particularly in the liver and heart. Citrate is used as an anticoagulant in stored blood. Rapid transfusion can result in citrate accumulation in the recipient, leading to metabolic disturbances such as hypocalcemia and metabolic alkalosis. Delayed hemolytic reactions occur when the recipient's immune system gradually mounts a response against minor incompatible antigens in the transfused blood. These reactions may not be immediately apparent but can lead to hemolysis over time. GVHD is a rare but severe complication in which transfused donor lymphocytes attack the recipient's tissues. GVHD is more common in immunocompromised recipients and can be fatal.

Pediatric Considerations

When it comes to blood transfusions in pediatric patients, several unique considerations and challenges must be taken into account to ensure the safety and effectiveness of the transfusion.[100] Pediatric patients have smaller blood volumes compared to adults. It's crucial to calculate the

appropriate transfusion volume based on the child's weight, ensuring that the transfusion does not exceed safe limits. Some blood components, such as red blood cells and platelets, may be modified or specially prepared for pediatric use. Pediatric blood bags and filters are designed to accommodate smaller volumes. The age and developmental stage of the child can influence the choice of blood components and the transfusion process. Neonates, infants, and older children may have different physiological responses to transfusions. Obtaining and maintaining appropriate venous access in pediatric patients can be challenging. Healthcare providers may need to use smaller catheters, and careful monitoring is required to prevent complications like infiltration or extravasation. Pediatric patients are more susceptible to volume overload, especially in cases of rapid transfusion. Close monitoring of fluid balance and vital signs is crucial to prevent complications like congestive heart failure or pulmonary edema. Pediatric patients may be at an increased risk of TACO due to their smaller circulatory volumes. Monitoring for signs and symptoms, such as respiratory distress and increased heart rate, is essential to detect and manage TACO promptly.

The rate of transfusion in pediatric patients may need to be adjusted based on their age, weight, and clinical condition. Slow transfusions are often recommended to minimize the risk of adverse reactions.[101] Children are at risk of hemolytic reactions if there is ABO or Rh incompatibility between the donor and recipient. Strict adherence to blood typing and crossmatching protocols is essential to prevent such reactions. The decision to transfuse pediatric patients is based on specific clinical indications. Transfusion thresholds for hemoglobin levels may vary depending on the child's age, underlying medical conditions, and the presence of symptoms. Involving parents or guardians in the decision-making process and providing education about the transfusion procedure and potential risks and benefits is essential. Collaboration with families can enhance adherence to the treatment plan. Pediatric patients may experience anxiety or fear related to the transfusion process. Providing psychosocial support, age-appropriate explanations, and distractions can help alleviate stress and improve the overall experience. Neonates and premature infants have unique considerations, including the need for smaller blood volumes, specialized equipment, and careful monitoring due to their fragile physiology. Post-transfusion monitoring is crucial for pediatric patients. Monitoring for adverse reactions, vital signs, and laboratory parameters ensures prompt identification and management of any complications.

Ethical and Psychosocial Dimensions

Ethical considerations, such as the potential stigma associated with both HIV and blood transfusions, may impact decision-making and patient willingness to undergo transfusions. Ensuring a patient-centered approach that addresses psychosocial dimensions, respects individual autonomy, and fosters open communication is essential. Ethical frameworks should guide healthcare providers in making decisions that prioritize the well-being and dignity of individuals with HIV.[102-]

Conclusion

Effectively managing blood transfusions for individuals with HIV requires a nuanced understanding of the challenges unique to this patient population. By proactively addressing immunomodulation effects, minimizing the risk of alloimmunization, improving access to safe blood products, optimizing ART adherence, and considering pediatric and ethical dimensions, healthcare providers can navigate these challenges and provide comprehensive care. A collaborative, multidisciplinary approach that integrates expertise from various specialties is key to ensuring the best possible outcomes for individuals with HIV requiring blood transfusions. Ongoing research, education, and advocacy efforts will further contribute to refining strategies and enhancing the overall quality of care in this dynamic healthcare landscape.

References

1. Simmons DS. Managing misfortune: HIV/AIDS, health development, and traditional healers in Zimbabwe. Michigan State University; 2002.
2. Mojola SA, Angotti N, Denardo D, Schatz E, Xavier Gómez Olivé F. The end of AIDS? HIV and the new landscape of illness in rural South Africa. Global Public Health. 2022;17(1):13-25.
3. Seyler L, Lacor P, Allard SD. Current challenges in the treatment of HIV. Pol Arch Intern Med. 2018;128(10):609-616.
4. Wouters E, De Wet K. Women's experience of HIV as a chronic illness in South Africa: hard-earned lives, biographical disruption and moral career. Sociology of health & illness. 2016;38(4):521-542.
5. Obeagu EI, Obeagu GU, Obiezu J, Ezeonwumelu C, Ogunnaya FU, Ngwoke AO, Emeka-Obi OR, Ugwu OP. Hematologic Support in HIV Patients: Blood Transfusion Strategies and Immunological Considerations. Applied Sciences (NIJBAS). 2023;3(3).
6. Obeagu EI, Obeagu GU. Hematological Changes Following Blood Transfusion in Young Children with Severe Malaria and HIV: A Critical Review. Elite Journal of Laboratory Medicine. 2024;2(1):33-45.
7. Obeagu EI, Obeagu GU. Hematological Changes Following Blood Transfusion in Young Children with Severe Malaria and HIV: A Critical Review. Elite Journal of Laboratory Medicine. 2024;2(1):33-45.
8. Obeagu EI, Obeagu GU. The Role of Blood Transfusion Strategies in HIV Management: Current Insights and Future Directions. Elite Journal of Medicine. 2024;2(1):10-22.
9. Obeagu EI, Obeagu GU. Advances in Understanding the Impact of Blood Transfusion on Anemia Resolution in HIV-Positive Children with Severe Malaria: A Comprehensive Review. Elite Journal of Haematology. 2024;2(1):26-41.
10. Obeagu EI, Okwuanaso CB, Edoho SH, Obeagu GU. Under-nutrition among HIV-exposed Uninfected Children: A Review of African Perspective. Madonna University journal of Medicine and Health Sciences. 2022;2(3):120-127.
11. Obeagu EI, Alum EU, Obeagu GU. Factors associated with prevalence of HIV among youths: A review of Africa perspective. Madonna University journal of Medicine and Health Sciences. 2023;3(1):13-18. https://madonnauniversity.edu.ng/journals/index.php/medicine/article/view/93.

Citation: Obeagu EI, Anyanwu CN, Obeagu GU. Challenges and Considerations in Managing Blood Transfusion for Individuals with HIV. Elite Journal of HIV, 2024; 2(2): 16-32

12. Obeagu EI. A Review of Challenges and Coping Strategies Faced by HIV/AIDS Discordant Couples. Madonna University journal of Medicine and Health Sciences. 2023 ;3(1):7-12. https://madonnauniversity.edu.ng/journals/index.php/medicine/article/view/91.
13. Obeagu EI, Obeagu GU. An update on premalignant cervical lesions and cervical cancer screening services among HIV positive women. J Pub Health Nutri. 2023; 6 (2). 2023; 141:1-2. links/63e538ed64252375639dd0df/An-update-on-premalignant-cervical-lesions-and-cervical-cancer-screening-services-among-HIV-positive-women.pdf.
14. Ezeoru VC, Enweani IB, Ochiabuto O, Nwachukwu AC, Ogbonna US, Obeagu EI. Prevalence of Malaria with Anaemia and HIV status in women of reproductive age in Onitsha, Nigeria. Journal of Pharmaceutical Research International. 2021;33(4):10-19.
15. Omo-Emmanuel UK, Chinedum OK, Obeagu EI. Evaluation of laboratory logistics management information system in HIV/AIDS comprehensive health facilities in Bayelsa State, Nigeria. Int J Curr Res Med Sci. 2017;3(1): 21-38.DOI: 10.22192/ijcrms.2017.03.01.004
16. Obeagu EI, Obeagu GU, Musiimenta E, Bot YS, Hassan AO. Factors contributing to low utilization of HIV counseling and testing services. Int. J. Curr. Res. Med. Sci. 2023;9(2): 1-5.DOI: 10.22192/ijcrms.2023.09.02.001
17. Obeagu EI, Obeagu GU. An update on survival of people living with HIV in Nigeria. J Pub Health Nutri. 2022; 5 (6). 2022;129. links/645b4bfcf3512f1cc5885784/An-update-on-survival-of-people-living-with-HIV-in-Nigeria.pdf.
18. Offie DC, Obeagu EI, Akueshi C, Njab JE, Ekanem EE, Dike PN, Oguh DN. Facilitators and barriers to retention in HIV care among HIV infected MSM attending Community Health Center Yaba, Lagos Nigeria. Journal of Pharmaceutical Research International. 2021;33(52B):10-19.
19. Obeagu EI, Ogbonna US, Nwachukwu AC, Ochiabuto O, Enweani IB, Ezeoru VC. Prevalence of Malaria with Anaemia and HIV status in women of reproductive age in Onitsha, Nigeria. Journal of Pharmaceutical Research International. 2021;33(4):10-19.
20. Odo M, Ochei KC, Obeagu EI, Barinaadaa A, Eteng UE, Ikpeme M, Bassey JO, Paul AO. TB Infection Control in TB/HIV Settings in Cross River State, Nigeria: Policy Vs Practice. Journal of Pharmaceutical Research International. 2020;32(22):101-119.
21. Obeagu EI, Eze VU, Alaeboh EA, Ochei KC. Determination of haematocrit level and iron profile study among persons living with HIV in Umuahia, Abia State, Nigeria. J BioInnovation. 2016; 5:464-471. links/592bb4990f7e9b9979a975cf/DETERMINATION-OF-HAEMATOCRIT-LEVEL-AND-IRON-PROFILE-STUDY-AMONG-PERSONS-LIVING-WITH-HIV-IN-UMUAHIA-ABIA-STATE-NIGERIA.pdf.
22. Ifeanyi OE, Obeagu GU. The values of prothrombin time among HIV positive patients in FMC owerri. International Journal of Current Microbiology and Applied Sciences. 2015;4(4):911-916. https://www.academia.edu/download/38320140/Obeagu_Emmanuel_Ifeanyi_and_Obeagu__Getrude_Uzoma2.EMMA1.pdf.
23. Izuchukwu IF, Ozims SJ, Agu GC, Obeagu EI, Onu I, Amah H, Nwosu DC, Nwanjo HU, Edward A, Arunsi MO. Knowledge of preventive measures and management of HIV/AIDS

victims among parents in Umuna Orlu community of Imo state Nigeria. Int. J. Adv. Res. Biol. Sci. 2016;3(10): 55-65.DOI; 10.22192/ijarbs.2016.03.10.009

24. Chinedu K, Takim AE, Obeagu EI, Chinazor UD, Eloghosa O, Ojong OE, Odunze U. HIV and TB co-infection among patients who used Directly Observed Treatment Short-course centres in Yenagoa, Nigeria. IOSR J Pharm Biol Sci. 2017;12(4):70-75. links/5988ab6d0f7e9b6c8539f73d/HIV-and-TB-co-infection-among-patients-who-used-Directly-Observed-Treatment-Short-course-centres-in-Yenagoa-Nigeria.pdf
25. Oloro OH, Oke TO, Obeagu EI. Evaluation of Coagulation Profile Patients with Pulmonary Tuberculosis and Human Immunodeficiency Virus in Owo, Ondo State, Nigeria. Madonna University journal of Medicine and Health Sciences. 2022;2(3):110-119.
26. Nwosu DC, Obeagu EI, Nkwocha BC, Nwanna CA, Nwanjo HU, Amadike JN, Elendu HN, Ofoedeme CN, Ozims SJ, Nwankpa P. Change in Lipid Peroxidation Marker (MDA) and Non enzymatic Antioxidants (VIT C & E) in HIV Seropositive Children in an Urban Community of Abia State. Nigeria. J. Bio. Innov. 2016;5(1):24-30. links/5ae735e9a6fdcc5b33eb8d6a/CHANGE-IN-LIPID-PEROXIDATION-MARKER-MDAAND-NON-ENZYMATIC-ANTIOXIDANTS-VIT-C-E-IN-HIV-SEROPOSITIVE-CHILDREN-IN-AN-URBAN-COMMUNITY-OF-ABIA-STATE-NIGERIA.pdf.
27. Igwe CM, Obeagu IE, Ogbuabor OA. Clinical characteristics of people living with HIV/AIDS on ART in 2014 at tertiary health institutions in Enugu, Nigeria. J Pub Health Nutri. 2022; 5 (6). 2022;130. links/645a166f5762c95ac3817d32/Clinical-characteristics-of-people-living-with-HIV-AIDS-on-ART-in-2014-at-tertiary-health-institutions-in-Enugu.pdf.
28. Ifeanyi OE, Obeagu GU, Ijeoma FO, Chioma UI. The values of activated partial thromboplastin time (APTT) among HIV positive patients in FMC Owerri. Int J Curr Res Aca Rev. 2015; 3:139-144. https://www.academia.edu/download/38320159/Obeagu_Emmanuel_Ifeanyi3__et_al.IJCRAR.pdf.
29. Obiomah CF, Obeagu EI, Ochei KC, Swem CA, Amachukwu BO. Hematological indices o HIV seropositive subjects in Nnamdi Azikiwe University teaching hospital (NAUTH), Nnewi. Ann Clin Lab Res. 2018;6(1):1-4. links/5aa2bb17a6fdccd544b7526e/Haematological-Indices-of-HIV-Seropositive-Subjects-at-Nnamdi-Azikiwe.pdf
30. Omo-Emmanuel UK, Ochei KC, Osuala EO, Obeagu EI, Onwuasoanya UF. Impact of prevention of mother to child transmission (PMTCT) of HIV on positivity rate in Kafanchan, Nigeria. Int. J. Curr. Res. Med. Sci. 2017;3(2): 28-34.DOI: 10.22192/ijcrms.2017.03.02.005
31. Aizaz M, Abbas FA, Abbas A, Tabassum S, Obeagu EI. Alarming rise in HIV cases in Pakistan: Challenges and future recommendations at hand. Health Science Reports. 2023;6(8):e1450.
32. Obeagu EI, Amekpor F, Scott GY. An update of human immunodeficiency virus infection: Bleeding disorders. J Pub Health Nutri. 2023; 6 (1). 2023;139.

links/645b4a6c2edb8e5f094d9bd9/An-update-of-human-immunodeficiency-virus-infection-Bleeding.pdf.

33. Obeagu EI, Scott GY, Amekpor F, Ofodile AC, Edoho SH, Ahamefula C. Prevention of New Cases of Human Immunodeficiency Virus: Pragmatic Approaches of Saving Life in Developing Countries. Madonna University journal of Medicine and Health Sciences. 2022;2(3):128-134. https://madonnauniversity.edu.ng/journals/index.php/medicine/article/view/86.
34. Obeagu EI, Babar Q, Obeagu GU. Allergic blood Transfusion reaction: A Review. Int. J. Curr. Res. Med. Sci. 2021;7(5):25-33.
35. Obeagu EI, Ubosi NI, Uzoma G. Maternal Hemorrhage and Blood Transfusions: Safeguarding Pregnancy Health. Int. J. Curr. Res. Chem. Pharm. Sci. 2023;10(11):26-35.
36. Obeagu EI, Obeagu GU. Transfusion-Related Complications in Children Under 5 with Coexisting HIV and Severe Malaria: A Review. Int. J. Curr. Res. Chem. Pharm. Sci. 2024;11(2):9-19.
37. ObeaguEI AA, Obeagu GU. Synergistic Effects of Blood Transfusion and HIV in Children Under 5 Years with Severe Malaria: A Review. Elite Journal of HIV. 2024;2(1):31-50.
38. Obeagu EI, Anyiam AF, Obeagu GU. Managing Anemia in HIV through Blood Transfusions: Clinical Considerations and Innovations. Elite Journal of HIV. 2024;2(1):16-30.
39. Obeagu EI, Obeagu GU. Transfusion Therapy in HIV: Risk Mitigation and Benefits for Improved Patient Outcomes. Sciences. 2024;4(1):32-37.
40. Walter O, Anaebo QB, Obeagu EI, Okoroiwu IL. Evaluation of Activated Partial Thromboplastin Time and Prothrombin Time in HIV and TB Patients in Owerri Metropolis. Journal of Pharmaceutical Research International. 2022:29-34.
41. Odo M, Ochei KC, Obeagu EI, Barinaadaa A, Eteng EU, Ikpeme M, Bassey JO, Paul AO. Cascade variabilities in TB case finding among people living with HIV and the use of IPT: assessment in three levels of care in cross River State, Nigeria. Journal of Pharmaceutical Research International. 2020;32(24):9-18.
42. Jakheng SP, Obeagu EI. Seroprevalence of human immunodeficiency virus based on demographic and risk factors among pregnant women attending clinics in Zaria Metropolis, Nigeria. J Pub Health Nutri. 2022; 5 (8). 2022;137. links/6317a6b1acd814437f0ad268/Seroprevalence-of-human-immunodeficiency-virus-based-on-demographic-and-risk-factors-among-pregnant-women-attending-clinics-in-Zaria-Metropolis-Nigeria.pdf.
43. Obeagu EI, Obeagu GU. A Review of knowledge, attitudes and socio-demographic factors associated with non-adherence to antiretroviral therapy among people living with HIV/AIDS. Int. J. Adv. Res. Biol. Sci. 2023;10(9):135-142.DOI: 10.22192/ijarbs.2023.10.09.015 links/6516faa61e2386049de5e828/A-Review-of-knowledge-attitudes-and-socio-demographic-factors-associated-with-non-adherence-to-antiretroviral-therapy-among-people-living-with-HIV-AIDS.pdf
44. Obeagu EI, Onuoha EC. Tuberculosis among HIV Patients: A review of Prevalence and Associated Factors. Int. J. Adv. Res. Biol. Sci. 2023;10(9):128-134.DOI:

10.22192/ijarbs.2023.10.09.014 links/6516f938b0df2f20a2f8b0e0/Tuberculosis-among-HIV-Patients-A-review-of-Prevalence-and-Associated-Factors.pdf.

45. Obeagu EI, Ibeh NC, Nwobodo HA, Ochei KC, Iwegbulam CP. Haematological indices of malaria patients coinfected with HIV in Umuahia. Int. J. Curr. Res. Med. Sci. 2017;3(5):100-104.DOI: 10.22192/ijcrms.2017.03.05.014 https://www.academia.edu/download/54317126/Haematological_indices_of_malaria_patients_coinfected_with_HIV.pdf
46. Jakheng SP, Obeagu EI, Abdullahi IO, Jakheng EW, Chukwueze CM, Eze GC, Essien UC, Madekwe CC, Madekwe CC, Vidya S, Kumar S. Distribution Rate of Chlamydial Infection According to Demographic Factors among Pregnant Women Attending Clinics in Zaria Metropolis, Kaduna State, Nigeria. South Asian Journal of Research in Microbiology. 2022;13(2):26-31.
47. Viola N, Kimono E, Nuruh N, Obeagu EI. Factors Hindering Elimination of Mother to Child Transmission of HIV Service Uptake among HIV Positive Women at Comboni Hospital Kyamuhunga Bushenyi District. Asian Journal of Dental and Health Sciences. 2023;3(2):7-14. http://ajdhs.com/index.php/journal/article/view/39.
48. Okorie HM, Obeagu Emmanuel I, Okpoli Henry CH, Chukwu Stella N. Comparative study of enzyme linked immunosorbent assay (Elisa) and rapid test screening methods on HIV, Hbsag, Hcv and Syphilis among voluntary donors in. Owerri, Nigeria. J Clin Commun Med. 2020;2(3):180-183.DOI: **DOI:** 10.32474/JCCM.2020.02.000137 links/5f344530458515b7291bd95f/Comparative-Study-of-Enzyme-Linked-Immunosorbent-Assay-ElISA-and-Rapid-Test-Screening-Methods-on-HIV-HBsAg-HCV-and-Syphilis-among-Voluntary-Donors-in-Owerri-Nigeria.pdf.
49. Ezugwu UM, Onyenekwe CC, Ukibe NR, Ahaneku JE, Onah CE, Obeagu EI, Emeje PI, Awalu JC, Igbokwe GE. Use of ATP, GTP, ADP and AMP as an Index of Energy Utilization and Storage in HIV Infected Individuals at NAUTH, Nigeria: A Longitudinal, Prospective, Case-Controlled Study. Journal of Pharmaceutical Research International. 2021;33(47A):78-84.
50. Zimring JC, Hudson KE. Cellular immune responses in red blood cell alloimmunization. Hematology 2014, the American Society of Hematology Education Program Book. 2016;2016(1):452-456.
51. Obeagu EI, Obeagu GU, Obiezu J, Ezeonwumelu C, Ogunnaya FU, Ngwoke AO, Ugwu OP. Immunomodulatory Effects of Transfusions on Maternal Immunity in Pregnancy. Applied Sciences (NIJBAS). 2023;3(3).
52. Obeagu EI, Babar Q, Uduchi IO, Ibekwe AM, Chijioke UO, Okafor CJ, Vincent CC. An Update on Transfusion Related Immunomodulation (TRIM) in a Time of COVID-19 Pandemic. Journal of Pharmaceutical Research International. 2021 Aug 27;33(42A):135-146.
53. Okoroiwu IL, Obeagu EI, Elemchukwu Q, Ochei KC, Christian GS. Frequency of Transfusion Reactions Following Compatible Cross Matching of Blood: A Study in Owerri Metropolis. International Journal of Current Research and Academic Review. 2015;3(1):155-160.

Citation: Obeagu EI, Anyanwu CN, Obeagu GU. Challenges and Considerations in Managing Blood Transfusion for Individuals with HIV. Elite Journal of HIV, 2024; 2(2): 16-32

54. Obeagu EI, Oshim IO, Ochei KC, Obeagu GU. Iron and blood donation: A Review. Int. J. Curr. Res. Med. Sci. 2016;2(10):16-48.
55. Ogar CO, Okoroiwu HU, Obeagu EI, Etura JE, Abunimye DA. Assessment of blood supply and usage pre-and during COVID-19 pandemic: a lesson from non-voluntary donation. Transfusion Clinique et Biologique. 2021;28(1):68-72.
56. Anyiam AF, Arinze-Anyiam OC, Irondi EA, Obeagu EI. Distribution of ABO and rhesus blood grouping with HIV infection among blood donors in Ekiti State Nigeria. Medicine. 2023;102(47): e36342.
57. Belizaire R, Mack J, Kadauke S, Kim Y, Saidman S, Makar RS. Red blood cell alloantibodies are associated with increased alloimmunization against human leukocyte antigens. Transfusion. 2019;59(7):2256-2263.
58. Obeagu EI. Blood Transfusion: A Powerful Process of Saving Anaemic Patients. EC Emergency Medicine and Critical Care. 2020;4(7):33-40.
59. Obeagu EI, Buhari HA. Implications of Blood Transfusion in Renal Disease Patients. Int. J. Curr. Res. Chem. Pharm. Sci. 2023;10(10):45-49.
60. Anyiam AF, Arinze-Anyiam OC, Omosigho PO, Ibrahim M, Irondi EA, Obeagu EI, Obi E. Blood Group, Genotype, Malaria, Blood Pressure and Blood Glucose Screening Among Selected Adults of a Community in Kwara State: Implications to Public Health. Asian Hematology Research Journal. 2022;6(3):9-17.
61. Obeagu EI, Obeagu GU, Ukibe NR, Oyebadejo SA. Anemia, iron, and HIV: decoding the interconnected pathways: A review. Medicine. 2024;103(2): e36937.
62. Obeagu EI. An update on susceptibility of individuals to diseases based on ABO blood groups. Int. J. Curr. Res. Med. Sci. 2019;5(3):1-8.
63. Coovadia H, Jewkes R, Barron P, Sanders D, McIntyre D. The health and health system of South Africa: historical roots of current public health challenges. The lancet. 2009;374(9692):817-834.
64. Eze R, Obeagu EI, Nwakulite A, Vincent CC, Ogbodo SO, Ibekwe AM, Okafor CJ, Chukwurah EF. Frequency of Haemoglobin Genotype Variants, ABO and Rh 'D'Antigen among Madonna Undergraduates of South East Origin, Nigeria. Journal of Pharmaceutical Research International. 2021 May 26;33(29B):149-157.
65. Okoroiwu IL, Obeagu EI, Christian SG, Elemchukwu Q, Ochei KC. Determination of the haemoglobin, genotype and ABO blood group pattern of some students of Imo State University, Owerri, Nigeria. International Journal of Current Research and Academic Review. 2015;3(1):20-27.
66. Oloro OH, Obeagu EI, Puche RO, Lawal OA. Blood Products in Blood Banking: Preparation and Clinical Importance. Madonna University journal of Medicine and Health Sciences ISSN: 2814-3035. 2022;2(3):102-109.
67. Asemota EA, Njar VE, Aguanah IT, Obeagu EI. Distribution of ABO, Rhesus Blood Group and Helicobacter Pylori Infection among Secondary School Students in Calabar South Local Government, Cross River State, Nigeria. Madonna University journal of Medicine and Health Sciences ISSN: 2814-3035. 2023;3(1):32-45.

Citation: Obeagu EI, Anyanwu CN, Obeagu GU. Challenges and Considerations in Managing Blood Transfusion for Individuals with HIV. Elite Journal of HIV, 2024; 2(2): 16-32

68. Obeagu EI, Katya MC. A Systematic Review on Physiological Jaundice: Diagnosis and Management of the Affected Neonates. Madonna University journal of Medicine and Health Sciences. 2022;2(3):25-41.
69. Mohammed AD, Ntambwe P, Crawford AM. Barriers to effective transfusion practices in Limited-Resource settings: from infrastructure to cultural beliefs. World Journal of Surgery. 2020; 44:2094-2099.
70. Emannuel G, Martin O, Peter OS, Obeagu EI, Daniel K. Factors Influencing Early Neonatal Adverse Outcomes among Women with HIV with Post Dated Pregnancies Delivering at Kampala International University Teaching Hospital, Uganda. Asian Journal of Pregnancy and Childbirth. 2023 Jul 29;6(1):203-211. http://research.sdpublishers.net/id/eprint/2819/.
71. Igwe MC, Obeagu EI, Ogbuabor AO, Eze GC, Ikpenwa JN, Eze-Steven PE. Socio-Demographic Variables of People Living with HIV/AIDS Initiated on ART in 2014 at Tertiary Health Institution in Enugu State. Asian Journal of Research in Infectious Diseases. 2022;10(4):1-7.
72. Vincent CC, Obeagu EI, Agu IS, Ukeagu NC, Onyekachi-Chigbu AC. Adherence to Antiretroviral Therapy among HIV/AIDS in Federal Medical Centre, Owerri. Journal of Pharmaceutical Research International. 2021;33(57A):360-368.
73. Igwe MC, Obeagu EI, Ogbuabor AO. ANALYSIS OF THE FACTORS AND PREDICTORS OF ADHERENCE TO HEALTHCARE OF PEOPLE LIVING WITH HIV/AIDS IN TERTIARY HEALTH INSTITUTIONS IN ENUGU STATE. Madonna University journal of Medicine and Health Sciences. 2022;2(3):42-57. https://madonnauniversity.edu.ng/journals/index.php/medicine/article/view/75.
74. Madekwe CC, Madekwe CC, Obeagu EI. Inequality of monitoring in Human Immunodeficiency Virus, Tuberculosis and Malaria: A Review. Madonna University journal of Medicine and Health Sciences. 2022;2(3):6-15. https://madonnauniversity.edu.ng/journals/index.php/medicine/article/view/69
75. Echendu GE, Vincent CC, Ibebuike J, Asodike M, Naze N, Chinedu EP, Ohale B, Obeagu EI. WEIGHTS OF INFANTS BORN TO HIV INFECTED MOTHERS: A PROSPECTIVE COHORT STUDY IN FEDERAL MEDICAL CENTRE, OWERRI, IMO STATE. European Journal of Pharmaceutical and Medical Research, 2023; 10(8): 564-568
76. Nwosu DC, Nwanjo HU, Okolie NJ, Ikeh K, Ajero CM, Dike J, Ojiegbe GC, Oze GO, Obeagu EI, Nnatunanya I, Azuonwu O. BIOCHEMICAL ALTERATIONS IN ADULT HIV PATIENTS ON ANTIRETRQVIRAL THERAPY. World Journal of Pharmacy and Pharmaceutical Sciences, 2015; 4(3): 153-160**.** links/5a4fd0500f7e9bbc10526b38/BIOCHEMICAL-ALTERATIONS-IN-ADULT-HIV-PATIENTS-ON-ANTIRETRQVIRAL-THERAPY.pdf.
77. Obeagu EI, Obeagu GU. Effect of CD4 Counts on Coagulation Parameters among HIV Positive Patients in Federal Medical Centre, Owerri, Nigeria. Int. J. Curr. Res. Biosci. Plant Biol. 2015;2(4):45-49.
78. Obeagu EI, Nwosu DC. Adverse drug reactions in HIV/AIDS patients on highly active antiretro viral therapy: a review of prevalence. Int. J. Curr. Res. Chem. Pharm. Sci. 2019;6(12):45-8.DOI: 10.22192/ijcrcps.2019.06.12.004

Citation: Obeagu EI, Anyanwu CN, Obeagu GU. Challenges and Considerations in Managing Blood Transfusion for Individuals with HIV. Elite Journal of HIV, 2024; 2(2): 16-32

links/650aba1582f01628f0335795/Adverse-drug-reactions-in-HIV-AIDS-patients-on-highly-active-antiretro-viral-therapy-a-review-of-prevalence.pdf.

79. Obeagu EI, Scott GY, Amekpor F, Obeagu GU. Implications of CD4/CD8 ratios in Human Immunodeficiency Virus infections. Int. J. Curr. Res. Med. Sci. 2023;9(2):6-13.DOI: 10.22192/ijcrms.2023.09.02.002 links/645a4a462edb8e5f094ad37c/Implications-of-CD4-CD8-ratios-in-Human-Immunodeficiency-Virus-infections.pdf.
80. Obeagu EI, Ochei KC, Okeke EI, Anode AC. Assessment of the level of haemoglobin and erythropoietin in persons living with HIV in Umuahia. Int. J. Curr. Res. Med. Sci. 2016;2(4):29-33. links/5711c47508aeebe07c02496b/Assessment-of-the-level-of-haemoglobin-and-erythropoietin-in-persons-living-with-HIV-in-Umuahia.pdf.
81. Ifeanyi OE, Obeagu GU. The Values of CD4 Count, among HIV Positive Patients in FMC Owerri. Int. J. Curr. Microbiol. App. Sci. 2015;4(4):906-910. https://www.academia.edu/download/38320134/Obeagu_Emmanuel_Ifeanyi_and_Obeagu__Getrude_Uzoma.EMMA2.pdf.
82. Obeagu EI, Okeke EI, Anonde Andrew C. Evaluation of haemoglobin and iron profile study among persons living with HIV in Umuahia, Abia state, Nigeria. Int. J. Curr. Res. Biol. Med. 2016;1(2):1-5.
83. Alum EU, Ugwu OP, Obeagu EI, Okon MB. Curtailing HIV/AIDS Spread: Impact of Religious Leaders. Newport International Journal of Research in Medical Sciences (NIJRMS). 2023;3(2):28-31.
84. Obeagu EI, Obeagu GU, Paul-Chima UO. Stigma Associated With HIV. AIDS: A Review. Newport International Journal of Public Health and Pharmacy (NIJPP). 2023;3(2):64-67.
85. Alum EU, Obeagu EI, Ugwu OP, Aja PM, Okon MB. HIV Infection and Cardiovascular diseases: The obnoxious Duos. Newport International Journal of Research in Medical Sciences (NIJRMS). 2023;3(2):95-99.
86. Ibebuike JE, Nwokike GI, Nwosu DC, Obeagu EI. A Retrospective Study on Human Immune Deficiency Virus among Pregnant Women Attending Antenatal Clinic in Imo State University Teaching Hospital. *International Journal of Medical Science and Dental Research,* 2018; 1 (2):08-14. https://www.ijmsdr.org/published%20paper/li1i2/A%20Retrospective%20Study%20on%20Human%20Immune%20Deficiency%20Virus%20among%20Pregnant%20Women%20Attending%20Antenatal%20Clinic%20in%20Imo%20State%20University%20Teaching%20Hospital.pdf.
87. Obeagu EI, Obarezi TN, Omeh YN, Okoro NK, Eze OB. Assessment of some haematological and biochemical parametrs in HIV patients before receiving treatment in Aba, Abia State, Nigeria. Res J Pharma Biol Chem Sci. 2014; 5:825-830.
88. Obeagu EI, Obarezi TN, Ogbuabor BN, Anaebo QB, Eze GC. Pattern of total white blood cell and differential count values in HIV positive patients receiving treatment in Federal Teaching Hospital Abakaliki, Ebonyi State, Nigeria. International Journal of Life Science, Biotechnology and Pharama Research. 2014; 391:186-189.
89. Obeagu EI. A Review of Challenges and Coping Strategies Faced by HIV/AIDS Discordant Couples. Madonna University journal of Medicine and Health Sciences. 2023; 3 (1): 7-12.

Citation: Obeagu EI, Anyanwu CN, Obeagu GU. Challenges and Considerations in Managing Blood Transfusion for Individuals with HIV. Elite Journal of HIV, 2024; 2(2): 16-32

90. Oloro OH, Obeagu EI. A Systematic Review on Some Coagulation Profile in HIV Infection. International Journal of Innovative and Applied Research. 2022;10(5):1-11.
91. Nwosu DC, Obeagu EI, Nkwuocha BC, Nwanna CA, Nwanjo HU, Amadike JN, Ezemma MC, Okpomeshine EA, Ozims SJ, Agu GC. Alterations in superoxide dismutiase, vitamins C and E in HIV infected children in Umuahia, Abia state. International Journal of Advanced Research in Biological Sciences. 2015;2(11):268-271.
92. Obeagu EI, Malot S, Obeagu GU, Ugwu OP. HIV resistance in patients with Sickle Cell Anaemia. Newport International Journal of Scientific and Experimental Sciences (NIJSES). 2023;3(2):56-59.
93. Ifeanyi OE, Uzoma OG, Stella EI, Chinedum OK, Abum SC. Vitamin D and insulin resistance in HIV sero positive individuals in Umudike. Int. J. Curr. Res. Med. Sci. 2018;4(2):104-108.
94. Ifeanyi OE, Leticia OI, Nwosu D, Chinedum OK. A Review on blood borne viral infections: universal precautions. Int. J. Adv. Res. Biol. Sci. 2018;5(6):60-66.
95. Nwovu AI, Ifeanyi OE, Uzoma OG, Nwebonyi NS. Occurrence of Some Blood Borne Viral Infection and Adherence to Universal Precautions among Laboratory Staff in Federal Teaching Hospital Abakaliki Ebonyi State. Arch Blood Transfus Disord. 2018;1(2).
96. Chinedu K, Takim AE, Obeagu EI, Chinazor UD, Eloghosa O, Ojong OE, Odunze U. HIV and TB co-infection among patients who used Directly Observed Treatment Short-course centres in Yenagoa, Nigeria. IOSR J Pharm Biol Sci. 2017;12(4):70-75.
97. Offie DC, Obeagu EI, Akueshi C, Njab JE, Ekanem EE, Dike PN, Oguh DN. Facilitators and barriers to retention in HIV care among HIV infected MSM attending Community Health Center Yaba, Lagos Nigeria. Journal of Pharmaceutical Research International. 2021;33(52B):10-19.
98. Brand A. Immunological complications of blood transfusions. La Presse Médicale. 2016;45(7-8): e313-324.
99. Roubinian NH, Murphy EL. Transfusion-associated circulatory overload (TACO): prevention, management, and patient outcomes. International Journal of Clinical Transfusion Medicine. 2015:17-28.
100. New HV, Berryman J, Bolton-Maggs PH, Cantwell C, Chalmers EA, Davies T, Gottstein R, Kelleher A, Kumar S, Morley SL, Stanworth SJ. Guidelines on transfusion for fetuses, neonates and older children. British journal of haematology. 2016175(5):784-828.
101. Lavoie J. Blood transfusion risks and alternative strategies in pediatric patients. Pediatric Anesthesia. 2011;21(1):14-24.
102. Obeagu EI, Obeagu GU, Ede MO, Odo EO, Buhari HA. Translation of HIV/AIDS knowledge into behavior change among secondary school adolescents in Uganda: A review. Medicine (Baltimore). 2023;102(49): e36599. doi: 10.1097/MD.0000000000036599. PMID: 38065920; PMCID: PMC10713174.
103. Anyiam AF, Arinze-Anyiam OC, Irondi EA, Obeagu EI. Distribution of ABO and rhesus blood grouping with HIV infection among blood donors in Ekiti State Nigeria. Medicine (Baltimore). 2023;102(47): e36342. doi: 10.1097/MD.0000000000036342. PMID: 38013335; PMCID: PMC10681551.

Citation: Obeagu EI, Anyanwu CN, Obeagu GU. Challenges and Considerations in Managing Blood Transfusion for Individuals with HIV. Elite Journal of HIV, 2024; 2(2): 16-32

104. Echefu SN, Udosen JE, Akwiwu EC, Akpotuzor JO, Obeagu EI. Effect of Dolutegravir regimen against other regimens on some hematological parameters, CD4 count and viral load of people living with HIV infection in South Eastern Nigeria. Medicine (Baltimore). 2023;102(47): e35910. doi: 10.1097/MD.0000000000035910. PMID: 38013350; PMCID: PMC10681510.
105. Opeyemi AA, Obeagu EI. Regulations of malaria in children with human immunodeficiency virus infection: A review. Medicine (Baltimore). 2023;102(46): e36166. doi: 10.1097/MD.0000000000036166. PMID: 37986340; PMCID: PMC10659731.
106. Alum EU, Obeagu EI, Ugwu OPC, Samson AO, Adepoju AO, Amusa MO. Inclusion of nutritional counseling and mental health services in HIV/AIDS management: A paradigm shift. Medicine (Baltimore). 2023;102(41): e35673. doi: 10.1097/MD.0000000000035673. PMID: 37832059; PMCID: PMC10578718.
107. Aizaz M, Abbas FA, Abbas A, Tabassum S, Obeagu EI. Alarming rise in HIV cases in Pakistan: Challenges and future recommendations at hand. Health Sci Rep. 2023;6(8): e1450. doi: 10.1002/hsr2.1450. PMID: 37520460; PMCID: PMC10375546.
108. Obeagu EI, Obeagu GU, Obiezu J, Ezeonwumelu C, Ogunnaya FU, Ngwoke AO, Emeka-Obi OR, Ugwu OP. Hematologic Support in HIV Patients: Blood Transfusion Strategies and Immunological Considerations. APPLIED SCIENCES (NIJBAS). 2023;3(3).
109. Obeagu EI, Ubosi NI, Uzoma G. Storms and Struggles: Managing HIV Amid Natural Disasters. Int. J. Curr. Res. Chem. Pharm. Sci. 2023;10(11):14-25.
110. Obeagu EI, Obeagu GU. Human Immunodeficiency Virus and tuberculosis infection: A review of prevalence of associated factors. Int. J. Adv. Multidiscip. Res. 2023;10(10):56-62.
111. Obeagu EI, Malot S, Obeagu GU, Ugwu OP. HIV resistance in patients with Sickle Cell Anaemia. Newport International Journal of Scientific and Experimental Sciences (NIJSES). 2023;3(2):56-9.
112. Alum EU, Ugwu OP, Obeagu EI, Aja PM, Okon MB, Uti DE. Reducing HIV Infection Rate in Women: A Catalyst to reducing HIV Infection pervasiveness in Africa. International Journal of Innovative and Applied Research. 2023;11(10):01-6.