



Journal home page: <http://www.journalijar.com>

INTERNATIONAL JOURNAL
OF INNOVATIVE AND APPLIED RESEARCH

REVIEW ARTICLE

Article DOI:10.58538/IJAR/2081

DOI URL: <http://dx.doi.org/10.58538/IJAR/2081>

Current Trends and Challenges in Blood Transfusion for Individuals with HIV

*Emmanuel Ifeanyi Obeagu¹, Chioma Ibe², Getrude Uzoma Obeagu³ and Chinyere Nkemjika Anyanwu⁴

¹Department of Medical Laboratory Science, Kampala International University, Ishaka, Uganda.

²Department of Nursing Science, Faculty of Health Sciences, Imo State University, Owerri

³School of Nursing Science, Kampala International University, Ishaka, Uganda.

⁴Department of Microbiology and Immunology, Kampala International University, Western Campus, Uganda.

Manuscript Info

Manuscript History

Received: 19 January 2024

Final Accepted: 25 February 2024

Published: February 2024

Keywords:

Blood Transfusion, HIV, Antiretroviral Therapy, Personalized Transfusion, Hemovigilance, Blood Screening, Viral Load

Abstract

This review article provides an in-depth exploration of the current trends and challenges associated with blood transfusion practices in individuals living with HIV. As advancements in antiretroviral therapy (ART) have significantly improved the life expectancy of HIV-positive individuals, the landscape of blood transfusion strategies and safety considerations has evolved. The review delves into key trends, including personalized transfusion approaches, hemovigilance systems, and innovations in blood screening technologies. Additionally, it addresses challenges such as potential interactions between blood transfusion and antiretroviral medications, the impact on viral load dynamics, and emerging infectious risks. By synthesizing existing literature, this review aims to provide insights that guide healthcare professionals in optimizing blood transfusion practices for individuals with HIV while addressing the unique challenges posed by this patient population.

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

Introduction:-

Human Immunodeficiency Virus (HIV) has transformed from a once-debilitating condition to a manageable chronic illness, largely owing to the advancements in antiretroviral therapy (ART). As individuals living with HIV now experience increased life expectancy and improved overall health, the landscape of healthcare interventions, including blood transfusion practices, has evolved. This review delves into the current trends and challenges associated with blood transfusion for individuals with HIV, seeking to provide a comprehensive understanding of the dynamic intersection between transfusion medicine and HIV care. The emergence of personalized medicine has significantly influenced blood transfusion practices for individuals with HIV, signaling a departure from traditional one-size-fits-all approaches. Tailoring transfusion strategies based on individualized parameters, such as viral load, CD4 cell counts, and comorbidities, reflects a paradigm shift towards patient-centered care.¹⁻²²

Hemovigilance systems, designed for real-time monitoring of adverse events related to blood transfusions, have become integral in ensuring the safety of transfusions for individuals with HIV. The implementation of these systems allows healthcare providers to promptly identify and address potential risks, contributing to ongoing quality improvement initiatives. This proactive approach to safety fosters an environment where transfusions can be administered with confidence, bolstering the overall healthcare experience for individuals living with HIV. Innovations in blood screening technologies stand at the forefront of efforts to enhance the safety of blood transfusions for individuals with HIV. With a focus on minimizing the risk of transfusion-transmitted infections, this review scrutinizes the latest advancements in screening methods, emphasizing the importance of staying ahead of emerging infectious risks.²³⁻⁴²

The coexistence of blood transfusion and antiretroviral medications introduces a complex interplay that requires careful consideration. Potential interactions between transfused blood components and antiretroviral drugs may impact drug efficacy, absorption, or metabolism, thereby influencing treatment outcomes. This review critically evaluates the existing knowledge on these interactions, shedding light on the delicate balance required to optimize both transfusion outcomes and antiretroviral therapy effectiveness. Recognizing and navigating these interactions are essential for healthcare providers to deliver comprehensive and tailored care to individuals with HIV. Understanding the impact of blood transfusion on viral load dynamics is paramount in managing individuals with HIV effectively. Changes in viral load following transfusion may have implications for disease progression, treatment response, and overall health outcomes. Through an exploration of existing literature, this review aims to elucidate the intricate relationship between blood transfusion and viral load dynamics. Insights gained in this regard can inform evidence-based transfusion strategies, ensuring that individuals with HIV receive optimal care aligned with their unique medical profiles. Despite the positive trends in blood transfusion practices for individuals with HIV, challenges persist and warrant careful consideration.⁴³⁻⁶⁷

Trends in Personalized Transfusion

The evolving field of personalized medicine has influenced blood transfusion strategies for individuals with HIV. Tailoring transfusion approaches based on individual patient

characteristics, such as viral load status, CD4 cell counts, and comorbidities, allows for more precise and effective transfusion interventions. This trend reflects a shift from traditional one-size-fits-all approaches to a nuanced and patient-centered model that considers the unique medical profile of each individual, optimizing the benefits of blood transfusion while minimizing potential risks.⁶⁸⁻⁷⁵

Hemovigilance Systems

The implementation of hemovigilance systems has become integral to ensuring the safety and efficacy of blood transfusions in individuals with HIV. These systems enable real-time monitoring of adverse events related to transfusions, allowing healthcare providers to promptly address and mitigate potential risks. Through continuous surveillance, hemovigilance systems contribute to quality improvement initiatives, fostering a safer transfusion environment for individuals with HIV and reducing the likelihood of transfusion-related complications.⁷⁶⁻⁸⁵

Innovations in Blood Screening

Blood screening is a critical component of transfusion medicine, playing a pivotal role in ensuring the safety and quality of blood products. Over the years, continuous advancements in technology and methodologies have revolutionized blood screening practices, enhancing the ability to detect a wide array of transfusion-transmissible infections and ensuring the integrity of the blood supply. One of the most significant innovations in blood screening is the widespread adoption of Nucleic Acid Testing (NAT). NAT allows for the direct detection of viral nucleic acids, such as RNA or DNA, offering unparalleled sensitivity in identifying infections even during the window period when conventional tests may yield false negatives. This technology has been instrumental in enhancing the safety of blood transfusions by reducing the risk of transmitting blood-borne pathogens, including HIV, hepatitis B and C, and emerging viruses.⁸⁶⁻⁹⁵

Multiplex testing represents a paradigm shift in blood screening by enabling the simultaneous detection of multiple pathogens in a single assay. This innovation streamlines the screening process, providing a comprehensive overview of potential infectious threats in a more efficient and cost-effective manner. Multiplex testing not only enhances the detection of known pathogens but also allows for the identification of emerging infectious agents, addressing the dynamic nature of infectious disease landscapes. Pathogen reduction technologies are designed to inactivate or remove pathogens present in blood components, further bolstering transfusion safety. These technologies, including ultraviolet (UV) light and chemical treatments, target a broad spectrum of pathogens, including bacteria, viruses, and parasites. By mitigating the risk of transfusion-transmitted infections, pathogen reduction technologies contribute to the ongoing efforts to enhance the safety of the blood supply. Next-Generation Sequencing (NGS) has emerged as a powerful tool in blood screening, offering high-throughput sequencing of genetic material. NGS enables the identification of a wide range of pathogens with unprecedented accuracy and resolution. This technology is particularly valuable in detecting new or emerging infectious agents, providing a more comprehensive understanding of the transfusion-transmissible disease landscape.⁹⁶⁻¹⁰²

In addition to molecular techniques, innovations in serological testing have refined the accuracy and efficiency of blood screening. Enhanced serological assays with improved specificity and sensitivity contribute to the detection of antibodies and antigens associated with various infections. These advancements not only ensure the reliability of traditional blood screening methods but also complement molecular techniques for a more comprehensive screening approach. The integration of Point-of-Care Testing (POCT) in blood screening represents a shift towards decentralized and rapid diagnostics. POCT allows for on-site testing, facilitating timely decision-making in diverse healthcare settings, including remote or resource-limited environments. This innovation addresses the need for immediate results, especially in emergency situations, and contributes to the overall efficiency of blood screening processes.¹⁰³ The application of Artificial Intelligence (AI) and Machine Learning (ML) in blood screening is a transformative development. These technologies analyze vast datasets to identify patterns, predict outcomes, and enhance the accuracy of screening results. By learning from historical data, AI and ML algorithms contribute to the continuous improvement of blood screening processes, adapting to evolving infectious disease landscapes and ensuring proactive responses to potential threats.

Interactions between Blood Transfusion and Antiretroviral Medications

The coexistence of blood transfusion and antiretroviral therapy (ART) presents a complex interplay that requires careful consideration in the management of individuals living with HIV. Antiretroviral medications have played a transformative role in extending the life expectancy and improving the overall health of HIV-positive individuals. However, potential interactions between these medications and transfused blood components can impact drug efficacy, absorption, or metabolism, thereby influencing treatment outcomes. Antiretroviral medications are metabolized by specific enzymes in the liver, and some blood components, particularly red blood cells, may contain these enzymes. The potential for drug-drug interactions arises when the enzymes in transfused blood components interact with antiretroviral drugs, leading to altered drug levels and potential therapeutic consequences. Understanding the specific pharmacokinetics of both the antiretroviral medications and blood components is crucial for predicting and managing these interactions effectively. Blood transfusion may influence the absorption of antiretroviral medications, particularly those that are orally administered. Changes in the gastrointestinal tract, such as alterations in pH or the presence of transfused blood components, can affect the absorption rate and bioavailability of these drugs. This interaction emphasizes the importance of considering the timing of blood transfusions in relation to antiretroviral medication administration to ensure optimal drug absorption and therapeutic effectiveness.¹⁰⁴⁻¹¹⁴

The metabolism of antiretroviral medications can be influenced by the presence of transfused blood components. Enzymes responsible for drug metabolism may be present in the transfused blood, potentially impacting the clearance and half-life of antiretroviral drugs. Healthcare providers must be vigilant in monitoring drug levels and adjusting medication regimens accordingly to maintain therapeutic efficacy and prevent potential toxicity. Blood transfusions have been associated with immune system modulation, and antiretroviral medications play a central role in managing HIV by targeting the immune system. The complex interplay between blood transfusion-induced immunomodulation and the immunological effects of antiretroviral drugs raises questions about the potential impact on overall immune function. Understanding

how these factors interact is essential for tailoring treatment strategies to support immune recovery in individuals living with HIV.¹¹⁵⁻¹³⁰

Pediatric patients living with HIV may require blood transfusions for various reasons, such as managing anemia or addressing complications associated with HIV infection. The interactions between blood transfusion and antiretroviral medications in pediatric populations present unique challenges. Dosing adjustments, careful monitoring, and a nuanced understanding of the developmental aspects of drug metabolism and blood transfusion effects are crucial for ensuring optimal outcomes in pediatric patients receiving both treatments. Therapeutic drug monitoring (TDM) is a valuable tool in managing the interactions between blood transfusion and antiretroviral medications. TDM involves regular monitoring of drug levels in the bloodstream to ensure therapeutic efficacy while minimizing the risk of toxicity. Incorporating TDM into the clinical management of individuals receiving both blood transfusions and antiretroviral therapy allows for personalized adjustments in medication regimens, optimizing treatment outcomes and minimizing the potential for adverse effects.¹³¹⁻¹⁴⁰

Impact on Viral Load Dynamics

The management of individuals living with HIV involves a delicate balance between antiretroviral therapy (ART) and various medical interventions, including blood transfusion. Understanding the impact of blood transfusion on viral load dynamics is crucial for optimizing HIV care. Viral load, a key indicator of HIV replication in the bloodstream, is a fundamental metric guiding treatment decisions. Blood transfusion has been associated with transient fluctuations in viral load among individuals living with HIV. Understanding the patterns and determinants of these fluctuations is essential for interpreting viral load results accurately. Factors such as the timing of blood transfusion in relation to viral load measurements and the immune response to transfused blood components contribute to the complexity of viral load dynamics in this context. Blood transfusion is known to exert immunomodulatory effects, influencing the recipient's immune system. The impact of these immunomodulatory effects on viral load dynamics is multifaceted. While transfusions may lead to short-term increases in viral load due to immune activation, they can also contribute to long-term immune recovery, influencing the overall trajectory of viral replication in the absence of active infection.¹⁴¹⁻¹⁴³

The timing and frequency of blood transfusion play a significant role in shaping viral load dynamics. Studies have suggested that viral load may increase shortly after a blood transfusion, particularly if the transfusion occurs during a period of active HIV replication. Conversely, the long-term effects of transfusion on viral load may be influenced by factors such as the patient's baseline immune status, ART adherence, and the presence of co-infections. The impact of blood transfusion on viral load dynamics is intricately linked with ART adherence. Individuals receiving blood transfusions while adhering to their ART regimens may experience more stable viral load levels compared to those with suboptimal adherence. Consistent adherence to ART is crucial for suppressing viral replication and minimizing the risk of transfusion-related disruptions to viral load control. Understanding the interplay between blood transfusion and viral load dynamics is paramount for making informed treatment decisions in HIV management. Transient increases in viral load following blood transfusion should be interpreted in the context of the patient's overall clinical status and adherence to ART. Healthcare providers must carefully

consider these dynamics when assessing treatment responses, especially in individuals with detectable viral loads shortly after a blood transfusion. Regular monitoring of viral load and clinical parameters is essential in individuals receiving both blood transfusions and antiretroviral therapy. This monitoring enables healthcare providers to identify trends, assess treatment responses, and make informed decisions regarding potential adjustments to ART regimens. An individualized approach, considering the unique characteristics of each patient, is crucial for optimizing treatment strategies and maintaining viral suppression.¹⁴⁴⁻¹⁴⁶

Conclusion

In conclusion, this review provides a comprehensive examination of the current trends and challenges in blood transfusion practices for individuals with HIV. The integration of personalized transfusion approaches, hemovigilance systems, and innovative blood screening technologies reflects a commitment to enhancing the safety and efficacy of transfusions in this population. The intricate interactions between blood transfusion and antiretroviral medications, coupled with considerations of viral load dynamics, highlight the need for a multidisciplinary approach to optimize transfusion outcomes. Acknowledging and addressing challenges, such as transfusion-related immunomodulation and disparities in access, is crucial for advancing the field and ensuring equitable and high-quality care for individuals with HIV requiring blood transfusions.

References

1. Silva L, Pacheco T, Araújo E, Duarte RJ, Ribeiro-Vaz I, Ferreira-da-Silva R. Unveiling the future: precision pharmacovigilance in the era of personalized medicine. *International Journal of Clinical Pharmacy*. 2024;1-6.
2. Hill RA. *Scientists, Healers and Bioprospectors: The Epistemological Politics of Traditional Medicine in Ethiopia, 1930-1998*. Stanford University; 2019.
3. 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).
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.

9. 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>.
10. 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>.
11. 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>.
12. 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.
13. 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](https://doi.org/10.22192/ijcrms.2017.03.01.004)
14. 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](https://doi.org/10.22192/ijcrms.2023.09.02.001)
15. 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>.
16. 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.
17. 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.
18. 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.
19. Obeagu EI, Eze VU, Alaebob 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>.
20. 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_Emanuel_Ifeanyi_and_Obeagu_Getrude_Uzoma2.EMMA1.pdf.
21. 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](https://doi.org/10.22192/ijarbs.2016.03.10.009)
22. 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](https://www.iosronline.org/ViewFullText.aspx?doi=10.21909/IOSRJPB.1704015)
 23. Obeagu EI, Babar Q, Obeagu GU. Allergic blood Transfusion reaction: A Review. *Int. J. Curr. Res. Med. Sci.* 2021;7(5):25-33.
 24. 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.
 25. 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.
 26. 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.
 27. 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.
 28. 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.
 29. Nwosu DC, Obeagu EI, Nkwocha BC, Nwanne 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](https://www.iosronline.org/ViewFullText.aspx?doi=10.21909/IOSRJPB.1601024).
 30. 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](https://www.iosronline.org/ViewFullText.aspx?doi=10.21909/IOSRJPB.2206130).
 31. 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](https://www.academia.edu/download/38320159/Obeagu_Emanuel_Ifeanyi3_et_al_IJCRAR.pdf).
 32. 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](#)
33. 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](#)
34. 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.
35. 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](#).
36. 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>.
37. Walter O, Anaebio 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.
38. 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.
39. 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](#).
40. 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](#)
41. 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](#).
42. Obeagu EI, Ibeh NC, Nwobodo HA, Ochei KC, Iwegbulam CP. Haematological indices of malaria patients coinfecting 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

43. Obeagu EI, Obeagu GU. Transfusion Therapy in HIV: Risk Mitigation and Benefits for Improved Patient Outcomes. *Sciences*. 2024;4(1):32-37.
44. 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).
45. 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.
46. 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.
47. 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.
48. 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.
49. 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>.
50. 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:[10.32474/JCCM.2020.02.000137links/5f344530458515b7291bd95f/Comparative-Study-of-Enzyme-Linked-Immunosorbent-Assay-EIISA-and-Rapid-Test-Screening-Methods-on-HIV-HBsAg-HCV-and-Syphilis-among-Voluntary-Donors-in-Owerri-Nigeria.pdf](https://doi.org/10.32474/JCCM.2020.02.000137links/5f344530458515b7291bd95f/Comparative-Study-of-Enzyme-Linked-Immunosorbent-Assay-EIISA-and-Rapid-Test-Screening-Methods-on-HIV-HBsAg-HCV-and-Syphilis-among-Voluntary-Donors-in-Owerri-Nigeria.pdf).
51. 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.
52. Emmanuel 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/>.
53. Igwe MC, Obeagu EI, Ogbuabor AO, Eze GC, Ikpenwa JN, Eze-Stephen 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.

54. 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.
55. 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>.
56. 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>
57. 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
58. 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 ANTIRETROVIRAL THERAPY. *World Journal of Pharmacy and Pharmaceutical Sciences*, 2015; 4(3): 153-160.
<links/5a4fd0500f7e9bbc10526b38/BIOCHEMICAL-ALTERATIONS-IN-ADULT-HIV-PATIENTS-ON-ANTIRETROVIRAL-THERAPY.pdf>.
59. 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.
60. Obeagu EI, Nwosu DC. Adverse drug reactions in HIV/AIDS patients on highly active antiretroviral therapy: a review of prevalence. *Int. J. Curr. Res. Chem. Pharm. Sci*. 2019;6(12):45-8. DOI: [10.22192/ijcrps.2019.06.12.004](https://doi.org/10.22192/ijcrps.2019.06.12.004)
<links/650aba1582f01628f0335795/Adverse-drug-reactions-in-HIV-AIDS-patients-on-highly-active-antiretro-viral-therapy-a-review-of-prevalence.pdf>.
61. 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](https://doi.org/10.22192/ijcrms.2023.09.02.002)
<links/645a4a462edb8e5f094ad37c/Implications-of-CD4-CD8-ratios-in-Human-Immunodeficiency-Virus-infections.pdf>.
62. 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>.
63. 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_Emanuel_Ifeanyi_and_Obeagu_Getrude_Uzoma.EMMA2.pdf.

64. 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.
65. 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.
66. 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.
67. 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.
68. 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).
69. 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.
70. Alvarez MJ, Hasanzad M, Meybodi HR, Sarhangi N. Precision medicine in infectious disease. In *Precision medicine in clinical practice 2022*: 221-257. Singapore: Springer Nature Singapore.
71. Ibebuikie 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>.
72. Obeagu EI, Obarezi TN, Omeh YN, Okoro NK, Eze OB. Assessment of some haematological and biochemical parameters in HIV patients before receiving treatment in Aba, Abia State, Nigeria. *Res J Pharma Biol Chem Sci*. 2014; 5:825-830.
73. 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 Pharma Research*. 2014; 391:186-189.
74. 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.
75. 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.
76. 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.

77. 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.
78. Obeagu EI. Blood Transfusion: A Powerful Process of Saving Anaemic Patients. *EC Emergency Medicine and Critical Care*. 2020;4(7):33-40.
79. Obeagu EI, Buhari HA. Implications of Blood Transfusion in Renal Disease Patients. *Int. J. Curr. Res. Chem. Pharm. Sci*. 2023;10(10):45-49.
80. 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.
81. Nwosu DC, Obeagu EI, Nkwuocha BC, Nwanne CA, Nwanjo HU, Amadike JN, Ezemma MC, Okpomeshine EA, Ozims SJ, Agu GC. Alterations in superoxide dismutase, 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.
82. 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.
83. 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.
84. 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.
85. 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).
86. Obeagu EI, Obeagu GU, Ukibe NR, Oyebadejo SA. Anemia, iron, and HIV: decoding the interconnected pathways: A review. *Medicine*. 2024;103(2): e36937.
87. 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.
88. 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):149-57.
89. 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.
90. 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.
91. 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.

92. 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.
93. 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.00000000000036599. PMID: 38065920; PMCID: PMC10713174.
94. Anyiam AF, Arinze-Anyiam OC, Ironi 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.00000000000036342. PMID: 38013335; PMCID: PMC10681551.
95. 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.00000000000035910. PMID: 38013350; PMCID: PMC10681510.
96. 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.
97. 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.
98. 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.00000000000036166. PMID: 37986340; PMCID: PMC10659731.
99. 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.00000000000035673. PMID: 37832059; PMCID: PMC10578718.
100. 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.
101. 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).
102. 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.
103. St John A, Price CP. Existing and emerging technologies for point-of-care testing. *The Clinical Biochemist Reviews*. 2014;35(3):155.
104. 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.

105. Obeagu EI, Malot S, Obeagu GU, Ugwu OP. HIV resistance in patients with Sick Cell Anaemia. Newport International Journal of Scientific and Experimental Sciences (NIJSES). 2023;3(2):56-9.
106. 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.
107. Obeagu EI, Obeagu GU. Unmasking the Truth: Addressing Stigma in the Fight Against HIV. Elite Journal of Public Health. 2024;2(1):8-22.
108. Obeagu EI, Obeagu GU, Ukibe NR, Oyebadejo SA. Anemia, iron, and HIV: decoding the interconnected pathways: A review. Medicine. 2024 Jan 12;103(2):e36937.
109. Obeagu EI, Obeagu GU, Okwuanaso CB. Optimizing Immune Health in HIV Patients through Nutrition: A Review. Elite Journal of Immunology. 2024;2(1):14-33.
110. Obeagu EI, Obeagu GU. CD8 Dynamics in HIV Infection: A Synoptic Review. Elite Journal of Immunology. 2024;2(1):1-3.
111. Obeagu EI, Obeagu GU. Implications of B Lymphocyte Dysfunction in HIV/AIDS. Elite Journal of Immunology. 2024;2(1):34-46.
112. Obeagu EI, Obeagu GU. Utilization of immunological ratios in HIV: Implications for monitoring and therapeutic strategies. Medicine. 2024 Mar 1;103(9):e37354.
113. Obeagu EI, Obeagu GU. Understanding B Lymphocyte Functions in HIV Infection: Implications for Immune Dysfunction and Therapeutic Strategies. Elite Journal of Medicine. 2024;2(1):35-46.
114. Obeagu EI, Anyiam AF, Obeagu GU. Managing Hematological Complications in HIV: Erythropoietin Considerations. Elite Journal of HIV. 2024;2(1):65-78.
115. Obeagu EI, Obeagu GU, Hauwa BA, Umar AI. Neutrophil Dynamics: Unveiling Their Role in HIV Progression within Malaria Patients. Journal home page: <http://www.journalijar.com>;12(01).
116. Obeagu EI, Anyiam AF, Obeagu GU. Erythropoietin Therapy in HIV-Infected Individuals: A Critical Review. Elite Journal of HIV. 2024;2(1):51-64.
117. Obeagu EI, Obeagu GU. Platelet Distribution Width (PDW) as a Prognostic Marker for Anemia Severity in HIV Patients: A Comprehensive Review. Journal home page: <http://www.journalijar.com>;12(01).
118. Obeagu EI, Obeagu GU. Maternal Influence on Infant Immunological Responses to HIV: A Review. Elite Journal of Laboratory Medicine. 2024;2(1):46-58.
119. 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.
120. Obeagu EI, Obeagu GU. The Crucial Involvement of CD8 in HIV Progression: A Review. Int. J. Curr. Res. Med. Sci. 2024;10(2):15-25.
121. Obeagu EI, Obeagu GU. The Intricate Relationship Between Erythropoietin and HIV-Induced Anemia: Unraveling Pathways for Therapeutic Insights. Int. J. Curr. Res. Chem. Pharm. Sci. 2024;11(2):30-40.
122. 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.

123. Obeagu EI, Anyiam AF, Obeagu GU. Unveiling B Cell Mediated Immunity in HIV Infection: Insights, Challenges, and Potential Therapeutic Avenues. *Elite Journal of HIV*. 2024;2(1):1-5.
124. 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.
125. Obeagu EI, Obeagu GU. Understanding B Lymphocyte Functions in HIV Infection: Implications for Immune Dysfunction and Therapeutic Strategies. *Elite Journal of Medicine*. 2024;2(1):35-46.
126. Obeagu EI, Obeagu GU. Eosinophilic Changes in Placental Tissues of HIV-Positive Pregnant Women: A Review. *Elite Journal of Laboratory Medicine*. 2024;2(1):14-32.
127. 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.
128. Obeagu EI, Obeagu GU. Hematocrit Fluctuations in HIV Patients Co-infected with Malaria Parasites: A Comprehensive Review. *Int. J. Curr. Res. Med. Sci*. 2024;10(1):25-36.
129. Obeagu EI, Anyiam AF, Obeagu GU. Unveiling B Cell Mediated Immunity in HIV Infection: Insights, Challenges, and Potential Therapeutic Avenues. *Elite Journal of HIV*. 2024;2(1):1-5.
130. Obeagu EI, Obeagu GU. Platelet Distribution Width (PDW) as a Prognostic Marker for Anemia Severity in HIV Patients: A Comprehensive Review. *Journal home page: <http://www.journalijar.com>*;12(01).
131. 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.
132. Obeagu EI, Obeagu GU. Eosinophil-Associated Changes in Neonatal Thymic T Regulatory Cell Populations in HIV-Infected Pregnancies. *Elite Journal of Health Science*. 2024;2(1):33-42.
133. 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.
134. Obeagu EI, Obeagu GU, Odo EO, Igwe MC, Ugwu OP, Alum EU, Racheal P. Combatting Stigma: Essential Steps in Halting HIV Spread. *IAA Journal of Applied Sciences*. 2024;11(1):22-9.
135. Obeagu EI, Ubosi NI, Obeagu GU, Akram M. Early Infant Diagnosis: Key to Breaking the Chain of HIV Transmission. *Elite Journal of Public Health*. 2024;2(1):52-61.
136. Obeagu EI, Obeagu GU. Maternal Eosinophilic Responses in HIV-Positive Pregnant Women: Unraveling Immunological Dynamics for Improved Maternal-Fetal Health. *Elite Journal of Immunology*. 2024;2(1):47-64.
137. Obeagu EI, Obeagu GU. The Intricate Relationship Between Erythropoietin and HIV-Induced Anemia: Unraveling Pathways for Therapeutic Insights. *Int. J. Curr. Res. Chem. Pharm. Sci*. 2024;11(2):30-40.

138. Obeagu EI, Obeagu GU. Eosinophilic Changes in Placental Tissues of HIV-Positive Pregnant Women: A Review. *Elite Journal of Laboratory Medicine*. 2024;2(1):14-32.
139. Obeagu EI, Obeagu GU. Transfusion Therapy in HIV: Risk Mitigation and Benefits for Improved Patient Outcomes. *Sciences*. 2024;4(1):32-7.
140. Obeagu EI, Obeagu GU. The Impact of Erythropoietin on Preeclampsia in HIV-Positive Women: A Review. *Elite Journal of Nursing and Health Science*. 2024;2(1):21-31.
141. Obeagu EI, Obeagu GU. Strength in Unity: Building Support Networks for HIV Patients in Uganda. *Elite Journal of Medicine*. 2024;2(1):1-6.
142. Obeagu EI, Obeagu GU. Mental Health and Psychosocial Effects of natural disaster on HIV Patients. *Sciences*. 2024;4(1):38-44.
143. 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.
144. Tassaneetrithep B, Phuphuakrat A, Pasomsub E, Bhukhai K, Wongkumool W, Priengprom T, Khamaikawin W, Chaisavaneeyakorn S, Anurathapan U, Apiwattanakul N, Hongeng S. HIV-1 proviral DNA in purified peripheral blood CD34+ stem and progenitor cells in individuals with long-term HAART; paving the way to HIV gene therapy. *Heliyon*. 2024.
145. Wedderburn CJ, Sevenoaks T, Fouche JP, Phillips NJ, Lawn SD, Stein DJ, Hoare J. Motivation levels and white matter microstructure in children living with HIV. *Scientific Reports*. 2024;14(1):4425.
146. Sachdeva RK, Naidu G, Chauhan P, Kharbanda S, Kaur J, Joseph P, Arora SK, Sharma A. CSF viral escape on HAART: Analysis from single tertiary care centre. *AIDS Research and Human Retroviruses*. 2024:(ja).