

## Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review

\*Emmanuel Ifeanyi Obeagu<sup>1</sup> and Getrude Uzoma Obeagu<sup>2</sup>

<sup>1</sup>Department of Medical Laboratory Science, Kampala International University, Uganda

<sup>3</sup>School of Nursing Science, Kampala International University, Uganda

\*Corresponding authour: Emmanuel Ifeanyi Obeagu, [Department of Medical Laboratory Science, Kampala International University, Uganda, emmanuelobeagu@yahoo.com, ORCID: 0000-0002-4538-0161](#)

### Abstract

Maternal immune factors, including eosinophils, play a pivotal role in shaping neonatal immunity, particularly in the context of HIV-exposed infants. This review explores the impact of maternal eosinophils on neonatal immunity in HIV-exposed infants, focusing on their role in immune modulation, allergy, infection susceptibility, and the implications for breastfeeding practices and public health interventions. Eosinophils, known for their involvement in allergic responses and host defense against parasites, exhibit multifaceted functions during pregnancy, potentially influencing neonatal immune development. While maternal eosinophils may promote tolerance to allergens and enhance host defense against infections in neonates, dysregulation of eosinophil-mediated immune responses could contribute to allergic disorders and increased infection susceptibility. Understanding the dual role of maternal eosinophils in modulating neonatal immune responses has significant implications for breastfeeding practices and public health interventions aimed at optimizing infant health outcomes in HIV-exposed populations. Further research is warranted to elucidate the mechanisms underlying eosinophil-mediated immune modulation in neonates and to develop targeted strategies for promoting infant health and well-being in the context of maternal HIV infection.

**Keywords:** *Maternal Eosinophils, Neonatal Immunity, HIV-Exposed Infants, Immune Development, Immunomodulation, Allergy, Infection, Breastfeeding, Public Health*

### Introduction

**Citation:** Obeagu EI, Obeagu GU. **Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review.** Elite Journal of Immunology, 2024; 2(3): 1-18

Maternal immune factors are known to play a crucial role in the development and modulation of neonatal immunity, a process of paramount importance for infants, especially those born to HIV-infected mothers. Among these factors, eosinophils, a subtype of white blood cells primarily associated with allergic responses and defense against parasites, have garnered increasing attention for their potential impact on neonatal immune function. In the context of HIV-exposed infants, whose immune systems are already under unique pressures due to maternal infection and exposure to antiretroviral therapy (ART), understanding the role of maternal eosinophils in shaping neonatal immunity becomes particularly critical. During pregnancy, maternal eosinophils can traverse the placental barrier and interact with fetal immune cells, influencing the developing neonatal immune system. While the precise mechanisms of this interaction remain incompletely understood, emerging evidence suggests that maternal eosinophils may play a significant role in immune modulation in neonates. This modulation encompasses a spectrum of effects, ranging from promoting tolerance to allergens to enhancing host defense against infections. However, the balance between these protective and potentially harmful effects may vary depending on various factors, including maternal health status, environmental exposures, and breastfeeding practices.<sup>1-32</sup>

The impact of maternal eosinophils on neonatal immunity extends beyond immune modulation to encompass implications for allergic disorders and susceptibility to infections in HIV-exposed infants. Eosinophils have been implicated in the development of allergic sensitization in neonates, potentially contributing to the rising prevalence of allergic diseases observed in early childhood. Conversely, eosinophils may also exert protective effects against infections, particularly parasitic infections, through their effector functions, such as the release of cytotoxic granule proteins and modulation of T cell responses. Breastfeeding, a cornerstone of infant nutrition and immune development, further complicates the relationship between maternal eosinophils and neonatal immunity in HIV-exposed infants. Maternal eosinophils present in breast milk may influence neonatal immune responses to allergens and pathogens encountered during breastfeeding, shaping the infant's immune landscape. Understanding the interplay between maternal eosinophils, breastfeeding practices, and neonatal immunity is essential for optimizing infant health outcomes in HIV-exposed populations and informing public health interventions aimed at reducing the burden of allergic and infectious diseases in this vulnerable population.<sup>33-52</sup>

In this review, we aim to provide a comprehensive overview of the current understanding of the impact of maternal eosinophils on neonatal immunity in HIV-exposed infants. By synthesizing existing literature and highlighting key findings, we seek to elucidate the complex role of maternal eosinophils in shaping neonatal immune responses and to identify potential avenues for future research and clinical interventions aimed at optimizing infant health outcomes in HIV-exposed populations.

## **Maternal Eosinophils and Neonatal Immunity**

Maternal eosinophils, a subset of white blood cells known for their role in allergic responses and defense against parasites, have emerged as significant contributors to neonatal immunity. During

**Citation:** Obeagu EI, Obeagu GU. **Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review.** Elite Journal of Immunology, 2024; 2(3): 1-18

pregnancy, maternal eosinophils can cross the placenta and interact with fetal immune cells, influencing the development and function of the neonatal immune system. While the precise mechanisms of this interaction are still being elucidated, evidence suggests that maternal eosinophils play a crucial role in immune modulation during early life. These eosinophils may promote tolerance to allergens while enhancing host defense against infections, thereby shaping the neonatal immune landscape. The influence of maternal eosinophils on neonatal immunity extends to the risk of allergic disorders and susceptibility to infections in infants, particularly those born to HIV-infected mothers. Studies have suggested that maternal eosinophils may contribute to the development of allergic sensitization in neonates, potentially increasing the risk of allergic diseases later in life. Conversely, eosinophils may also exert protective effects against infections, such as parasitic infections, through their cytotoxic and immunomodulatory functions. Understanding the balance between these protective and potentially harmful effects is essential for optimizing infant health outcomes in HIV-exposed populations.<sup>53-77</sup>

The interplay between maternal eosinophils and neonatal immunity is further complicated by breastfeeding, a critical determinant of infant nutrition and immune development. Maternal eosinophils present in breast milk may influence neonatal immune responses to allergens and pathogens encountered during breastfeeding, shaping the infant's immune system. However, the impact of maternal eosinophils in breast milk on neonatal immunity remains poorly understood and warrants further investigation. Moreover, in the context of maternal HIV infection, the immune landscape of both the mother and the infant is uniquely influenced by the virus and antiretroviral therapy (ART). HIV-exposed infants may face additional challenges to immune development, requiring careful consideration of the role of maternal eosinophils in shaping neonatal immunity. Understanding how maternal eosinophils interact with the HIV virus and ART regimens during pregnancy and breastfeeding is essential for optimizing infant health outcomes in this vulnerable population.<sup>78-92</sup>

### **Impact on Allergy and Infection Susceptibility**

The impact of maternal eosinophils on neonatal immunity extends to the development of allergic disorders and susceptibility to infections in infants, including those born to HIV-infected mothers. Eosinophils have been implicated in the development of allergic sensitization in neonates, potentially contributing to the rising prevalence of allergic diseases observed in early childhood. Maternal eosinophils can influence neonatal immune responses to allergens encountered during pregnancy and breastfeeding, thereby shaping the infant's susceptibility to allergic diseases later in life. Conversely, eosinophils may also exert protective effects against infections, particularly parasitic infections, through their cytotoxic and immunomodulatory functions. By releasing cytotoxic granule proteins and modulating T cell responses, eosinophils contribute to the host defense against parasites, such as helminths. This protective role of eosinophils in combating parasitic infections is of particular significance in regions where such infections are endemic, and neonates may be at risk of vertical transmission from their mothers.<sup>93-111</sup>

**Citation:** Obeagu EI, Obeagu GU. **Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review.** Elite Journal of Immunology, 2024; 2(3): 1-18

However, the balance between the protective and potentially harmful effects of eosinophils on neonatal immunity remains complex and may vary depending on various factors, including maternal health status, environmental exposures, and breastfeeding practices. Dysregulation of eosinophil-mediated immune responses may lead to allergic disorders and increased susceptibility to infections in HIV-exposed infants. Thus, understanding the interplay between maternal eosinophils, allergic sensitization, and infection susceptibility is essential for optimizing infant health outcomes in HIV-exposed populations. Furthermore, the immune landscape of HIV-exposed infants is uniquely influenced by maternal HIV infection and exposure to antiretroviral therapy (ART). HIV-exposed infants may have altered immune responses and increased susceptibility to infections, necessitating careful consideration of the role of maternal eosinophils in shaping neonatal immunity. Understanding how maternal eosinophils interact with the HIV virus and ART regimens during pregnancy and breastfeeding is crucial for developing targeted interventions to mitigate the risk of allergic disorders and infections in this vulnerable population.<sup>112-127</sup>

### **Implications for Breastfeeding Practices and Public Health Interventions**

The role of maternal eosinophils in shaping neonatal immunity has significant implications for breastfeeding practices and public health interventions, particularly in the context of HIV-exposed infants. Breastfeeding is a critical determinant of infant nutrition and immune development, and maternal eosinophils present in breast milk may influence neonatal immune responses to allergens and pathogens encountered during breastfeeding. Understanding the impact of maternal eosinophils on neonatal immunity is essential for informing breastfeeding practices in HIV-exposed populations. While breastfeeding provides numerous health benefits, including passive immunity and protection against infections, the presence of maternal eosinophils in breast milk may influence the risk of allergic sensitization in neonates. Thus, healthcare providers may need to consider factors such as maternal diet, breastfeeding duration, and the presence of allergic diseases in the family when advising HIV-infected mothers on breastfeeding practices.<sup>128-146</sup>

Public health interventions aimed at optimizing infant health outcomes in HIV-exposed populations should also take into account the role of maternal eosinophils in breastfeeding. Strategies for promoting breastfeeding while minimizing the risk of allergic sensitization and infection susceptibility may include providing guidance on maternal nutrition, encouraging exclusive breastfeeding for the first six months of life, and offering support services for HIV-infected mothers to ensure adherence to antiretroviral therapy and optimal infant feeding practices. Moreover, public health interventions aimed at reducing the burden of allergic disorders and infections in HIV-exposed infants may benefit from considering the influence of maternal eosinophils on neonatal immunity. By addressing modifiable risk factors, such as maternal diet and environmental exposures, and promoting breastfeeding practices that support infant immune development, public health programs can help mitigate the impact of allergic diseases and infections in HIV-exposed populations.<sup>147-162</sup>

### **Conclusion**

**Citation:** Obeagu EI, Obeagu GU. **Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review.** Elite Journal of Immunology, 2024; 2(3): 1-18

The impact of maternal eosinophils on neonatal immunity has far-reaching implications for breastfeeding practices and public health interventions, particularly in the context of HIV-exposed infants. Maternal eosinophils, present in breast milk, can influence neonatal immune responses to allergens and pathogens encountered during breastfeeding, thereby shaping the infant's immune landscape. While breastfeeding provides numerous health benefits, including passive immunity and protection against infections, the presence of maternal eosinophils may also influence the risk of allergic sensitization in neonates. Public health interventions aimed at optimizing infant health outcomes in HIV-exposed populations must take into account the role of maternal eosinophils in breastfeeding. Strategies to promote breastfeeding while minimizing the risk of allergic disorders and infections may include providing guidance on maternal nutrition, encouraging exclusive breastfeeding, and offering support services for HIV-infected mothers. By addressing modifiable risk factors and promoting breastfeeding practices that support infant immune development, public health programs can help mitigate the impact of allergic diseases and infections in HIV-exposed populations.

## References

1. Abu-Raya B, Smolen KK, Willems F, Kollmann TR, Marchant A. Transfer of maternal antimicrobial immunity to HIV-exposed uninfected newborns. *Frontiers in immunology*. 2016; 7:218619.
2. Langel SN, Blasi M, Permar SR. Maternal immune protection against infectious diseases. *Cell Host & Microbe*. 2022;30(5):660-674.
3. Amin O, Powers J, Bricker KM, Chahroudi A. Understanding viral and immune interplay during vertical transmission of HIV: implications for cure. *Frontiers in Immunology*. 2021; 12:757400.
4. Muenchhoff M, Prendergast AJ. Immunity to HIV in early life. *Frontiers in immunology*. 2014; 5:105907.
5. Cinicola B, Conti MG, Terrin G, Sgrulletti M, Elfeky R, Carsetti R, Fernandez Salinas A, Piano Mortari E, Brindisi G, De Curtis M, Zicari AM. The protective role of maternal immunization in early life. *Frontiers in Pediatrics*. 2021; 9:638871.
6. Henrick BM, Yao XD, Nasser L, Roozrogousheh A, Rosenthal KL. Breastfeeding behaviors and the innate immune system of human milk: working together to protect infants against inflammation, HIV-1, and other infections. *Frontiers in immunology*. 2017; 8:298144.
7. Kalbermatter C, Fernandez Trigo N, Christensen S, Ganai-Vonarburg SC. Maternal microbiota, early life colonization and breast milk drive immune development in the newborn. *Frontiers in immunology*. 2021; 12:683022.
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*

**Citation:** Obeagu EI, Obeagu GU. **Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review.** *Elite Journal of Immunology*, 2024; 2(3): 1-18

- 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](https://doi.org/10.22192/ijcrms.2023.06.02.001).
  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](https://doi.org/10.22192/ijcrms.2022.05.06.001).
  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](https://doi.org/10.22192/ijcrms.2016.05.04.001).
  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](https://www.academia.edu/download/38320140/Obeagu_Emanuel_Ifeanyi_and_Obeagu_Getrude_Uzoma2.EMMA1.pdf).

**Citation:** Obeagu EI, Obeagu GU. Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review. Elite Journal of Immunology, 2024; 2(3): 1-18



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.iosrjournals.org/ViewArticle.aspx?doi=10.22192/ijarbs.2016.03.10.009)
23. 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.
24. 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](https://www.iosrjournals.org/ViewArticle.aspx?doi=10.22192/ijarbs.2016.03.10.009).
25. 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.iosrjournals.org/ViewArticle.aspx?doi=10.22192/ijarbs.2016.03.10.009).
26. 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\\_Emanuel\\_Ifeanyi3\\_et\\_al.IJC\\_RAR.pdf](https://www.academia.edu/download/38320159/Obeagu_Emanuel_Ifeanyi3_et_al.IJC_RAR.pdf).
27. Obimah 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](https://www.iosrjournals.org/ViewArticle.aspx?doi=10.22192/ijarbs.2016.03.10.009)
28. Obeagu EI, Agreen FC. Anaemia among pregnant women: A review of African pregnant teenagers. *J Pub Health Nutri.* 2023; 6 (1). 2023;138. [links/63da799664fc860638054562/Anaemia-among-pregnant-women-A-review-of-African-pregnant-teenagers.pdf](https://www.iosrjournals.org/ViewArticle.aspx?doi=10.22192/ijarbs.2016.03.10.009).
29. Obeagu EI, Ezimah AC, Obeagu GU. Erythropoietin in the anaemias of pregnancy: a review. *Int J Curr Res Chem Pharm Sci.* 2016;3(3):10-8. [links/5710fae108ae846f4ef05afb/ERYTHROPOIETIN-IN-THE-ANAEMIAS-OF-PREGNANCY-A-REVIEW.pdf](https://www.iosrjournals.org/ViewArticle.aspx?doi=10.22192/ijarbs.2016.03.10.009).

**Citation:** Obeagu EI, Obeagu GU. Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review. *Elite Journal of Immunology*, 2024; 2(3): 1-18

30. Obeagu EI, Adepoju OJ, Okafor CJ, Obeagu GU, Ibekwe AM, Okpala PU, Agu CC. Assessment of Haematological Changes in Pregnant Women of Ido, Ondo State, Nigeria. *J Res Med Dent Sci.* 2021 Apr;9(4):145-8. [links/608a6728a6fdccaebdf52d94/Assessment-of-Haematological-Changes-in-Pregnant-Women-of-Ido-Ondo.pdf](https://epjournals.com/links/608a6728a6fdccaebdf52d94/Assessment-of-Haematological-Changes-in-Pregnant-Women-of-Ido-Ondo.pdf).
31. Obeagu EI, Obeagu GU. Sick Cell Anaemia in Pregnancy: A Review. *International Research in Medical and Health Sciences.* 2023 Jun 10;6(2):10-3. <http://irmhs.com/index.php/irmhs/article/view/111>.
32. 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](https://epjournals.com/links/6317a6b1acd814437f0ad268/Seroprevalence-of-human-immunodeficiency-virus-based-on-demographic-and-risk-factors-among-pregnant-women-attending-clinics-in-Zaria-Metropolis-Nigeria.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](https://doi.org/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](https://epjournals.com/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](https://epjournals.com/links/6317a6b1acd814437f0ad268/Seroprevalence-of-human-immunodeficiency-virus-based-on-demographic-and-risk-factors-among-pregnant-women-attending-clinics-in-Zaria-Metropolis-Nigeria.pdf).

**Citation:** Obeagu EI, Obeagu GU. Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review. *Elite Journal of Immunology*, 2024; 2(3): 1-18



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](https://doi.org/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](https://www.research.sd publishers.net/id/eprint/2819/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](https://doi.org/10.22192/ijarbs.2023.10.09.014) [links/6516f938b0df2f20a2f8b0e0/Tuberculosis-among-HIV-Patients-A-review-of-Prevalence-and-Associated-Factors.pdf](https://www.research.sd publishers.net/id/eprint/2819/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 coinfectd with HIV in Umuahia. *Int. J. Curr. Res. Med. Sci.* 2017;3(5):100-104.DOI: [10.22192/ijcrms.2017.03.05.014](https://doi.org/10.22192/ijcrms.2017.03.05.014) [https://www.academia.edu/download/54317126/Haematological\\_indices\\_of\\_malaria\\_patients\\_coinfectd\\_with\\_HIV.pdf](https://www.academia.edu/download/54317126/Haematological_indices_of_malaria_patients_coinfectd_with_HIV.pdf)
43. 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.
44. 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>.
45. 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](https://doi.org/10.32474/JCCM.2020.02.000137) [links/5f344530458515b7291bd95f/Comparative-Study-of-Enzyme-Linked-Immunesorbent-Assay-ELISA-and-Rapid-Test-Screening-Methods-on-HIV-HBsAg-HCV-and-Syphilis-among-Voluntary-Donors-in-Owerri-Nigeria.pdf](https://www.research.sd publishers.net/id/eprint/2819/links/5f344530458515b7291bd95f/Comparative-Study-of-Enzyme-Linked-Immunesorbent-Assay-ELISA-and-Rapid-Test-Screening-Methods-on-HIV-HBsAg-HCV-and-Syphilis-among-Voluntary-Donors-in-Owerri-Nigeria.pdf).
46. 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.
47. 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.sd publishers.net/id/eprint/2819/>.

**Citation:** Obeagu EI, Obeagu GU. **Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review.** *Elite Journal of Immunology*, 2024; 2(3): 1-18

48. Obeagu EI, Obeagu GU, Chukwueze CM, Ikpenwa JN, Ramos GF. Evaluation of Protein C, Protein S and Fibrinogen of Pregnant Women with Malaria in Owerri Metropolis. Madonna University journal of Medicine and Health Sciences. 2022;2(2):1-9.
  49. Obeagu EI, Ikpenwa JN, Chukwueze CM, Obeagu GU. Evaluation of protein C, protein S and fibrinogen of pregnant women in Owerri Metropolis. Madonna University Journal of Medicine and Health Sciences. 2022;2(1):292-8.  
<https://madonnauniversity.edu.ng/journals/index.php/medicine/article/view/57>.
  50. Obeagu EI, Obeagu GU, Adepoju OJ. Evaluation of haematological parameters of pregnant women based on age groups in Olorunsogo road area of Ido, Ondo state. J. Bio. Innov11 (3). 2022:936-41.
  51. Obeagu EI. An update on utilization of antenatal care among pregnant Women in Nigeria. Int. J. Curr. Res. Chem. Pharm. Sci. 2022;9(9):21-6.DOI: [10.22192/ijcrps.2022.09.09.003](https://doi.org/10.22192/ijcrps.2022.09.09.003)
  52. Okoroiwu IL, Obeagu EI, Obeagu GU. Determination of clot retraction in pregnant women attending antenatal clinic in federal medical centre Owerri, Nigeria. Madonna University Journal of Medicine and Health Sciences. 2022;2(2):91-7.  
<https://madonnauniversity.edu.ng/journals/index.php/medicine/article/view/67>.
  53. Obeagu EI, Hassan AO, Adepoju OJ, Obeagu GU, Okafor CJ. Evaluation of Changes in Haematological Parameters of Pregnant Women Based on Gestational Age at Olorunsogo Road Area of Ido, Ondo State. Nigeria. Journal of Research in Medical and Dental Science. 2021;9(12):462-.[links/61b1e32f0c4bfb675178bfa7/Evaluation-of-Changes-in-Haematological-Parameters-of-Pregnant-Women-Based-on-Gestational-Age-at-Olorunsogo-Road-Area-of-Ido-Ondo-State-Nigeria.pdf](https://doi.org/10.21961/links/61b1e32f0c4bfb675178bfa7/Evaluation-of-Changes-in-Haematological-Parameters-of-Pregnant-Women-Based-on-Gestational-Age-at-Olorunsogo-Road-Area-of-Ido-Ondo-State-Nigeria.pdf).
  54. Anyiam AF, Obeagu EI, Obi E, Omosigho PO, Ironde EA, Arinze-Anyiam OC, Asiyah MK. ABO blood groups and gestational diabetes among pregnant women attending University of Ilorin Teaching Hospital, Kwara State, Nigeria. International Journal of Research and Reports in Hematology. 2022 Jun 21;5(2):113-121.
  55. Obeagu EI. Gestational Thrombocytopaenia. J Gynecol Women's Health. 2023;25(3):556163.  
[links/64b01aa88de7ed28ba95fccb/Gestational-Thrombocytopaenia.pdf](https://doi.org/10.21961/links/64b01aa88de7ed28ba95fccb/Gestational-Thrombocytopaenia.pdf).
  56. 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 Aug 9;13(2):26-31.
  57. 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 Feb 23;33(4):10-9.
  58. Obeagu EI, Abdirahman BF, Bunu UO, Obeagu GU. Obstetrics characteristics that effect the newborn outcomes. Int. J. Adv. Res. Biol. Sci. 2023;10(3):134-43.DOI: [10.22192/ijarbs.2023.10.03.016](https://doi.org/10.22192/ijarbs.2023.10.03.016)
  59. Obeagu EI, Ogunnaya FU. PREGNANCYINDUCED HAEMATOLOGICAL CHANGES: A KEY TO MARTERNAL AND CHILD HEALTH. European Journal of
- Citation:** Obeagu EI, Obeagu GU. [Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review](#). Elite Journal of Immunology, 2024; 2(3): 1-18

- Biomedical. 2023;10(8):42-3. <links/64c890bddb38b20d6dad2c5c/PREGNANCY-INDUCED-HAEMATOLOGICAL-CHANGES-A-KEY-TO-MATERNAL-AND-CHILD-HEALTH.pdf>.
60. 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):10-9.
  61. Okamgba OC, Nwosu DC, Nwobodo EI, Agu GC, Ozims SJ, Obeagu EI, Ibanga IE, Obioma-Elemba IE, Ihekaire DE, Obasi CC, Amah HC. Iron Status of Pregnant and Post-Partum Women with Malaria Parasitaemia in Aba Abia State, Nigeria. *Annals of Clinical and Laboratory Research*. 2017;5(4):206. <links/5ea97df145851592d6a8acf2/Iron-Status-of-Pregnant-and-Post-Partum-Women-with-Malaria-Parasitaemia-in-Aba-Abia-State-Nigeria.pdf>.
  62. Eze RI, Obeagu EI, Edet FN. Frequency of Rh Antigen C And c among pregnant women in Sub-Urban area in Eastern Nigeria. *Madonna Uni J Med Health Sci*. 2021;1(1):19-30.
  63. Obeagu EI, Ofodile AC, Okwuanaso CB. A review of urinary tract infections in pregnant women: Risks factors. *J Pub Health Nutri*. 2023; 6 (1). 2023;137:26-35. <links/63c3a9116fe15d6a571e8bba/A-review-of-urinary-tract-infections-in-pregnant-women-Risks-factors.pdf>.
  64. Igwe MC, Obeagu EI, Ogbuabor AO, Eze GC, Ikpenwa JN, Eze-Sтивен 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.
  65. 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.
  66. 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>.
  67. 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>
  68. Echendu GE, Vincent CC, Ibebuikwe 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
  69. 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.

**Citation:** Obeagu EI, Obeagu GU. **Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review.** *Elite Journal of Immunology*, 2024; 2(3): 1-18

[links/5a4fd0500f7e9bbc10526b38/BIOCHEMICAL-ALTERATIONS-IN-ADULT-HIV-PATIENTS-ON-ANTIRETROVIRAL-THERAPY.pdf](#).

70. 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.
71. 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/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](#).
72. 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](#).
73. 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](#).
74. 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](https://www.academia.edu/download/38320134/Obeagu_Emanuel_Ifeanyi_and_Obeagu_Getrude_Uzoma.EMMA2.pdf).
75. 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.
76. 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.
77. 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.
78. Obeagu EI, Obeagu GU, Musiimenta E. Post partum haemorrhage among pregnant women: Update on risks factors. *Int. J. Curr. Res. Med. Sci.* 2023;9(2):14-7.DOI: [10.22192/ijcrms.2023.09.02.003](#)
79. Obeagu EI, Obeagu GU, Ogunnaya FU. Deep vein thrombosis in pregnancy: A review of prevalence and risk factors. *Int. J. Curr. Res. Chem. Pharm. Sci.* 2023;10(8):14-21.DOI: [10.22192/ijcrps.2023.10.08.002](#)
80. Jakheng SP, Obeagu EI, Jakheng EW, Uwakwe OS, Eze GC, Obeagu GU, Vidya S, Kumar S. Occurrence of Chlamydial Infection Based on Clinical Symptoms and Clinical History among Pregnant Women Attending Clinics in Zaria Metropolis, Kaduna State, Nigeria. *International Journal of Research and Reports in Gynaecology.* 2022;5(3):98-105.
81. Okorie HM, Obeagu EI, Eze EN, Jeremiah ZA. Assessment of some haematological parameters in malaria infected pregnant women in Imo state Nigeria. *Int. J. Curr. Res. Biol. Med.* 2018;3(9):1-4.DOI: [10.22192/ijcrbm.2018.03.09.001](#)

**Citation:** Obeagu EI, Obeagu GU. **Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review.** *Elite Journal of Immunology*, 2024; 2(3): 1-18

82. Onyenweaku FC, Amah HC, Obeagu EI, Nwandikor UU, Onwuasoanya UF. Prevalence of asymptomatic bacteriuria and its antibiotic susceptibility pattern in pregnant women attending private ante natal clinics in Umuahia Metropolitan. *Int J Curr Res Biol Med*. 2017;2(2):13-23.DOI: [10.22192/ijcrbm.2017.02.02.003](https://doi.org/10.22192/ijcrbm.2017.02.02.003)
83. 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.
84. 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>.
85. 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.
86. Obeagu EI, Obarezi TN, Ogbuabor BN, Anaeho 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.
87. 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.
88. 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.
89. Nwosu DC, Obeagu EI, Nkwuocha BC, Nwanna CA, Nwanjo HU, Amadike JN, Ezemima 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.
90. Obeagu EI, Malot S, Obeagu GU, Ugwu OP. HIV resistance in patients with Sickel Cell Anaemia. *Newport International Journal of Scientific and Experimental Sciences (NIJSES)*. 2023;3(2):56-59.
91. 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.
92. 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.
93. 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.

**Citation:** Obeagu EI, Obeagu GU. **Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review.** *Elite Journal of Immunology*, 2024; 2(3): 1-18



94. Obeagu EI, Obeagu GU. Eosinophil Dynamics in Pregnancy among Women Living with HIV: A Comprehensive Review. *Int. J. Curr. Res. Med. Sci.* 2024;10(1):11-24.
95. 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.
96. Kalbermatter C, Fernandez Trigo N, Christensen S, Ganai-Vonarburg SC. Maternal microbiota, early life colonization and breast milk drive immune development in the newborn. *Frontiers in immunology.* 2021; 12:683022.
97. Okoroiwu IL, Chinedu-Madu JU, Obeagu EI, Vincent CC, Ochiabuto OM, Ibekwe AM, Amaechi CO, Agu CC, Anoh NV, Amadi NM. Evaluation of Iron Status, Haemoglobin and Protein Levels of Pregnant Women in Owerri Metropolis. *Journal of Pharmaceutical Research International.* 2021 Apr 29;33(27A):36-43.
98. Obeagu EI, Njar VE, Obeagu GU. Infertility: Prevalence and Consequences. *Int. J. Curr. Res. Chem. Pharm. Sci.* 2023;10(7):43-50.
99. Emeka-Obi OR, Ibeh NC, Obeagu EI, Okorie HM. Evaluation of levels of some inflammatory cytokines in preeclamptic women in owerri. *Journal of Pharmaceutical Research International.* 2021 Aug 25;33(42A):53-65.
100. Obeagu EI, Faduma MH, Uzoma G. Ectopic Pregnancy: A Review. *Int. J. Curr. Res. Chem. Pharm. Sci.* 2023;10(4):40-4.DOI: [10.22192/ijcrps.2023.10.04.004](https://doi.org/10.22192/ijcrps.2023.10.04.004)
101. Obeagu EI, Gamade SM, Obeagu GU. The roles of Neutrophils in pregnancy. *Int. J. Curr. Res. Med. Sci.* 2023;9(5):31-5.DOI: [10.22192/ijcrms.2023.09.05.005](https://doi.org/10.22192/ijcrms.2023.09.05.005)
102. Nwovu AI, Ifeanyi OE, Uzoma OG, Nwibonyi 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).
103. 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.
104. 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.
105. 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.
106. 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.
107. 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*

**Citation:** Obeagu EI, Obeagu GU. **Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review.** *Elite Journal of Immunology*, 2024; 2(3): 1-18

- (Baltimore). 2023;102(47): e35910. doi: 10.1097/MD.00000000000035910. PMID: 38013350; PMCID: PMC10681510.
108. 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.
  109. 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.
  110. 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.
  111. 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).
  112. Eze R, Obeagu EI, Nwakulite A, Okoroiwu IL, Vincent CC, Okafor CJ, Chukwurah EF, Chijioke UO, Amaechi CO. Evaluation of Copper Status and Some Red Cell Parameters of Pregnant Women in Enugu State, South Eastern Nigeria. *Journal of Pharmaceutical Research International*. 2021 May 29;33(30A):67-71.
  113. Obeagu EI, Obeagu GU. Molar Pregnancy: Update of prevalence and risk factors. *Int. J. Curr. Res. Med. Sci*. 2023;9(7):25-8.DOI: [10.22192/ijcrms.2023.09.07.005](https://doi.org/10.22192/ijcrms.2023.09.07.005)
  114. Obeagu EI, Bunu UO. Factors that influence unmet need for family planning. *International Journal of Current Research in Biology and Medicine*. 2023;8(1):23-7.
  115. Ibebuike JE, Ojie CA, Nwokike GI, Obeagu EI, Nwosu DC, Nwanjo HU, Agu GC, Ezenwuba CO, Nwagu SA, Akujuobi AU. Barriers to utilization of maternal health services in southern senatorial district of Cross Rivers state, Nigeria. *International Journal of Advanced Multidisciplinary Research*. 2017;4(8):1-9.DOI: [10.22192/ijamr.2017.04.08.001](https://doi.org/10.22192/ijamr.2017.04.08.001)
  116. 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):203-11. <http://research.sdpublishers.net/id/eprint/2819/>.
  117. 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.
  118. 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.
  119. 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.

**Citation:** Obeagu EI, Obeagu GU. **Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review.** *Elite Journal of Immunology*, 2024; 2(3): 1-18

120. 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.
121. Obeagu EI, Obeagu GU. Unmasking the Truth: Addressing Stigma in the Fight Against HIV. *Elite Journal of Public Health*. 2024;2(1):8-22.
122. 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.
123. Obeagu EI, Obeagu GU. Utilization of immunological ratios in HIV: Implications for monitoring and therapeutic strategies. *Medicine*. 2024;103(9):e37354.
124. Obeagu EI, Obeagu GU. CD8 Dynamics in HIV Infection: A Synoptic Review. *Elite Journal of Immunology*. 2024;2(1):1-3.
125. Obeagu EI, Obeagu GU. Implications of B Lymphocyte Dysfunction in HIV/AIDS. *Elite Journal of Immunology*. 2024;2(1):34-46.
126. Obeagu EI, Obeagu GU. Maternal Influence on Infant Immunological Responses to HIV: A Review. *Elite Journal of Laboratory Medicine*. 2024;2(1):46-58.
127. 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.
128. Okorie HM, Obeagu EI, Eze EN, Jeremiah ZA. Assessment of coagulation parameters in malaria infected pregnant women in Imo state, Nigeria. *International Journal of Current Research in Medical Sciences*. 2018;4(9):41-9.DOI: [10.22192/ijcrms.2018.04.09.006](https://doi.org/10.22192/ijcrms.2018.04.09.006)
129. Obeagu EI, Obeagu GU. Postpartum haemorrhage among women delivering through spontaneous vaginal delivery: Prevalence and risk factors. *Int. J. Curr. Res. Chem. Pharm. Sci*. 2023;10(8):22-6.DOI: [10.22192/ijcrps.2023.10.08.003](https://doi.org/10.22192/ijcrps.2023.10.08.003)
130. Obeagu E, Eze RI, Obeagu EI, Nnatuanya IN, Dara EC. ZINC LEVEL IN APPARENTLY PREGNANT WOMEN IN URBAN AREA. *Madonna University journal of Medicine and Health Sciences* ISSN: 2814-3035. 2022 Mar 2;2(1):134-48. <https://www.journal.madonnauniversity.edu.ng/index.php/medicine/article/view/40>.
131. Ogomaka IA, Obeagu EI. Malaria in Pregnancy Amidst Possession of Insecticide Treated Bed Nets (ITNs) in Orlu LGA of Imo State, Nigeria. *Journal of Pharmaceutical Research International*. 2021 Aug 25;33(41B):380-6.
132. Obeagu EI, Ogunnaya FU, Obeagu GU, Ndidi AC. SICKLE CELL ANAEMIA: A GESTATIONAL ENIGMA. *migration*. 2023;17:18.
133. Ifeanyi OE, Uzoma OG. A review on erythropietin in pregnancy. *J. Gynecol. Womens Health*. 2018;8(3):1-4. [https://www.academia.edu/download/56538560/A\\_Review\\_on\\_Erythropietin\\_in\\_Pregnancy.pdf](https://www.academia.edu/download/56538560/A_Review_on_Erythropietin_in_Pregnancy.pdf).
134. Ifeanyi OE. A review on pregnancy and haematology. *Int. J. Curr. Res. Biol. Med*. 2018;3(5):26-8.DOI: [10.22192/ijcrbm.2018.03.05.006](https://doi.org/10.22192/ijcrbm.2018.03.05.006)
135. Nwosu DC, Nwanjo HU, Obeagu EI, Ibebuikwe JE, Ezeama MC. Ihekireh. Changes in liver enzymes and lipid profile of pregnant women with malaria in Owerri, Nigeria. *International Journal of Current Research and Academic Review*. 2015;3(5):376-83.

**Citation:** Obeagu EI, Obeagu GU. **Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review.** *Elite Journal of Immunology*, 2024; 2(3): 1-18

136. Ibebuike JE, Ojie CA, Nwokike GI, Obeagu EI, Nwosu DC, Nwanjo HU, Agu GC, Ezenwuba CO, Nwagu SA, Akujuobi AU. Factors that influence women's utilization of primary health care services in Calabar Cross river state, Nigeria. *Int. J. Curr. Res. Chem. Pharm. Sci.* 2017;4(7):28-33.
137. Obeagu EI, Obeagu GU. Platelet-Driven Modulation of HIV: Unraveling Interactions and Implications. *Journal home page: <http://www.journalijar.com>;*12(01).
138. Obeagu EI, Anyiam AF, Obeagu GU. Managing Hematological Complications in HIV: Erythropoietin Considerations. *Elite Journal of HIV.* 2024;2(1):65-78.
139. Obeagu EI, Obeagu GU, Hauwa BA, Umar AI. Hematocrit Variations in HIV Patients Co-infected with Malaria: A Comprehensive Review. *Journal home page: <http://www.journalijar.com>;*12(01).
140. 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.
141. 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.
142. 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.
143. Obeagu EI, Obeagu GU. Transfusion Therapy in HIV: Risk Mitigation and Benefits for Improved Patient Outcomes. *Sciences.* 2024;4(1):32-7.
144. Obeagu EI, Obeagu GU. Mental Health and Psychosocial Effects of natural disaster on HIV Patients. *Sciences.* 2024;4(1):38-44.
145. 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.
146. 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.
147. Eze R, Ezeah GA, Obeagu EI, Omeje C, Nwakulite A. Evaluation of iron status and some haematological parameters of pregnant women in Enugu, South Eastern Nigeria. *World Journal of Pharmaceutical and Medical Research.* 2021;7(5):251-4.
148. Elemchukwu Q, Obeagu EI, Ochei KC. Prevalence of Anaemia among Pregnant Women in Braithwaite Memorial Specialist Hospital (BMSH) Port Harcourt. *IOSR Journal of Pharmacy and Biological Sciences.* 2014;9(5):59-64.
149. Akandinda M, Obeagu EI, Katonera MT. Non Governmental Organizations and Women's Health Empowerment in Uganda: A Review. *Asian Research Journal of Gynaecology and Obstetrics.* 2022 Dec 14;8(3):12-6.
150. Vidya S. Sunil Kumar Shango Patience Emmanuel Jakheng, Emmanuel Ifeanyi Obeagu, Emmanuel William Jakheng, Onyekachi Splendid Uwakwe, Gloria Chizoba Eze, and Getrude Uzoma Obeagu (2022). Occurrence of Chlamydial Infection Based on Clinical Symptoms and Clinical History among Pregnant Women Attending Clinics in Zaria

**Citation:** Obeagu EI, Obeagu GU. **Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review.** *Elite Journal of Immunology*, 2024; 2(3): 1-18

- Metropolis, Kaduna State, Nigeria. International Journal of Research and Reports in Gynaecology.;5(3):98-105.
151. Gamde MS, Obeagu EI. IRON DEFICIENCY ANAEMIA: ENEMICAL TO PREGNANCY. European Journal of Biomedical. 2023;10(9):272-5. [links/64f63358827074313ffaae7b/IRON-DEFICIENCY-ANAEMIA-ENEMICAL-TO-PREGNANCY.pdf](https://epjournals.com/journals/EJI/links/64f63358827074313ffaae7b/IRON-DEFICIENCY-ANAEMIA-ENEMICAL-TO-PREGNANCY.pdf).
  152. Emeka-Obi OR, Ibeh NC, Obeagu EI, Okorie HM. Evaluation of levels of some inflammatory cytokines in preeclamptic women in owerri. Journal of Pharmaceutical Research International. 2021 Aug 25;33(42A):53-65.
  153. Emeka-Obi OR, Ibeh NC, Obeagu EI, Okorie HM. Studies of Some Haemostatic Variables in Preeclamptic Women in Owerri, Imo State, Nigeria. Journal of Pharmaceutical Research International. 2021 Aug 30;33(42B):39-48.
  154. Obeagu EI, Obeagu GU. Postpartum haemorrhage among women delivering through spontaneous vaginal delivery: Prevalence and risk factors. Int. J. Curr. Res. Chem. Pharm. Sci. 2023;10(8):22-6.
  155. Obeagu EI, Obeagu GU. Sick Cell Anaemia in Pregnancy: A Review. International Research in Medical and Health Sciences. 2023 Jun 10;6(2):10-3.
  156. Obeagu EI, Ayogu EE, Obeagu GU. Interactions between Blood Transfusion and Antiretroviral Medications: Implications for Patient Care. Elite Journal of Medicine. 2024;2(2):104-15.
  157. 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.
  158. Obeagu EI, Anyanwu CN, Obeagu GU. Challenges and Considerations in Managing Blood Transfusion for Individuals with HIV. Elite Journal of HIV. 2024;2(2):1-7.
  159. 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.
  160. Obeagu EI, Obeagu GU. Understanding Hematocrit Fluctuations in HIV-Malaria Coinfection for Improved Management. Elite Journal of Public Health. 2024;2(1):22-34.
  161. 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.
  162. 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).

**Citation:** Obeagu EI, Obeagu GU. Impact of Maternal Eosinophils on Neonatal Immunity in HIV-Exposed Infants: A Review. Elite Journal of Immunology, 2024; 2(3): 1-18