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**A matched case-control study to assess the association of Chikungunya severity among blood groups and other determinants in Tesseney, Gash Barka zone, Eritrea**

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**Statement of the problem:** CHIKV has recently emerged in our country Eritrea from the Sudanese border resulting in an outbreak in Tesseney town and association of diseases with blood groups has always been under controversial discussion.

**Purpose:** The purpose of this study is to give a clear depiction of the severity of Chikungunya disease along its relation with blood group, chronic disease, pregnancy, gender, age and latrine use.

**Methodology:** A sex-matched and age-matched case-control study was conducted during the outbreak. For each case, there were two controls, one from the mild and one free from the chikungunya disease. Calculating odds ratios (ORs) and conditional (fixed-effect) logistic regression methods were being applied.

**Finding:** In this outbreak, 137 severe suspected chikungunya cases and 137 mild chikungunya suspected patients and 137 controls free of chikungunya from the neighborhood of cases were analyzed. Non-O individuals compared to those with O blood group indicated as significant with p value of 0.002. And a strong association of Chikungunya severity was found with hypertension and diabetes (p-value of <0.0001); whereas, there was no association between Chikungunya severity and asthma with p-value of 0.695, no association with pregnancy (p-value=0.881), ventilator (p-value=0.181), air conditioner (p-value=0.247), and didn't use latrine and pit latrine (p-value=0.318).

**Conclusion:** Non-O blood groups were found to be at risk more than their counterpart. Similarly, individuals with chronic disease were more prone with severe form of Chikungunya disease. Prioritization is recommended for patients with chronic diseases and non-O blood group since they are found to be susceptible to severe chikungunya disease. Identification of human cell surface receptor(s) for CHIKV is quite necessary for further understanding of its pathophysiology in humans. Therefore, Molecular and functional studies will necessarily be helpful in disclosing the association of blood group antigens and CHIKV infections.

**Recent Publications**

1. Samsom M Giliu, et al., (2018) Factors associated with obstetric fistula among women admitted to Mendefera National Fistula Center, Eritrea. International Journal of Recent Scientific Research 9(3):25097-25100.
2. Samsom Mehari and Gabriel Dawit () Honey a booster for the activity of antibiotics: Int J Pharm. 7(3): 196-200.
3. Samsom Mehari Giliu et al., (2019) Assessment of health education talks in health facilities of region anseba-Eritrea. The International Journal of Current Advanced Research 8(1):16821-16824.

**Biography**

Samsom Mehari Giliu is a proficient Public Health Officer since 2015. He is the Chief Manager of Regional TB/leprosy control program Division of CDC Department, Ministry of Health, Anseba Region, Eritrea. He is responsible for providing training, reporting to the national and conducting seminars, supervisions, advocacy, and creating awareness on TB, Leprosy and HIV/AIDS in Zoba Anseba, which is one of the six Eritrean administrative zones. He is also a Member of regional TB, HIV and Diabetic Committee and one of the three members of zonal research committee. He has completed his BSc in Public Health from School of public health, Asmara College of Health Science, Asmara, Eritrea. He is a Young Researcher who has insatiable enthusiasm for research. He has published three articles so far with limited resource.

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