ABO, Duffy and Secretor Phenotype Profiles among Blood Donors in Nairobi, Kenya

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INTRODUCTION

- Blood group antigens are expressed on red blood cells. However, these antigens can also be expressed on some other cells particularly the surface of epithelial cells and may be found in mucosal secretions.
- The gene that determines secretion of these blood group antigens is the Secretor gene. In many human populations 80% secrete ABO antigens (termed secretors) while 20% do not (termed non-secretors).
- Furthermore, there are disease conditions that are associated with secretor status.
- In this study, the blood group antigens and secretor status were determined in blood donors from Nairobi, Kenya.

OBJECTIVES

- To determine ABO and Duffy blood group antigen profiles among voluntary non-remunerated blood donors in Nairobi, Kenya.
- To determine blood group antigen Secretor/Non Secretor phenotype profiles among voluntary non-remunerated blood donors in Nairobi, Kenya.

METHODS

- This study enlisted 142 adult blood donors, 106 male and 36 female, from the Nairobi Regional Blood Transfusion Centre.
- Blood grouping was determined using monoclonal antibodies to the ABO and Duffy blood group antigens.
- Secretor Status was determined using H-lectins specific to salivary H antigen. This was performed to determine the variable expression of the H blood group antigen in saliva: secretor and non-secretor phenotypes.

RESULTS

- Of the total of 142 voluntary non-remunerated blood donors:

  - Blood group A was the most common, followed by B, AB, O.
  - Secretor status was determined, with 85% being secretors and 15% non-secretors.

CONCLUSION

- This is the first report to document the secretor phenotype frequency among a Kenyan population.
- We postulate further investigations will demonstrate the correlations between secretor status and the HIV infectious process.
- A better understanding of the mucosal mechanism of protection associated with blood group antigen expression profiles may provide additional insight into the development of new HIV preventive technologies.

REFERENCES


SPONSORS

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