

## Differential rheology of ABO blood group system

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ABO blood groups have been associated with different diseases in the literature. The non O blood groups (A, B, and AB) have been shown to be more susceptible to arterial and venous thrombotic diseases with no demonstrable rheological explanations. This study was aimed at ascertaining how specific antigenic substance affects the erythrocyte's rheological properties and that of the whole blood. A total of 68 young healthy subjects were studied, 20 subjects for each blood group (A, B, and O) and eight (8) AB. Standard laboratory techniques were used for the hemorheological determinations such as Relative plasma viscosity (RPV), Plasma Fibrinogen concentration (PFC) and red cell deformability using the transit time model (the higher the transit time, the lesser the deformability). We observed that blood group AB had a significantly higher RPV and Platelet count ( $p < 0.05$ , respectively) when compared with other blood groups, while transit times is in the order of  $B >> A >> O >> AB$  ( $p < 0.05$ , respectively). There were no significant differences in the values of PFC and other red cell indices in all the blood groups, though, group AB exhibited a slightly higher value but not statistically significant. In conclusion, Blood group AB seems to have a positive advantage of better deformability despite its relatively high plasma viscosity. This clearly shows that hemorheological variations thus exist amongst the ABO blood groups and the biochemistry of the red cell antigens may be a determinant of their membrane mechanical properties.

### Biography

Oforwve O. Ekakite graduated as a Physiologist from Ambrose Alli University, Ekpoma and has just completed his M.Sc. degree at the University of Benin, Benin City, Nigeria. His research interest is in blood Physiology and rheological mechanisms.

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