Prevalence of cytomegalovirus antibodies in blood donors at the National Blood Transfusion Centre, Nairobi.

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Abstract

BACKGROUND:
Cytomegalovirus (CMV) infection in susceptible patients is associated with serious morbidity and a high mortality. Transmission of cytomegalovirus infection through blood transfusion is markedly reduced by transfusion of CMV seronegative blood products, or by transfusion of leucodepleted blood products.

OBJECTIVE:
To determine the prevalence CMV IgG and IgM antibodies among blood donors at the National Blood Transfusion Services (NBTS), Nairobi.

DESIGN:
Cross-sectional descriptive study.

SETTING:
Four hundred participants were recruited from blood donors at the NBTS and testing was done at the Kenyatta National Hospital (KNH) immunology laboratories and the NBTC.

MAIN OUTCOME MEASURES:
Social demographic data and the CMV serologic status for the participants was determined and documented as being positive or negative for immunoglobulin G (IgG) and immunoglobulin M (IgM). The age, gender, marital status, education level and geographical area of residence of the participants were documented. Corresponding results of HIV, hepatitis B antigen, hepatitis C antibody from the patients were obtained from the NBTS.

RESULTS:
Majority of the blood donors recruited were male at 57.9%. Most blood donors were aged 16-20 years (42.5%) and only 17.2% were above 30 years of age. Unmarried blood donors, those with secondary school education and an income between Kshs 5000 (US $67) and KShs 50,000 (US$ 667) monthly were the majority at 78.5%, 54.8% and 66.1% respectively. Sexually active blood donors constituted 60.5% of the donors recruited. Positivity for transfusion transmissible infections (TTI) tested was 1.3%, 0.3%, 2.3% and 1.0% for human immunodeficiency virus (HIV), syphilis, hepatitis B and hepatitis C respectively. Anti- CMV IgG and IgM positivity was 97.0%, (95% CI 96.45-97.53%), and 3.6% (95% CI 1.7-5.2%), respectively. There was no statistical difference between different ages, marital status, salary, individual's sexuality in the prevalence of CMV antibodies. However females had a higher prevalence of CMV antibodies.

CONCLUSION:
There is a very high prevalence of cytomegalovirus antibodies among blood donors at the NBTS, with virtually all blood donors having been exposed to the virus. Since the CMV remains latent within leucocytes after infection inspite of the presence of antibodies in seropositive individuals, leucoreduction of blood products is recommended before transfusion to seronegative susceptible patients. In Kenya, susceptible groups of patients include very low birthweight babies, patients with acquired immune deficiency syndrome (AIDS) due to human immunodeficiency virus infections (HIV) patients, patients on myelosuppressive cancer therapy and recipients of kidney transplants. Further studies are recomended to determine the prevalence of CMV antibodies in these patients in order to establish the magnitude of the demand for CMV safe blood.