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The feasibility of establishing sickle cell disease screening services at health centers in Uganda

Okwi Andrew Livex, Wilson Byarugaba, Christopher M Ndugwa, Arthur Parkes, Michael Ocaido and James K Tumwine
Makerere University, Uganda

A cross sectional study was done to determine the feasibility of introducing sickle cell disease (SCD) screening services at health centers in the districts of Uganda. The knowledge gaps, attitudes and beliefs of the communities about SCD and its detection were determined. The prevalence of SCD among infants was established. The reliability and cost benefit analysis of solubility and sickling tests; and peripheral blood film method was done. Respondents from the East were more aware of SCD than those from the West ($p < 0.001$). Less than 20% of the respondents knew their SCD status and ($< 14\%$) of the health staff knew how to screen it. The prevalence of sickle cell trait (AS) was higher in the East (17.5%) and Bundibugyo (13.4%) than in Mbarara and Ntungamo (3%) ($p < 0.001$). The difference in the prevalence of homozygous genotype (SS) was statistically insignificant between Bundibugyo (3%) and the East (1.7%) ($p > 0.05$). No SS was detected in Mbarara and Ntungamo. The sickling test had sensitivity and specificity (65%; 96.5%) and positive and negative predictive values (61.9%; 96.1%) respectively. The solubility test and peripheral blood film method had sensitivities of 45.0% and 35.0% respectively. Their positive and negative predictive values were (33.3%; 85.5%) and (53.9%; 93.1%) respectively. Screening children at health centers using sickling test, and then confirming positive samples at the regional hospital using cellulose acetate Hb electrophoresis would be both sensitive and cheaper than confirming positives in Mulago National referral hospital. Detection of SCD children would be expensive for districts far from the regional hospitals. There is a need to sensitize the communities about SCD and screen children for SCD at district health centers using sickling test, then confirm positive cases at regional hospital (for near districts) or at district hospitals (for districts far from regional hospital) using cellulose acetate Hb electrophoresis.

Biography

Okwi Andrew Livex (PhD), is an Associate Professor in the Department of Pathology, Makerere University College of Health Sciences. He teaches and supervises both Undergraduate and Post graduate students and co-ordinates both Undergraduate and Post graduate programmes. He has published over 24 papers in peer reviewed papers and has reviewed papers from several reputable journals. He is a member of several professional and research bodies. He has interest in collaborative research in the areas of: Genetics and molecular mechanisms of sickle cell disease and genetic and viral factors which influence cell proliferation and apoptosis in tumours.

andrewol@chs.mak.ac.ug