Introduction

- Sickle cell disease (SCD) remains a significant cause of early childhood morbidity and mortality in Sub-Saharan Africa, with Tanzania having the 3rd highest number of SCD births/year.
- Currently, there is no universal SCD screening program in Tanzania.
- It has been predicted that the sickle gene is highly prevalent in Tanzania’s northwest region due to the proximity of Lake Victoria and high incidence of malaria in the area.

Study Aims

- Determine the prevalence of SCD and sickle cell trait (SCT).
- Evaluate the understanding of SCD and its inheritance pattern in Rorya District, a region of northwestern Tanzania.

Methods

- Cross-sectional prevalence and descriptive study completed over 8 weeks from June – August 2019.
- 7 question knowledge assessment (Figure 6) administered to parent/guardian prior to SCD/SCD testing.
- Children 5 years of age and younger were tested for their sickle cell status using a rapid, point-of-care test*.
- Results were recorded and the parent/guardian was counseled on the meaning of the result with referral to the town physician for penicillin therapy.

Results

- 1003 children were included in the analysis of prevalence data
- 113 children were screened in the hospital pediatric ward
- 863 children were screened in immunization clinics or the maternity ward
- For 27 children, the location was not recorded
- 928 parents/guardians completed the pre-screening knowledge assessment.
- A statistically significant difference was found between mother’s education level and high incidence of malaria in the area.
- No significant difference was found between sickle cell genotype and testing location, however there was an apparent trend towards significance (26.9% vs. 16.8% SCT in outpatient vs inpatient; \( \chi^2(2)=5.457, p=0.065 \)).

Conclusions

- The prevalence of SCD and SCT in Rorya District, Tanzania is one of the highest in the world.
- Our estimated prevalence rates of 2.7% (SCD) and 25.7% (SCT) are significantly higher than those found in a 2014 study conducted just 6 hours south of our study location (1.4% SCD birth prevalence).
- Our study confirms the global health crisis posed by SCD, particularly in malaria endemic regions such as northwestern Tanzania.
- Knowledge and understanding of SCD is significantly lacking among the residents of Rorya District and correlated with education level.
- More than ¾ of parents in this study had a primary school education or less, indicating the need for better health literacy.

Further Directions

- A SCD clinic was created in November 2019 to better monitor and treat children with identified SCD.
- Continued SCD screening in Rorya District.
- Future project to assess how sickle cell status affects marital choice to be conducted during the summer of 2021.
- Universal newborn screening for all of Tanzania is the ultimate goal.

References