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SICKLE CELL DEMOGRAPHY OF CHILDREN ADMITTED INTO ITFC MSF HOSPITAL (NILEFA KIJI) IN MAIDUGURI, NIGERIA

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BACKGROUND

- Sickle cell disease (SCD) is a congenital blood disorder.
- It is the most common life-threatening genetic disorder among people of African ancestry.
- Most children born with it would not survive to adulthood without comprehensive healthcare.
- The highest sickle cell disease disability burden is concentrated in western and central sub-Saharan Africa and India.
- Nigeria is considered the most sickle cell disease (SCD) endemic country in the world.
- 4.2% of national under-5 mortality was attributable to excess mortality from sickle cell disease.

Significance of the study: This study can provide insight into the clinical characteristics of children with SCD complicated by malnutrition. This could help better target their care and support and prevent morbidities and mortalities among these children.

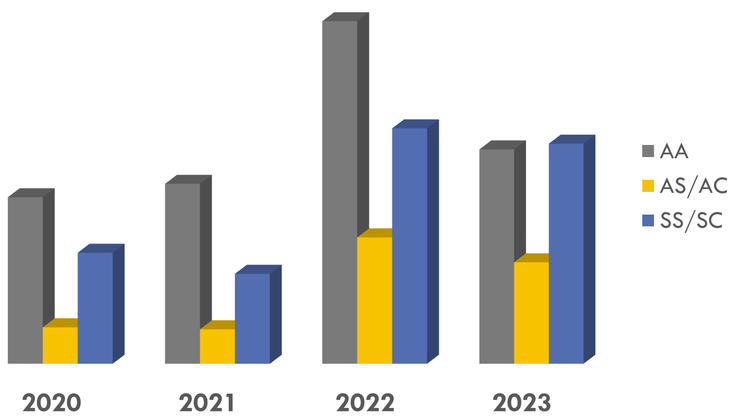
Primary Objective: To describe the demographic characteristics of the patients who had sickle cell tests done on admission to a therapeutic feeding facility.
Secondary Objective: To elaborate clinical characteristics of sickle cell disease patient admissions over the same 4-year period.

METHODS

- Design: Retrospective study
- Setting: MSF hospital in Maiduguri
- Study period: Jan 2020-Dec 2023
- All medical files retrieved
- Variables collected = year, age, sex and haemoglobin (Hb) genotype categories among other possible categories
- We also collected demographic details, clinical presentations, admission haemoglobin levels, number of transfusions and oxygen need

The study yielded 971 laboratory records and 337 clinical files that were reviewed in total.

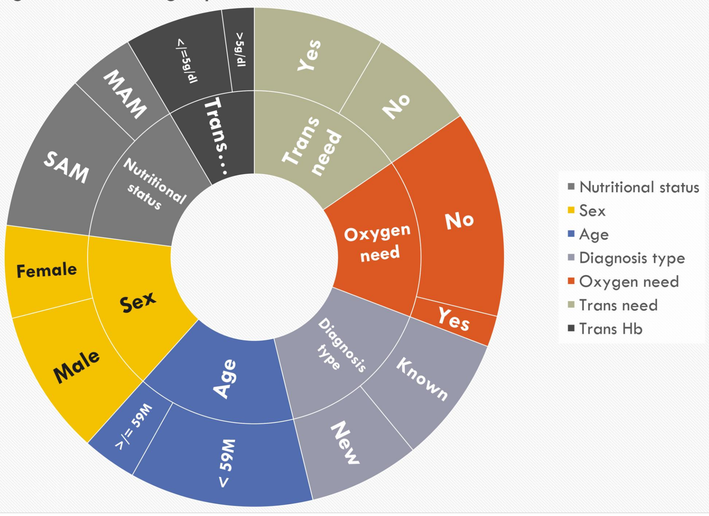
Figure1. Laboratory Hb Genotype test Results



RESULTS

- Among the 971 tests, 472 (48.6%) had normal Hb genotype (AA), 156 (16.1%) were carriers (AS/AC) and 343 (35.3%) had sickle cell genotypes (SS/SC).
- SS accounted for 96.8% (332/343) of SCD cases as shown in Figure 1.
- Specifically, 60.7% of all Hb genotypes were males. AA genotype were 60% male, carriers (AS/AC) were 62.8% male and sickle cell genotypes (SS/SC) were 60.9% male.
- Among those with recorded age, there were 303 (303/971) with the sickle cell genotypes (SS/SC), 86.8% (263) of them were ≤ 59 months and 13.2% (40) were >59 months of ages.

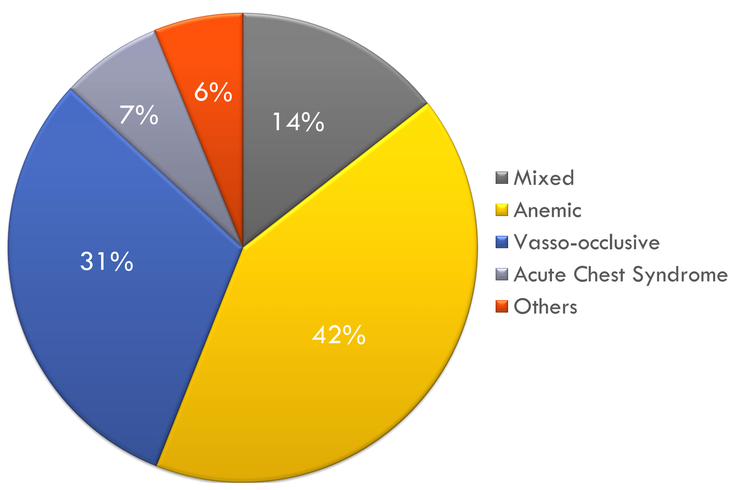
Figure 2. Demographic characteristics of the SCD admissions



Shown in Figure 2 above, the review of 337 clinical files.

- 61.1% (206/337) were males and 38.9% (131/337) were females.
- Of these admissions, 77.2% (260/337) were children below 59 months of age and 22.8% (77/337) were above 59 months.
- The nutritional status of 72.4% of the children were SAM and the remaining 27.6% were MAM.
- Of children admitted with SCD, 53.4% (180/337) had their diagnosis already known at admission.
- The remaining 46.6% (157/337) were new diagnoses during the hospital stay.

Figure 3. SCD Crisis Type



The pie chart (Figure 3) demonstrates the distribution of the type of complications SCD patients were admitted with. Anaemia was the most common presentation (42%) while 31% presented with signs of vaso-occlusive crisis. Acute Chest syndrome accounted for 7% of them and mixed crisis was present in 14% of all the patient files reviewed.

Figure 4 Outcomes of admission

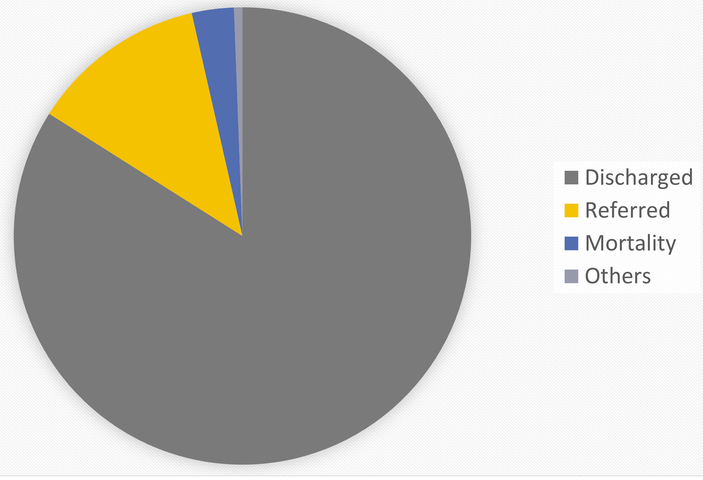


Figure 4 describes the final disposition of the patients at the end of their stay at the facility. The majority (84%) were successfully discharged to out-patient nutritional follow up, 12.5% were referred to other facilities or for specialist management. Mortality accounted for 3% of the patient outcomes and the remaining 0.5% were other outcomes.

DISCUSSION and CONCLUSION

- In our programme, SCD burden is high: 523 cases (343 cases with laboratory diagnosis and 180 previously diagnosed cases), which makes up 2.1% (523/24986) of the total admissions over the 4-year period.
- Likely underestimated
- 36% positivity rate of tests based on clinical signs
- Complications require blood transfusion availability
- Mortality of 3% and other categories like left against medical advice of <1% is acceptable within the context of malnutrition.
- Nutrition supplementation is an integral part of SCD management either as outpatient or inpatient

ETHICS STATEMENT

Study received appropriate MSF ERB exemption and was approved by the OCB Medical Director. We also received the Borno State Ethical Committee clearance.