THE EFFECTS OF SICKLE CELL DISEASE ON MATERNAL MORTALITY AND MORBIDITY

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Sickle Cell Disease: A brief Overview

- Sickle Cell PSA
- https://youtu.be/Ttt9h81H_sc
Sickle Cell Disease: A brief Overview:

- Most common monogenetic blood disease.
- Affects approximately 30 million lives globally.
- Caused by an abnormal protein mutation in hemoglobin.
- Occurs at conception: one copy of sickle gene inherited from each patient.
- Varied forms of the disease. Sickle Cell Anemia is most common.
https://youtu.be/9AHFHleYwdU
Who can SCD Affect?

- Concentrations of disease originally found in malaria endemic areas.
Pregnancy and Sickle Cell Disease

- Improvements in SCD treatment have led to more women able to reach reproductive years.
- SCD causes chronic injuries to major organs over life span.
- Pregnancy can create additional burden to already compromised body systems.
Common causes of Maternal Morbidity and Mortality with SCD

- Pulmonary complications such as Acute Chest Syndrome
- Vaso-occlusive crises
- Infection
- Anemia
- Preeclampsia
- Eclampsia
- Impaired cardiac function
- Preterm Birth
- Post partum hemorrhage
- Pulmonary thrombosis
Associated Fetal Complications

- Intrauterine fetal growth impairment
- Low Birth Weight rates higher with SCD pregnancies
- Spontaneous abortions
- Premature births
- Still births
Pregnancy Complications

- Stress, dehydration, over-exertion, cold, infection leading to crises.
- By reproductive age, most women with SCD have functional or surgical aspleenism.
- Third trimester and puerperium: most vulnerable to crises, pulmonary complications, infections.
- Higher rates of LBW, miscarriages and stillbirths in SCD populations.
Economic Influences

- Fewer adverse outcomes in developed countries.
- Mortality rates much higher in developing world.
- Access to care in most Sub-Saharan African countries.
- Lack of health policies and infrastructure.
Other Economic Disadvantages

- Lack of adequate screening measures.
- High risk home births (no access to emergency and/or tertiary care services).
- Inadequate vaccinations.
- Presence of malaria complicates crises.
Case Studies

- Most are retrospective
- Extreme variability in disease presentation prevents development of appropriate protocols.
- Treatment practices in developed countries may not suit developing world due to inadequate infrastructure.
Retrospective Case Studies: Prophylactic blood transfusions

- Did not significantly decrease morbidity and/or mortality.
- Some studies showed less painful crises.
- Risk of transfusion reactions, alloimmunization, iron overload, excessive clot formation.
- Transfusion indicated on case by case basis according to symptoms.
Measures for Better Outcomes

- Information and education
- Screening and genetic counselling for couples.
- Family planning services
- Easy access to tertiary and emergency care services
- Encourage up to date flu and pneumonia vaccinations
- More frequent biometric scans of fetus
Outcome Improvement in Low to Middle Income Countries

- Education and awareness
- Screening of couples
- Hydration and nutritional status to prevent crises
- Malaria prevention and early detection of parasitic infection
- Training of family members to recognize early signs and symptoms
- Policy changes that provide better and easier access to emergency health services
We’ve Come This Far....

- Major advances in healthcare have led to better life expectancy for people with SCD
- Still not completely understood
- No known universal cure for SCD
- Herbal management in developing countries
- Further research and case studies needed
We can go much further...
Discussion Questions

- Do you know of other ways to prevent crises in this population?
- How else can we enable women at a grassroots level, take better care of themselves with sickle cell disease?


