ACUTE CHEST SYNDROME IN CHILDREN WITH SICKLE CELL ANAEMIA AT MULAGO HOSPITAL: PREVALENCE, AETIOLOGY AND CLINICAL CHARACTERISTICS

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ABSTRACT

Background: Acute chest syndrome (ACS) is a potentially fatal acute pulmonary complication of sickle cell disease (SCD) defined as presence of an infiltrate on chest x-ray in SCD patient with fever and pulmonary symptoms and signs. In developed countries it is the second most common cause of hospital admissions of children with SCD. Little is known about its burden in sub-Saharan Africa, including Uganda. We set out to determine the prevalence, and to describe the clinical characteristics and bacterial infections associated with acute chest syndrome amongst children with sickle cell anaemia who attend Mulago Hospital

Methods: In a cross sectional study, 263 children with SCA and fever from the Sickle Cell Clinic and Acute Care Unit at Mulago Hospital were recruited after informed consent/assent. Chest X-rays, blood cultures, complete blood count, and sputum induction were done. ZN staining, culture and sensitivity and DNA PCR for *Chlamydia pneumoniae* were done on the sputum. Data was captured using *Epidata ver 3.1* and exported to *STATA Ver 12* for analysis.

Results: Fifty eight (22.7 %) of the 256 children had ACS. Apart from presence of tachypnoea, SpO_2 <92% and abnormal chest auscultation, clinical and laboratory findings were essentially not different between children with ACS and those without ACS. Out of the 256 blood culture results, *Staphylococcus aureus* 11 (4%), *Streptococcus pneumoniae* 3 (1%), and Group D Salmonella 3 (1%) were the most commonly isolated bacteria. Out of the 83 sputum culture and staining results *Streptococcus pneumoniae* 10 (12%), Moraxella Spp 7 (8%), *Mycobacterium tuberculosis* 6 (7%), were the most common organisms identified. Of the 59 sputum DNA-PCR run, *Chlamydia pneumoniae* was positive in 35 (59%). Twenty five (43.1%) of the CXRs had consolidation and 29 (50.0%) had an interstitial pattern.

Conclusion: One in 5 children with SCA and fever had ACS. Tachypnoea, SpO_2 <92% and abnormal chest auscultation in a febrile SCA child is associated with ACS. Infections contribute to causative factors of ACS.