Chorioamnionitis as a cause of perinatal death in the Child Health and Mortality Prevention Surveillance (CHAMPS) Site of Manhiça, Southern Mozambique.

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BACKGROUND

✓ Chorioamnionitis is a common complication of pregnancy, associated with maternal morbidity and perinatal deaths. However, its impact in low and middle-income countries (LMICs), such as Mozambique, is still poorly characterized.

✓ In LMICs, prenatal visits are still suboptimal, and preventive measures such as testing for Streptococcus agalactiae before delivery are not widely implemented.

✓ Perinatal healthcare assistance is far from guaranteed, thus potentially treatable delivery complications like chorioamnionitis have important consequences in both maternal and newborn’s outcome.

THE STUDY

✓ When? December 2016 -February 2019

✓ Where? Manhiça district area - Southern Mozambique, Sub-Saharan Africa

✓ What? Child Health and Mortality Prevention Surveillance (CHAMPS) network, minimally invasive tissue sampling (MITS), were conducted post- mortem in order to ascertain the cause of death under five years of age and stillbirths, after written informed consent was obtained. Clinical data was collected from health facilities, and verbal autopsies were conducted with family members. The final diagnosis have been classified according to ICD-10 coding system.

RESULTS

✓ A total of 171 MITS were conducted in children under five years of age, including children less than 28 days of life and stillbirths. Almost 70% of them (117) were perinatal deaths: 59 Stillbirths (50%), 41 Deaths in the first 24h (35%) 17 early neonatal deaths (1-6 days) (15%).

✓ Chorioamnionitis was identified as a main maternal condition leading to death in 17% of the perinatal deaths cases (20/171), being the main death cause in one in every 6 perinatal deaths. This number might be higher, since the deliveries that occur at home usually don’t have available placentas for their analysis.

![Image 1](https://example.com/image1.png)

**Image 1:** Gross photograph of the fetal surface of fresh placenta after cutting chorion and part of the umbilical cord. The smears/chorion and umbilical cord show greenish-yellow discoloration, highly suggestive of chorioamnionitis and funisitis, respectively.

![Image 2 and 3](https://example.com/image2_3.png)

**Image 2 and 3:** Microphotographs of the umbilical cord of the placenta at 20x and 40x magnification. There is an extensive acute inflammatory infiltrate composed of neutrophils and images of endotheliitis, consistent with fetal reaction to chorioamnionitis (funtis with umbilical vasculitis).

![Image 4](https://example.com/image4.png)

**Image 4:** A microbiological agent was identified in 65% of the autopsies. The remaining diagnosis were made with the histopathological study only. The most frequent pathogens isolated were the common neonatal infectious pathogens *S. agalactiae* and *E. Coli* (25% of the cases), followed by other *Streptococcus*. We also identified less frequent agents like *P. nucleosis*, *K. pneumoniae*, *P. aeruginosa* and *E. amnionii*.

All the mothers had antenatal visit records. All the deliveries except one occurred in a Hospital facility. Only one of those has been attended by a doctor.

None of the mothers presented fever during labour according to clinical data. None of them had done perinatal screening to *S. agalactiae*.

CONCLUSIONS

✓ Chorioamnionitis is an important factor in the chain of events leading to perinatal death in our setting.

✓ The most frequent pathogen isolated is *S. agalactiae*, supporting the potential benefits of its screening and/or prevention.

✓ Our study confirms the significant impact of chorioamnionitis on perinatal mortality, and the importance of studying placental samples when available.