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Seroprevalence of treponema pallidum in pregnant women at the time of delivery and their neonates at Misisi Mini-hospital and Chawama General Hospital, Zambia

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Introduction

Syphilis, caused by Treponema pallidum, persists as a significant global health challenge, particularly among pregnant women and their neonates which can lead to congenital syphilis. Despite available interventions, the burden of congenital syphilis remains substantial, especially in resource-limited settings like Zambia. This cross-sectional study aims to estimate the seroprevalence of Treponema pallidum among pregnant women at delivery, assess the prevalence of congenital syphilis among their neonates, and identify associated risk factors.

Methods

A quantitative, cross-sectional study was conducted at Misisi Mini Hospital and Chawama General Hospital. The study population included pregnant women aged 18 years and above admitted for delivery and postnatal mothers, along with their neonates, who were screened for clinical symptoms of congenital syphilis. Convenience sampling was used to recruit 267 participants, and data collection involved in-person interviews, RPR testing for syphilis, and physical examinations of neonates. Data analysis was performed using STATA v14.2.

Results

This study enrolled 274 participants, socio-demographic characteristics revealed that the majority were above 24 years of age (56.41%), had attained secondary-level education (61.68%), and were married (81.39%). Regarding neonates, most weighed 3 kg (70.44%) and had a gestational age of at least 9 months (87.59%). Among pregnant women, 28.5% were not tested for syphilis during antenatal visits, and 10% were diagnosed with syphilis at delivery. Of the neonates exposed, 23% had clinical congenital syphilis, while 77% had nonclinical congenital syphilis. Among the risk factors, parity <2 and vaginal discharge had a significant association with positive syphilis diagnosis among pregnant women ($p < 0.05$). HIV-positive status ($p < 0.001$) and vaginal discharge ($p < 0.05$) were significantly associated with congenital syphilis.

Conclusion

This study uncovered deficiencies in antenatal syphilis screening, with approximately 28.5% of participants lacking screening during pregnancy. The findings highlighted a substantial prevalence of active syphilis infection among pregnant women

and a significant proportion of neonates born to infected mothers with clinical congenital syphilis. Identified risk factors for congenital syphilis included HIV infection and vaginal discharge during pregnancy, emphasizing the urgency of enhanced screening and intervention strategies to improve maternal and neonatal health outcomes.