Diagnostic Screening and Treatment of Curable STIs in Pregnancy and Impact on Pregnancy Outcomes

1265

Dorothy C Nyemba[1,2], Alex de Voux[2], Rufaro Mvududu[2], Remco P.H Peters[3], Sinead Delany-Moretlwe[1], Leigh F. Johnson[6], Thomas J. Coates[5], Landon Myer[2], Dvora Leah Joseph Davey[2,4,5]

[1]Wits RHI, University of the Witwatersrand, Johannesburg, South Africa, [2]Division of Epidemiology and Biostatistics, School of Public Health, University of Cape Town, South Africa [3]World Health Organization, Global HIV, Hepatitis and STIs Programmes [4]Department of Epidemiology, Fielding School of Public Health, University of California Los Angeles, Los Angeles, California, United States of America [5]Division of Infectious Diseases, David Geffen School of Medicine, University of California Los Angeles, Los Angeles, California, United States of America [6]Centre for Integrated Data & Epidemiological Research, School of Public Health, University of Cape Town, Cape Town, South Africa

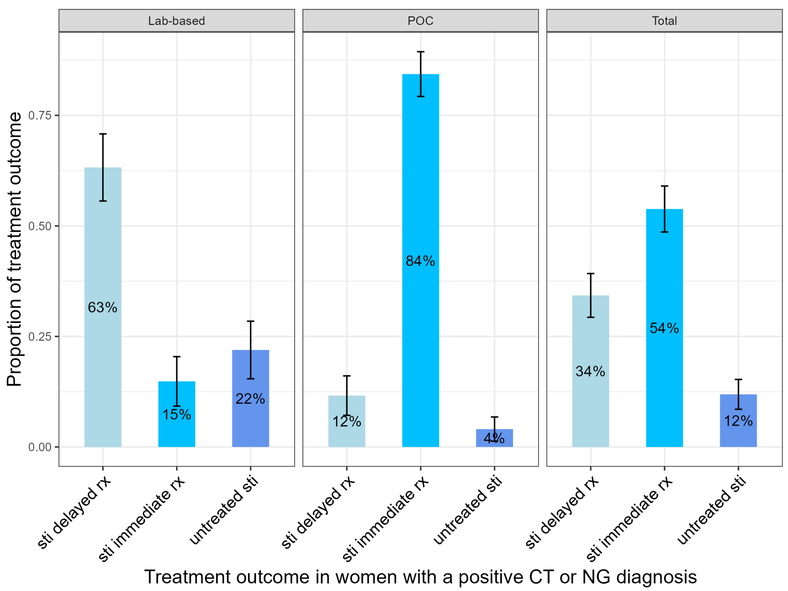
BACKGROUND

- Chlamydia [CT] and Gonorrhoea [NG] during pregnancy are associated with adverse pregnancy outcomes.
- We evaluated the impact of diagnosing and treating CT and NG during pregnancy on adverse pregnancy outcomes among women in a HIV pre-exposure prophylaxis (PrEP) cohort study in Cape Town, South Africa.

METHODS

- Enrolled eligible women >15 years, attending first antenatal care (ANC) visit, without HIV, received HIV prevention counselling, diagnostic testing with Gene-Xpert (as point-of-care) (Aug 2019-Nov 2020) or laboratory-based (Dec 2020-Oct 2021).
- Women with a positive CT or NG diagnosis received treatment.
- Oral PrEP (TDF/FTC) was offered at enrolment & quarterly visits.
- We compared composite outcome (including all) and each adverse outcome: pregnancy loss (miscarriage [≤20 weeks] or stillbirth [>20 weeks]) and birth outcomes (low birthweight (LBW) [<2500grams], preterm birth (PTB) [<37weeks] and small for gestational age (SGA) [<10th percentile] among women diagnosed with or without CT/NG at study enrolment and time to treatment of the infection.
- Logistic regression models assessed the association between CT/NG diagnosis, time to treatment (immediate ≤7days, delayed >7days) and adverse pregnancy outcomes adjusting for *a priori* confounders (maternal age, relationship status, gravidity and gestational age).

RESULTS

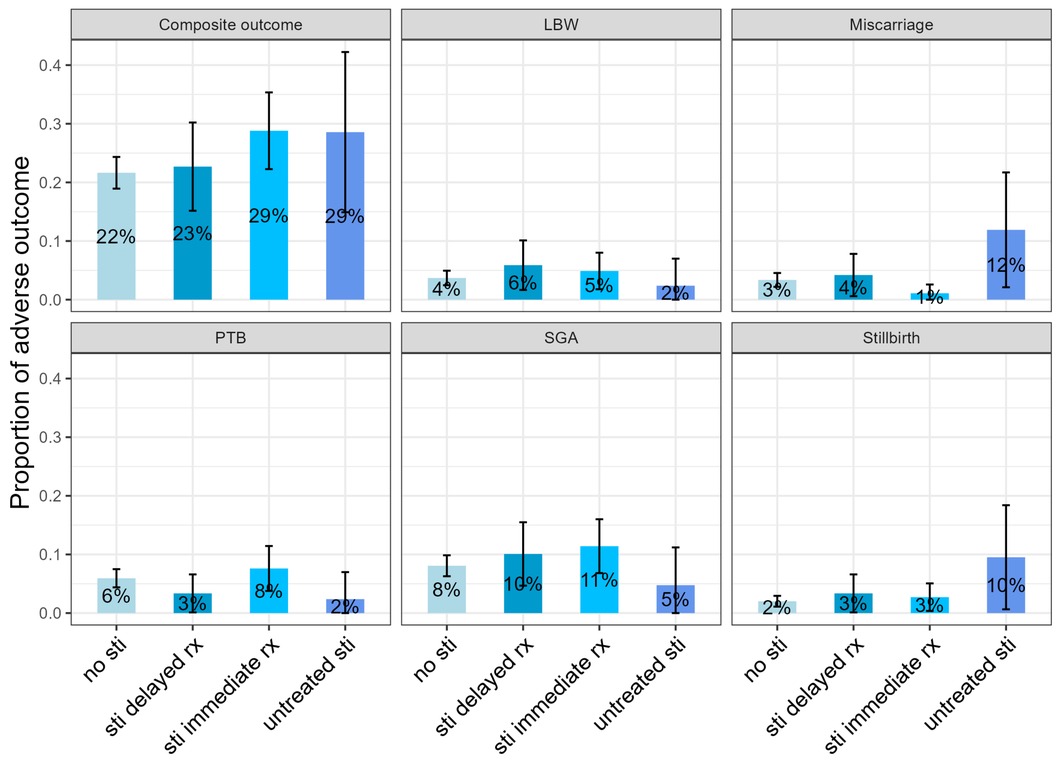


Abbreviations: Lab-based - laboratory-based, POC - point-of-care; rx - treatment, sti - sexually transmitted infection

Figure 1: Treatment outcome among women who had a positive CT or NG diagnosis at enrolment

Our findings suggest that integrating routine POC STI testing and rapid treatment in ANC could play a vital role in reducing pregnancy complications and adverse birth outcomes.

Larger trials with early pregnancy enrolment are needed to establish causal relationships.



Abbreviation: LBW - low birthweight, PTB - preterm birth, SGA - small for gestational age, rx - treatment, sti - sexually transmitted infection

Figure 2: Prevalence of adverse pregnancy and birth outcomes by CT/NG diagnosis and treatment status

RESULTS

- Among 1306 pregnant women enrolled, 1261 (97%) had CT/NG test at enrolment and a pregnancy outcome recorded.
- At baseline, median age was 26 years (IQR: 22-31) and median gestational age was 22 weeks (IQR: 15-31)
- Of the 1261 women, the prevalence of CT/NG at enrolment was 28% (24% for CT and 8% for NG).
- Of those diagnosed: **Figure 1**
  - 54% received immediate treatment;
  - 34% delayed treatment with median time to treatment 28 days (IQR: 15–57 days)
  - 12% were not treated during pregnancy.
- Treatment outcomes were different between POC and lab-based testing, **Figure 1**
- Proportions of composite adverse outcome did not differ by timing of CT/NG treatment, **Figure 2.**
- A substantial proportion of pregnancy loss (miscarriage and stillbirth) were among women with untreated CT/NG.
- Untreated CT/NG was associated with increased adjusted odds of pregnancy loss (aOR: 4.63, 95% CI: 1.63-13.16) vs. STI with immediate treatment and (aOR: 3.89, 95% CI: 1.51-9.97) vs. no STI at baseline.

CONCLUSIONS

- In this cohort study of pregnant women without HIV, we observed high prevalence of CT/NG infections at enrolment.
- POC testing showed potential advantages, with a higher proportion of women receiving immediate treatment compared to laboratory-based testing.
- Time to treatment was not associated with composite adverse pregnancy and birth outcome.
- In sub-group analysis, untreated CT/NG during pregnancy increased the odds of experiencing a miscarriage or stillbirth compared to women who had immediate treatment or to those without CT or NG at enrolment .

ADDITIONAL KEY INFORMATION

Author email: dnmachemedze@wrhi.ac.za

Funding and Grants: Thank you to NIMH and Fogarty Intl Center for funding support (R01MH116771; K01TW011187)

Acknowledgements: We thank the participants in the PrEP-PP study and study staff in Cape Town, South Africa.

University of the Witwatersrand WITS RHI

School of Public Health and Family Medicine
Isikolo Sempilo Yoluntu kunye Namayeza Osapho
Departement Openbare Gesondheid en Huisartskunde
UNIVERSITY OF CAPE TOWN