EFFECT OF ANTENATAL POINT-OF-CARE SCREENING AND TREATMENT FOR CHLAMYDIA AND GONORRHOEA ON NEONATAL CONJUNCTIVITIS AND PNEUMONIA: PRAGMATIC CLUSTER-RANDOMISED CROSSOVER TRIAL IN PAPUA NEW GUINEA

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Background:
Chlamydia trachomatis (CT) and *Neisseria gonorrhoeae* (NG) cause neonatal conjunctivitis and CT can cause pneumonia. Antenatal screening and treatment for CT/NG are conducted in several countries to prevent neonatal disease. The objective of this study was to evaluate the effect of an antenatal screening intervention on neonatal conjunctivitis and pneumonia.

Methods:
The Women And Newborn Trial of Antenatal Interventions and Management (WANTAIM) was a randomised cluster crossover trial in Papua New Guinea. We conducted a substudy in 5/10 clusters (July 2017-August 2021). The intervention was point-of-care screening (GeneXpert) and treatment for CT, NG, *Trichomonas vaginalis* and bacterial vaginosis at three antenatal visits, the last at 34-36 weeks. The control group received syndromic management. Eye and/or nasal swabs were collected from babies at three visits up to 6 weeks after birth. The primary outcome was clinically diagnosed conjunctivitis or moderate/severe pneumonia. A secondary outcome was PCR-positive CT/NG. Analysis was by intention-to-treat, accounting for phase and cluster.

Results:
We enrolled 2054 newborns (1038 intervention; 1016 control). By 6 weeks, 184 babies had a clinical outcome (168 conjunctivitis, 17 pneumonia, 1 with both); intervention 7.9% (n=82), control 10.0% (n=102) (relative risk 0.86, 95% CI 0.50, 1.48). Among babies with conjunctivitis, 14/168 (8.3%) had CT and 3/168 (1.8%) had NG in an eye swab. Among babies with pneumonia 1/17 (5.9%) had CT in a nasal swab. By 6 weeks, 133/2054 babies, irrespective of clinical outcome, had PCR-positive CT (n=102) or NG (n=38) (7 had both); 4.3% (n=45) in intervention and 8.7% (n=88) in control groups. The relative risk of CT/NG detection was 0.38 (95% CI 0.04, 3.95).

Conclusion:

This is the first randomised trial to evaluate effects of antenatal screening and treatment on CT/NG-associated neonatal outcomes; the small number of clusters limited statistical power. The intervention might reduce clinical outcomes and PCR-positive CT/NG.

Disclosure of Interest Statement:
Cepheid (Sunnyvale, CA, USA) contributed diagnostic consumables at subsidised cost. No authors have any other interests to disclose.

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