RANZCOG Annual Scientific Meeting 2022 GOLD COAST
Transformation: Making Waves

Preventing Postpartum Infection after Operative Vaginal Delivery:

Is a single dose of prophylactic antibiotics effective?

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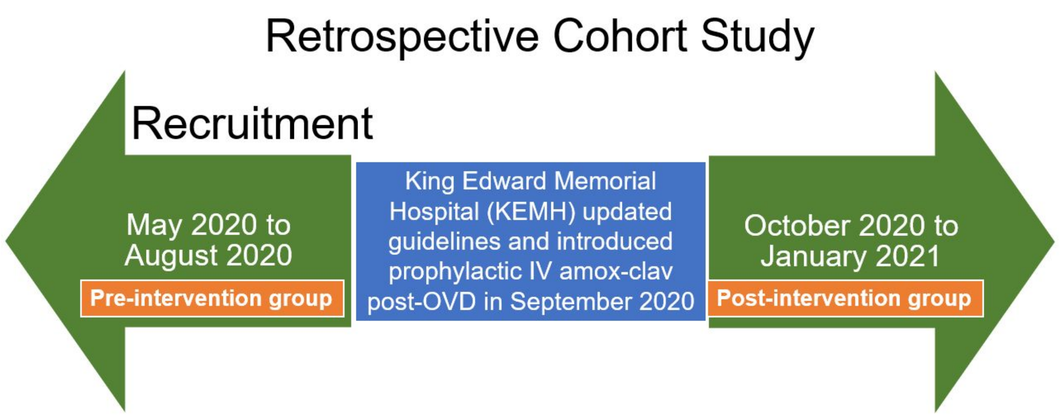
Introduction

- Operative Vaginal Delivery (OVD) accounts for at least 2% (approximately 2.7 mithe llion) of world's annual births[1].
- Rate of infection post-OVD is 16% (~432,000 deliveries worldwide)[1].
- OVD is associated with an increased risk of postpartum (PP) infection due to[2]:
  - Higher rates of vaginal tears
  - Additional vaginal examinations
  - Instrumental insertion ithe nto vagina
  - Routine bladder catheterisation
  - Difficulty sustaining aseptic field and technique during delivery
- The administration of prophylactic antibiotics to reduce the risk of PP infection post-OVD has been **contentious** over the past decades.
- **ANODE trial** recommended administration of prophylactic intravenous (IV) amoxicillin 1g with clavulanic acid 200mg (amox-clav) after OVD as it **reduces infection rates by 56%** compared to the group not receiving the antibiotic (RR 0.58)[2].
- Following the ANODE trial, RANZCOG and eTG updated their guidelines in April 2020 to incorporate a single dose of prophylactic IV amox-clav post-OVD.

Objectives

The is an audit aimed to **explore the efficacy of IV amox-clav in preventing maternal infection** up to six weeks post-OVD and whether these outcomes were similar to the ANODE trial **performed at the state-wide tertiary maternity hospital in Western Australia**.

Methodology



- Study data of eligible patients were collected via the REDCap tool.
- Eligible participants were contacted at least six weeks after the delivery and asked about antibiotic prescription post-delivery and whether they developed an infection up to six weeks postpartum.
- Data analysis was performed via SPSS version 27 software.
- This study was approved by our hospital's ethics committee.

Inclusion criteria
- ≥ 18 years of age
- Able and willing to give consent
- Underwent OVD at ≥ 36 weeks gestation

Exclusion criteria
- Attempted or unsuccessful OVD which progressed to caesarean birth
- Any clinical indication for antibiotic administration after delivery, such as empirical IV antibiotics (metronidazole, gentamicin and cefazolin or amoxicillin) for suspected chorioamnionitis, sepsis, third- or fourth-degree perineal tears.
- Patients who declined participation or who were lost to follow up.

References
1. *Berghella V, Bellussi F. Antibiotics for operative vaginal delivery: practice-changing data. Lancet. 2019;393(10189):2361-2.*
2. *Knight M, Chiocchia V, Partlett C, Rivero-Arias O, Hua X, Hinshaw K, et al. Prophylactic antibiotics in the prevention of infection after operative vaginal delivery (ANODE): a multicentre randomised controlled trial. Lancet. 2019;393(10189):2395-403.*

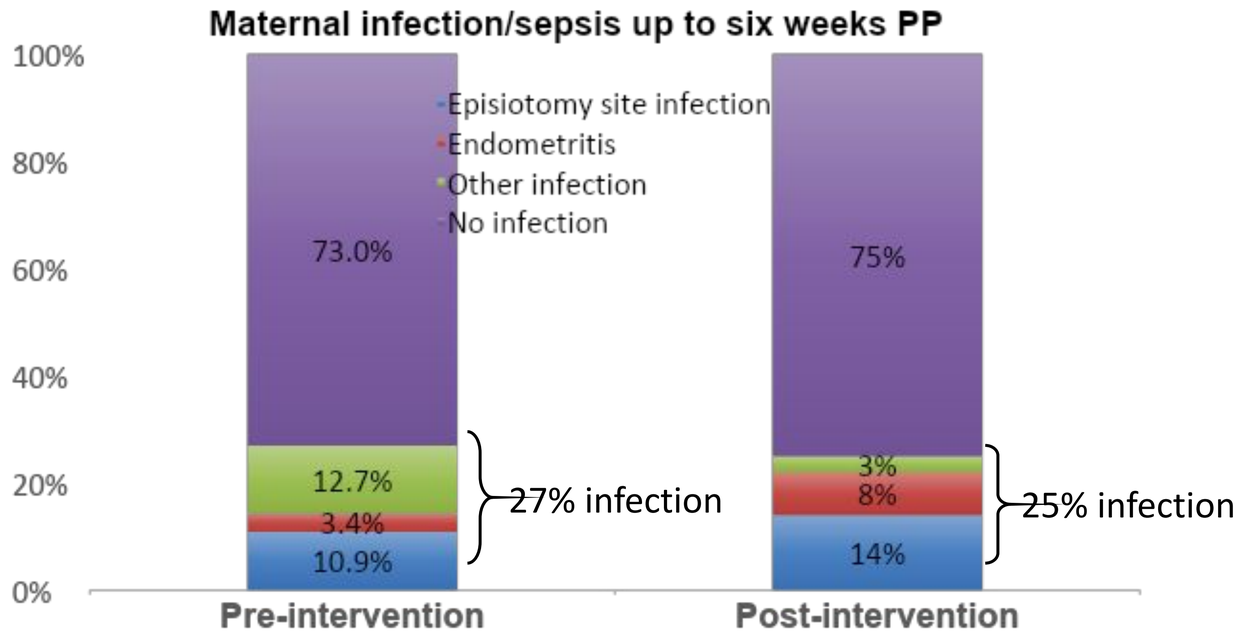
Disclosure: none

Abbreviations: RANZCOG: Royal Australia and New Zealand College of Obstetrics and Gynaecology. eTG: electronic therapeutics guidelines. REDCap: Research Electronic Data Capture

Results

- Demographic characteristics were similar between pre- and post-intervention groups.

	Pre-intervention cohort	Post-intervention cohort
Participants	174	100
No PP infection	127	75
PP infection	**47**	**25**



- The prevalence of maternal infection or sepsis up to six weeks PP in patients who underwent OVD was **27.0%** in the pre-intervention group and **25.0%** in the post-intervention group (unadjusted OR 0.91, 95% CI 0.52-1.60, p=0.751).
- Results were similar between both groups (aOR 0.90, 95% CI 0.50-1.60, p=0.708) after adjustment for significantly contributing factors including BMI>30 kg/m2 (aOR 2.31, 95% CI 1.08-4.97, p=0.031) and episiotomy (aOR 3.37, 95% CI 1.44-7.88, p=0.005) which were both significant risk factors for postpartum infection.

Summary of hospital readmission rates due to infection

	Pre-intervention	Post-intervention
Hospital readmission rates. N (%)	5 (2.9%)	3 (3%)
OR (95% CI)	1.00	1.05 (0.24 -0.47)
No. of days of readmission	1 – 6 days	2 – 3 days
Infection causes for each patient	• Sepsis, endometritis • Endometritis & RPOC, requiring D&C • Episiotomy site infection • Vulval haematoma • Endometritis	• Sepsis, endometritis, UTI • Endometritis • Endometritis (Week 1), mastitis (week 3)

Discussion & Conclusion

- Implementation of prophylactic IV amox-clav **did not demonstrate a clear benefit in preventing or reducing PP infections** in this study.
- The rate of infection-related hospital admission rates was unchanged between both groups. However, the length of stay in readmission was shorter in the post-intervention group.
- Strength: **first pilot study** conducted on the efficacy of preventing PP infection up to six weeks post-OVD based on the recommendations set out by the ANODE trial.
- Limitations: limited sample size, recall ability of patients with PP infections.
- This study serves as a **preliminary evaluation** of the impact and change in local practice based on the results and findings of one trial.
- Point of interest: **Choice of prophylactic antibiotics** – IV amox-clav rather than the widely utilised IV cefazolin, recommend considering IV cefazolin as one of the treatment arms in a future trial.