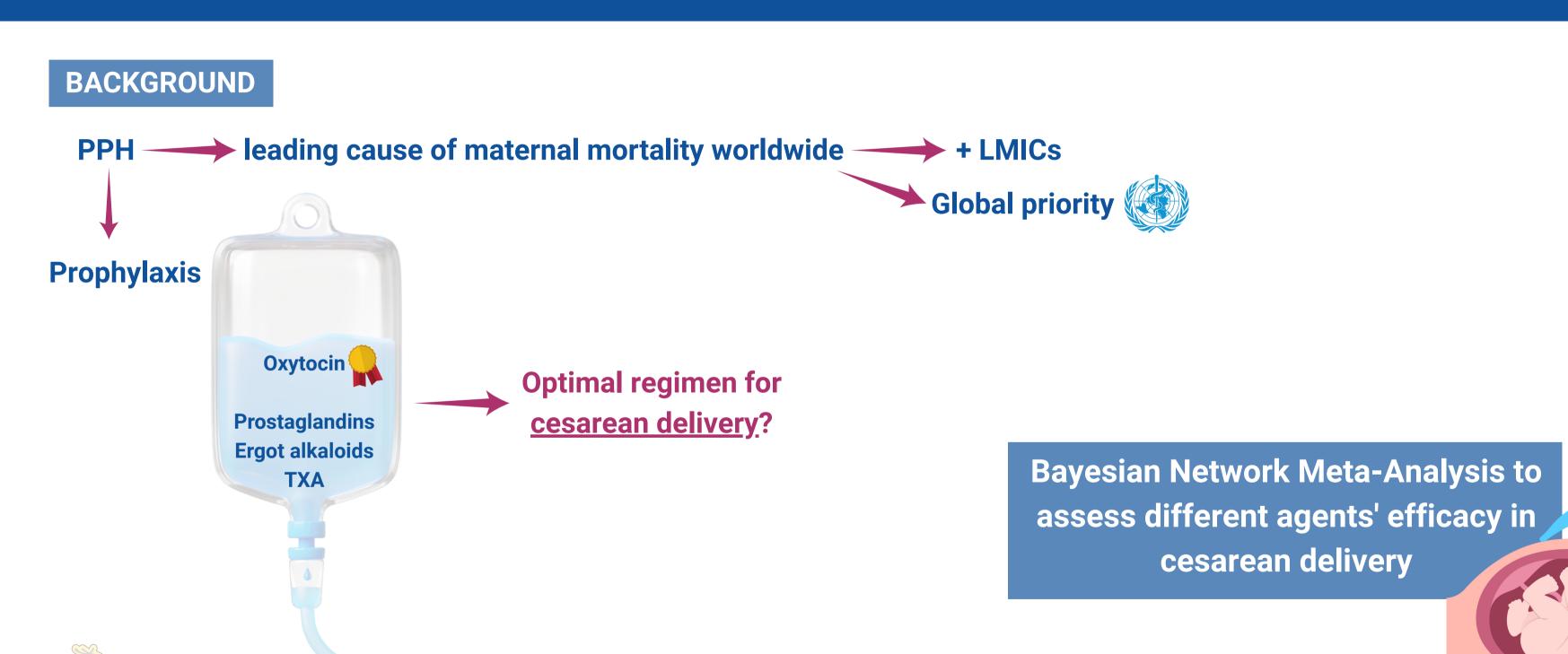
Prophylactic Strategies for Prevention of Postpartum Hemorrhage in Cesarean Delivery

A Bayesian Network Meta-analysis of Randomized Controlled Trials

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METHODS



- Only RCTs
- Adult pregnant women
- Undergoing cesarean delivery
- Any prophylatic strategy for PPH











- PPH incidence (≥ 1000mL after cesarean delivery)
- Need for blood transfusion
- Need for additional use of uterotonics
- Intraoperative blood loss
- Need for additional surgical procedures
- Hysterectomy incidence
- Any adverse events
- Maternal mortality

Sensitivity analyses

- High-risk patients
- LMICs
- RCTs with low risk of bias



26 countries 12 LMICs 44,817 patients 167 RCTs 2,657 PPH events 2 cases of mortality

Oxytocin + TXA Carbetocin

Most effective strategies

Same results after sensitivity analyses

High-risk patients
LMICs
RCTs with low risk of bias

| Compared with Oxytocin | N. of studies | Events | Total | Weight | RR | 95% CI | Postpartum Hemorrhage | |
|--|---------------|--------|-------|--------|------|--------------|-------------------------------|--|
| Oxytocin + TXA | 24 | 806 | 5495 | 27.3% | 0.44 | [0.33; 0.58] | | |
| Carboprost | 2 | 7 | 136 | 3.9% | 0.45 | [0.15; 1.30] | | 0.85 0.73 0.69 0.58 0.40 0.36 0.29 0.09 |
| Cabertocin | 20 | 111 | 2045 | 22.3% | 0.54 | [0.37; 0.74] | | |
| Oxytocin + Carboprost | 2 | 23 | 76 | 6.6% | 0.59 | [0.26; 1.30] | | |
| Oxytocin + Misoprostol | 11 | 88 | 1193 | 16.9% | 0.73 | [0.46; 1.10] | | |
| Oxytocin + Ergot Alkaloids | 3 | 68 | 348 | 10.6% | 0.75 | [0.42; 1.40] | | Ostocin x Daytocin x C x x x x x x x x x x x x x x x x x |
| Misoprostol | 7 | 37 | 481 | | | [0.47; 1.40] | | Ostocin * De ostocin * Co. * Mi. * Er. Ostocin |
| • | | | | | | | | × 7 5 10 × 6 × 11 × 6 × 10 1 |
| Oxytocin: Events = 1517 Total = 9050 | | | | | | | 0.2 0.5 1 2 5 | 4 4 760 150p 80t |
| A | | | | | | Fav | ors Treatment Favors Oxytocin | B Carboprost Of Alkalojos |

Figure 1 Forest plot (A) and SUCRA heatmap (B) of network meta-analysis displaying the comparative effects of various prophylactic therapies evaluated for PPH.

| Compared with Oxytocin | N. of studies | Events | Total | Weight | RR | 95% CI | Blood Transfusion |
|--|---------------|--------|-------|--------|------|---------------|-------------------------|
| Oxytocin + Ergot Alkaloids + TXA | 3 | 4 | 180 | 1.6% | 0.07 | [0.01; 0.32] | |
| Oxytocin + Misoprostol + TXA | 2 | 1 | 133 | 0.5% | 80.0 | [0.00; 0.68] | |
| Cabertocin | 29 | 69 | 2741 | 18.6% | 0.24 | [0.16; 0.35] | - |
| Oxytocin + TXA | 41 | 145 | 6395 | 43.1% | 0.33 | [0.33; 0.45] | ⊢ |
| Oxytocin + Ergot Alkaloids | 8 | 41 | 629 | 6.3% | 0.34 | [0.16; 0.75] | |
| Oxytocin + Misoprostol | 23 | 49 | 2739 | 14.2% | 0.39 | [0.24; 0.62] | - |
| Oxytocin + Carboprost | 2 | 2 | 69 | 1.0% | 0.42 | [0.05; 2.90] | |
| Misoprostol | 15 | 51 | 1317 | 9.8% | 0.52 | [0.28; 0.93] | |
| TXA | 2 | 204 | 5775 | 2.7% | 0.82 | [0.82; 9.70] | •—— |
| Placebo | 1 | 232 | 5470 | 2.2% | 0.94 | [0.94; 14.00] | + |
| Oxytocin: Events = 615 Total = 11107 | | | | | | | 0.01 0.1 1 10 10 |
| A | | | | | | Fav | ors Treatment Favors Ox |

Figure 2 Forest plot (A) and SUCRA heatmap (B) of network meta-analysis displaying the comparative effects of various prophylactic therapies evaluated for need for blood transfusion.

| Compared with Oxytocin | N. of studies | Events | Total | Weight | RR | 95% CI | Additional Uterotonics | | | | | | | | |
|---|---------------|--------|-------|--------|------|--------------|--|----------------|--------|-------|----------------------|----------|-----|--------|--------------|
| Oxytocin + TXA | 24 | 806 | 5495 | 27.3% | 0.44 | [0.33; 0.58] | - | 0.00 | 0.04 | 0.56 | 0.55 | 0.5 | | 2 0 52 | 2 052 030 |
| Carboprost | 2 | 7 | 136 | 3.9% | 0.45 | [0.15; 1.30] | | 0.98 | 0.84 | 0.56 | 0.55 | 0.52 | 1 | 0.52 | 2 0.52 0.39 |
| Cabertocin | 20 | 111 | 2045 | 22.3% | 0.54 | [0.37; 0.74] | | | | | | | | | |
| Oxytocin + Carboprost | 2 | 23 | 76 | 6.6% | 0.59 | [0.26; 1.30] | | | | | | | | | |
| Oxytocin + Misoprostol | 11 | 88 | 1193 | 16.9% | 0.73 | [0.46; 1.10] | - 11 | O _t | Con | 04 | Oto | 04 | | G. | Ga Ota |
| Oxytocin + Ergot Alkaloids | 3 | 68 | 348 | 10.6% | 0.75 | [0.42; 1.40] | | 276 | OCIA O | Sto M | OCIA STO | Cin Ste | Cir | 10 | × tooprocx |
| Misoprostol | 7 | 37 | 481 | | | [0.47; 1.40] | | | × | Sor | ×° | 7500 POS | A | ×1, | * Misoprosto |
| Oxytocin: Events = 2699 Total = 11820 | | | | | | Fav | 0.2 0.5 1 2 5 rors Treatment Favors Oxytocin | В | | 7/40 | 16/6/ _{5×7} | Dros; | × | | OSTA |

Figure 3 Forest plot (A) and SUCRA heatmap (B) of network meta-analysis displaying the comparative effects of various prophylactic therapies evaluated for need for use of additional uterotonics.

annual ?

NO INCREASE IN MEDICATION ASSOCIATED COMPLICATIONS.

DISCUSSION AND CONCLUSION

Oxytocin + TXA
Carbetocin

PPH
Need for blood transfusion
Need for additional uterotonics

Other interventions

Need for blood transfusion

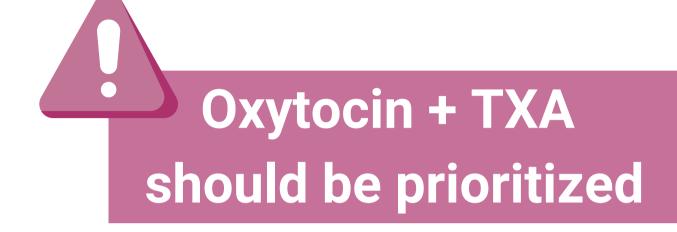
Sensitivity analysis

= results

Considerations:



Availability
Cost-effectiveness
Logistical constraints



FUTURE DIRECTIONS

Oxytocin/TXA vs Carbetocin
Policy changes
Refine global guidelines

