Antenatal Corticosteroids and Neonatal Outcomes in Twins: a Systematic Review & Meta-analysis

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Background:

- Antenatal corticosteroids (ACS) reduce the incidence of mortality, respiratory morbidity, and other complications in premature singleton infants.
- Current guidelines recommend pregnancies at risk of preterm delivery (usually <34 weeks) receive ACS.
- In twin pregnancies, treatment is based on consensus or limited evidence.

Methods:

- MEDLINE, PubMed, Embase, and the Cochrane library were searched.
- Primary outcomes were neonatal mortality (NM) & respiratory distress syndrome (RDS).
- Secondary outcomes were: intraventricular haemorrhage (IVH; grade III or higher), bronchopulmonary dysplasia (BPD), necrotising enterocolitis (NEC; stage II or higher), periventricular leukomalacia (PVL), and retinopathy of prematurity (ROP; grade III or higher).

Results:

- 18 studies met the inclusion criteria. Risk of bias was determined using ROBINS-I tool.
- ACS administration was associated with lower odds of NM (adjusted OR = 0.59, 95% CI = 0.43 to 0.80; five studies, 20312 neonates) and RDS (adjusted OR = 0.70, 95% CI = 0.57 to 0.86; seven studies, 20628 neonates), **as seen in Figures 1 & 2.**
- Results were inconclusive for IVH, BPD, NEC, PVL and ROP.

Conclusions:

- Evidence from non-randomized studies suggests ACS treatment is associated with a lower incidence of NM and RDS in twins.
- Including twins in future randomized trials would be useful to provide strong evidence on the impact of ACS in this high-risk group.

Figure 1: Forest Plot for Neonatal Mortality

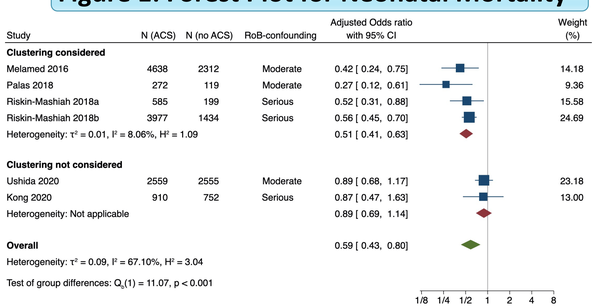
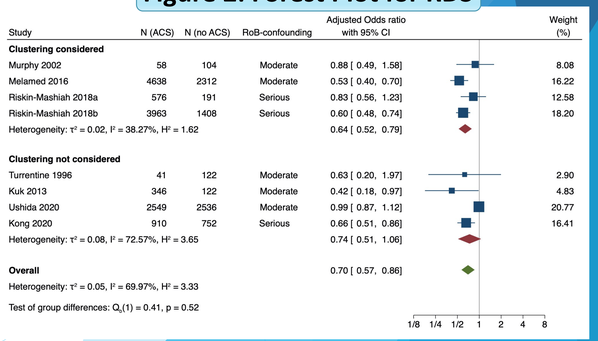


Figure 2: Forest Plot for RDS



Since abstract submission, this work has been accepted by the Journal of Obstetrics & Gynaecology (the green journal)