

Preterm prelabor rupture of membranes following endoscopic surgery - bacterial profile

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Aim

To evaluate the bacterial profile and antibiotic resistance (AR) in pregnancies complicated by preterm prelabor rupture of membranes (PPROM) following fetoscopic laser surgery (FLS) for twin-to-twin transfusion syndrome (TTTS) or bipolar cord coagulation for selective fetal reduction (SFR) in complicated monochorionic pregnancies.

Methods

Retrospective, cross-sectional analysis of all women who experienced PPRM before 34 weeks after undergoing FLS or SFR, between September 2018 and January 2024 at a single tertiary medical center. Cultures were obtained from cervical swabs and urine samples upon admission after PPRM and from placental tissues at delivery to assess bacterial growth and AR.

The control group consisted of 31 women with monochorionic and dichorionic twin pregnancies and PPRM < 34 GW without fetal intervention.

Results

Among 126 pregnancies that underwent FLS or SFR, 39 (30.9%) experienced PPRM before 34 GW. The post-intervention PPRM group (n=32 following exclusion) showed a significantly higher rate of positive cultures compared to the control group (41.9% vs. 13.9%, OR: 4.4, 95% CI: 2.15–8.98, $p < 0.01$). Ampicillin/Macrolide resistance was significantly higher in the post-intervention group compared to the control group (56.2% vs. 12.9%, OR: 5.13, 95% CI: 1.66-15.8, $p < 0.01$). Positive urine cultures following PPRM were notably more frequent in the post-intervention group compared to the control group (71.9% vs. 15.6%, OR: 6.4, 95% CI: 2.2–18.2, $p < 0.01$). Ampicillin/Macrolide resistance in positive urine cultures was also significantly more common in the post-intervention group compared to controls (37.5% vs. 3.1%, OR: 14.1, 95% CI: 1.75-11.1, $p = 0.01$). No cases of EOS were identified in the post-intervention group.

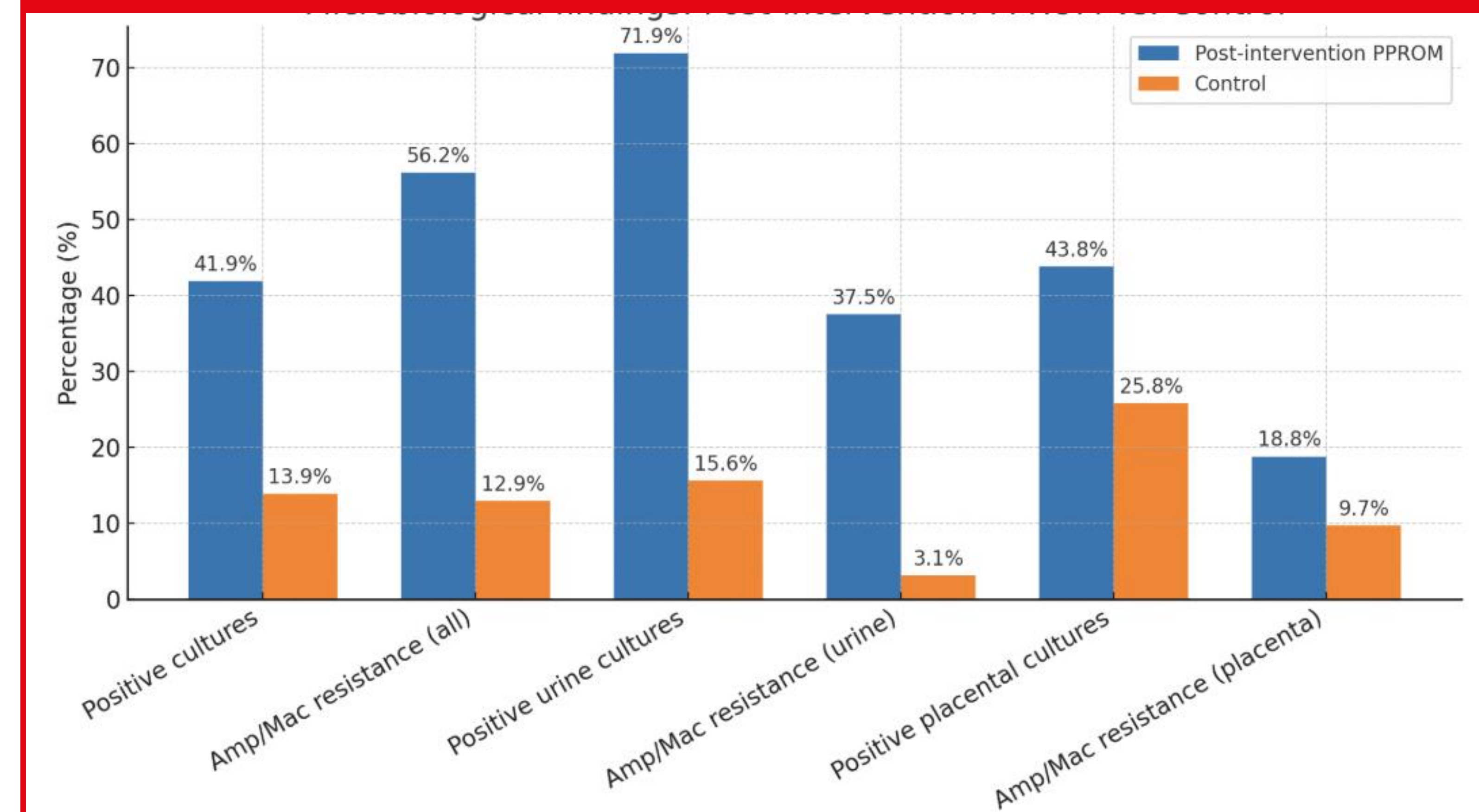


Figure 1 - Microbiological findings: Post-intervention PPRM vs. Control

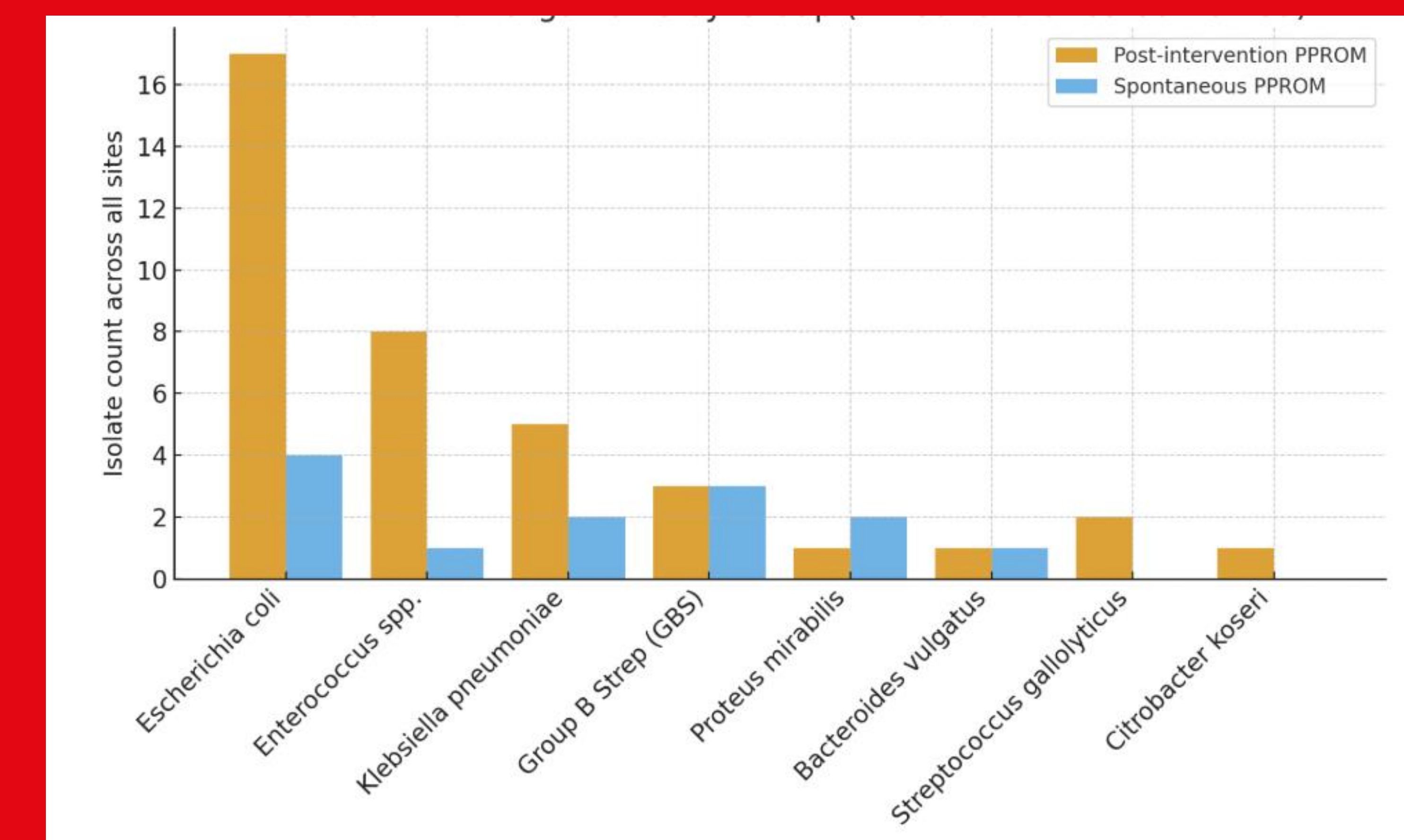


Figure 2- Most Common Organisms by Group

Conclusion

Complicated monochorionic pregnancies with PPRM following endoscopic intervention (FLS/SFR) are at increased risk for antibiotic-resistant infections, highlighting concerns about the adequacy of standard antibiotic regimens.