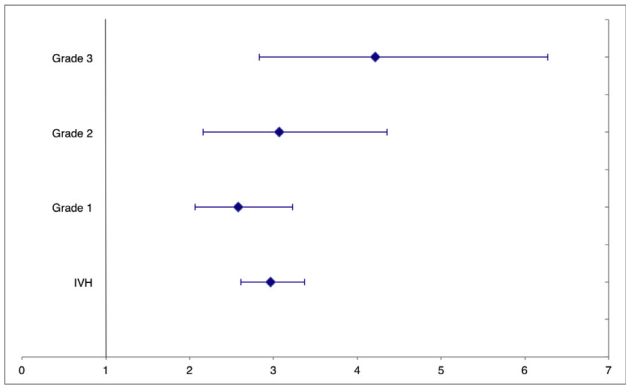
and infants born later in gestation. IVH screening in infants born <30 weeks and in others with elevated risk improves early therapeutic potential. Our results underscore the importance of ASD screening in children with IVH and present considerable opportunity for interventions aimed at maximizing neurocognitive development and functional attainment.



212 Fusobacterium nucleatum colonizes the placenta after oral inoculation in a gnotobiotic mouse model

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OBJECTIVE: Periodontitis is associated with an increased risk of PTB, although the causal mechanism is poorly characterized. Our recent metagenomic studies of the placenta revealed that it harbors a unique microbiome most similar to the mouth. Fusobacterium nucleatum, a microbe native to subgingival plaques, is both associated with periodontal disease and PTB. Collectively, this has lead to the hypothesis that the placenta is seeded hematogenously and that this process is selective to and facilitated by species native to the oral cavity. We therefore used a germ-free gnotobiotic mouse model to interrogate this potential mechanism of placental colonization.

STUDY DESIGN: Pregnant germ-free (GF) dams (n=3 per group) were inoculated with a simple microbial community of Lactobacillus reuteri & Fusobacterium nucleatum 4 days (4d) prior to anticipated delivery. Bacteria were delivered by tail vein injection (IV) or oral gavage (Oral). For a subset of dams, the oral cavity was pretreated prior to oral gavage with 2,4,6-Trinitrobenzenesulfonic acid (Oral+TNBS) to promote mucosal inflammation. Maternal and fetal tissues were collected by sterile Cesarean 1d prior to anticipated delivery. Microbial DNA was extracted and subjected to qPCR to quantify cecal and placental colonization.

RESULTS: The previously germ free maternal cecum was successfully recolonized for all treatment groups (ANOVA p=0.0001, all vs. GF $p<0.05$). As anticipated, IV administration of bacteria resulted in placental colonization similar to amounts found in control (SPF) mice ($p<0.05$). Interestingly, oral gavage also resulted in placental colonization at levels similar to both the IV and SPF group. qPCR with species specific primers revealed that placental colonization by bacteria either by IV or by oral gavage was primarily due to the presence of F. nucleatum (ANOVA p=0.029) but not L. reuteri (a gut commensal).

CONCLUSION: These data show that oral gavage of F. nucleatum to a GF dam results in placental colonization at levels similar to non-germ free mice. We speculate this is due to hematogenous dissemination of bacteria from the oral mucosa, given findings among oral gavage groups. Interestingly, this process appears to be selective for certain bacterial species with the inherent capacity to open up endothelial gap junctions (i.e., F. nucleatum).

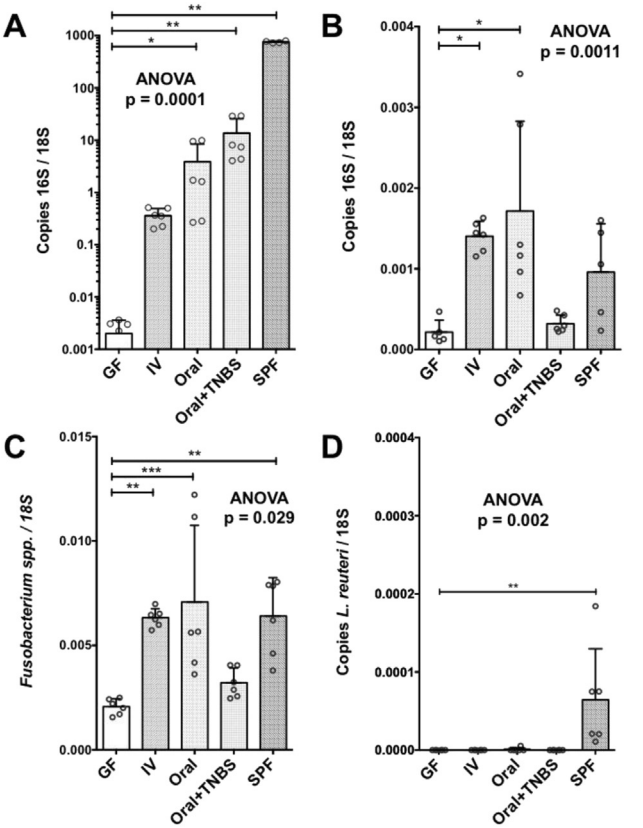

Figure. Oral gavage of a simple bacterial community results in species selective placental colonization. qPCR was used to quantify the presence of bacteria in the maternal cecum (A) or placenta (B-D) after bacterial innoculation. Bacteria colonized the placenta after tail vein (IV) or oral gavage but not by oral gavage with TNBS pretreatment (B). Only *F. nucleatum* (C), but not *L. reuteri*, could be detected by qPCR using species specific primers (*$p<0.05$, **$p<0.01$,***$p<0.001$).

213 Intrapartum risk stratification for early-onset neonatal sepsis

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OBJECTIVE: Intrapartum chorioamnionitis, a diagnosis usually prompted by maternal fever and often based on soft clinical findings, leads to neonatal sepsis workup, antibiotic administration and longer hospital stay. Given that most neonates born to women with this diagnosis do not actually have an infection, a more objective diagnostic approach is needed to prevent overtreatment. Our aim was to develop a multivariable approach to improve risk-stratification of early onset neonatal sepsis (EOS).

STUDY DESIGN: This is a secondary analysis of a multicenter observational cohort. Trained and certified research personnel abstracted the maternal and neonatal records of women delivering at 25