frozen. Frozen aliquots will be shipped to the Metabolite Profiling Facility at Purdue University and the Mayo Clinic Department of Laboratory Medicine and Pathology for SCFA and bile acid measurements, respectively. Analysis of fecal microbiota will be performed in the research laboratory of Dr David Nelson in collaboration with bioinformatics expertise affiliated with the Nelson lab. Colonic transit time will be measured with the previously validated method using radio-opaque markers. Generalized linear models will be used as the analysis framework for comparing study endpoints among groups. RESULTS/ANTICIPATED RESULTS: This study seeks to examine the innovative concept that specific microbial signatures are associated with increased fecal excretion of organic acids to provide unique insights on a potential mechanistic link between altered intraluminal organic acids and fecal microbiota. DISCUSSION/SIGNIFICANCE OF IMPACT: Results may lead to development of targets for novel therapies and diagnostic biomarkers for IBS, emphasizing the role of the fecal metabolome.

2006

Formative evaluation and adaptation of a safe sleep intervention for infants in rural underserved communities

Rosemary Nabaweesi[1], Mary Aitken[1], Keneshia Bryant-Moore[2] and Geoffrey M. Curran[3]

[1] University of Arkansas Translational Research Institute; [2] University of Arkansas for Medical Sciences; [3] Veterans Affairs, University of Arkansas for Medical Sciences

OBJECTIVES/SPECIFIC AIMS: This abstract describes a recently-funded 2 year study that aims to: (1) explore the community advisors' perspectives of the safe sleep intervention's acceptability, feasibility, and adaptability using focus groups and key informant interviews. (2) Adapt the selected safe sleep interventions (SSI) and identify promising implementation strategies to support it through an evidence-based quality improvement process with a multistakeholder group. METHODS/STUDY POPULATION: Background sudden unexpected infant death (SUID) is the leading cause of post-neonatal infant death in the United States. Sudden infant death syndrome (SIDS), accidental suffocation and strangulation in bed account for over 50% of SUID, leading to recommendations for supine sleep position and safer sleep environments for infants. However, despite significant reductions in SIDS after "back to sleep" and "safe to sleep" campaigns, significant racial and urban-rural disparities persist. In 2015, the rural-urban crude death rate ratio was 4:1 and Black infants are twice as likely to die from SUID as White infants. Adherence to safe sleep recommendations is highly variable and a number of hospital and community-based interventions have been suggested to improve knowledge and change parent behavior. Hospital programs to promote safe sleep education and policies may serve to educate families about safe sleep, but may not be uniformly available in rural and underserved areas. The AAP evidence-based safe sleep guidelines have demonstrated reductions in SIDS and SUID when child caregivers adhere to them. Community-based SSI, including safety baby showers, promote safe sleep practices, but barriers may exist for participation, especially in rural areas. Partnering with community groups serving a high risk area, we will explore the barriers and facilitators to more widespread safety baby shower (SBS) delivery/adoption in rural underserved communities (RUC). Observation of the evidence-based SBS as it is currently delivered, focus groups and key informant interviews will be conducted with program leaders and participants. Based on this knowledge and using an evidence-based development process, we will adapt the SBS and identify implementation strategies to support its uptake in RUC. RESULTS/ANTICIPATED RESULTS: We expect to develop a modified safe sleep intervention that reaches more expectant and new mothers is more efficient at delivering safe sleep guidelines to rural community members and can be more readily adopted and implemented by RUC. Supporting implementation strategies will be identified during the formative evaluation. DISCUSSION/SIGNIFICANCE OF IMPACT: Developing a safe sleep intervention adapted for the local context through a collective decision-making process between intervention experts and local community advisors will potentially improve safe sleep guideline delivery and adherence in RUC. The next study will pilot test the effectiveness of the adapted safe sleep intervention with identified supporting implementation strategies.

2066

Functional characterization of mutant BRCA1

John Barrows and David Long

University of South Carolina

OBJECTIVES/SPECIFIC AIMS: The objective of this work is to determine the mechanistic consequences of BRCA1 mutants in inter-strand crosslink (ICL) repair. METHODS/STUDY POPULATION: Our lab uses Xenopus egg extracts to study ICL repair. These extracts can be depleted of endogenous BRCA1 by immunoprecipitation. The goal of this work is to rescue endogenous depletion with in vitro translated, wild type BRCA1. Once achieved, we can supplement the depleted extract with BRCA1 mutants to access their function in ICL repair. RESULTS/ANTICIPATED RESULTS: We hypothesize that the BRCT and RING domain mutations will abrogate ICL repair, while mutations in the coiled coil region will not affect repair. DISCUSSION/SIGNIFICANCE OF IMPACT: These findings will have an immense impact on the understanding of BRCA1 domains. Importantly these results will spur personalized therapy of BRCA1 mutants by showing which domains are sensitive to cross-linking agents.

2408

Genital microbiomes of women with recurrent bacterial vaginosis and their regular male sexual partner

Christina A. Muzny, William J. Van Der Pol, Elliot J. Lefkowitz, Arindam Ghosh, Mei Li, David Redden, Xiangqin Cui and Jane Schwebke

University of Alabama at Birmingham

OBJECTIVES/SPECIFIC AIMS: Epidemiologic data suggest that BV is sexually transmitted with male partners colonized or infected with the responsible organism(s). The objective of this study was to compare the genital microbiota of women with recurrent BV and their regular male sexual partner using 16S rRNA gene sequencing and quantitative PCR targeting BV-candidate bacteria (*Gardnerella vaginalis*, *Atopobium vaginae*, BVAB1-3, Sneathia, Leptotrichia, and Megasphaera type 1). METHODS/STUDY POPULATION: Women with recurrent BV ($\geq$3 prior episodes, including a current episode) and their regular male partner participating in a BV treatment trial and providing genital specimens (women: vaginal; men: urethral, coronal sulcus, urine) at enrollment were included. Male specimens for each participant were pooled. 250 bp 16S rRNA V4 region PCR amplicons were sequenced and analyzed using the QIIME pipeline. Taxonomy was assigned using the RDP Classifier against a modified Greengenes database with additional vaginal taxonomies added. An average relative abundance cutoff of 0.5% was used for analysis. qPCR was also performed for specific BV-candidate bacteria. Spearman correlation coefficients were used to investigate associations between all genital bacteria in addition to BV-candidate bacteria between partnerships. To determine positive associations between partnerships, the Wilcoxon signed-rank test was used. RESULTS/ANTICIPATED RESULTS: In total, 45 partnerships were included. Mean partnership age was 31.3 (SD = 7.9), 91.1% partnerships were African-American. The majority of partnerships (70.0%) reported condomless sex during the past 3 months. Regarding 16S data, 37 genital bacteria had an average relative abundance of $\geq$0.5%. The average Spearman correlation across all 45 partnerships was 0.28 (SD = 0.27) (median = 0.27, minimum = $-$0.21, maximum = 0.84). Overall, a positive association of all genital bacteria existed across the partnerships ($p < 0.0001$). However, regarding specific BV-candidate bacteria, Spearman correlation tests for *G. vaginalis*, *A. vaginae*, *Prevotella bivia*, Megasphaera type 1, BVAB1, and BVAB2 were nonsignificant. In contrast, *Sneathia* spp. were positively correlated between partnerships ($r = 0.37$, $p = 0.01$). With regards to qPCR results, RNA Cq analyses provided significant evidence for a linear association between male and females for only *A. vaginae* ($r = 0.52$, $p = 0.006$). DISCUSSION/SIGNIFICANCE OF IMPACT: In monogamous heterosexual couples in which the female has BV, the vaginal microbiota of women and the penile/urine microbiota of men were significantly correlated, particularly with regards to *Sneathia* spp. and *A. vaginae*, supporting the hypothesis that BV-associated bacteria are exchanged during sex.

2543

High concentrations of CXCL12 decrease pancreatic adenocarcinoma growth

Emily Vonderhaar, Michael Dwinell, Ishan R. Roy, Donna M. McAllister and Michael B. Dwinell

Medical College of Wisconsin

OBJECTIVES/SPECIFIC AIMS: We hypothesized that CXCL12, as a biased dimer variant or secreted at dimer-dominant concentrations, would influence PDAC growth and progression. METHODS/STUDY POPULATION: PDAC cells were genetically manipulated to express dimer-promoting levels of CXCL12. These cells were studied in vitro or orthotopically implanted into the

https://doi.org/10.1017/cts.2018.78 Published online by Cambridge University Press