**PRESENTATION TIME: 4:45 PM – 4:55 PM**

**PRESENTER: Lisa Tian-Tian Zhang**

**DECREASED GUT MICROBIAL DIVERSITY IN KIDNEY TRANSPLANT RECIPIENTS WITH POST-TRANSPLANT DIARRHEA**

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**BACKGROUND**: Diarrhea is a common complication in kidney transplant recipients. 80% of post-transplant diarrhea cases, however, are of unknown etiology and most physicians attribute the diarrhea to immunosuppressing medications that are used to prevent kidney rejection. Little is known about the bacterial changes in post-transplant diarrhea. This project aimed to gain insight into the microbial changes in post-transplant diarrhea by unbiased characterization of the gut microbiota using 16S rRNA deep sequencing.

**METHODS:** 71 kidney transplant recipients were recruited and provided serial fecal specimens after transplantation. We profiled 199 fecal specimens from these 71 subjects using 16S rRNA deep sequencing of the V4-V5 hypervariable region. 29 specimens were associated with post-transplant diarrhea (Diarrhea Cohort) and 170 specimens were associated with no post-transplant diarrhea (No Diarrhea Cohort).

**RESULTS:** Microbial diversity was significantly lower in the Diarrhea Cohort than in the No Diarrhea Cohort (median Shannon diversity index 3.1 vs. 3.7, respectively, P=3e-05). At the genus level, *Ruminococcus* and *Dorea* were significantly higher in the No Diarrhea Cohort than in the Diarrhea Cohort (mean 0.051 vs. 0.017, qvalue=7E-04; mean 0.012 vs. 0.005, qvalue=3E-03, respectively), consistent with a previous pilot study (Lee et al. Transplantation 98(7):697-705, 2014). We also identified novel taxa including *Eubacterium*, *Anaerostipes*, and *Ruminiclostridium* as significantly higher in the No Diarrhea Cohort (qvalue<0.10), not previously reported in the pilot study.

**CONCLUSIONS:** We report a distinct gut microbial signature associated with post-transplant diarrhea. Elucidation of commensal bacteria may provide insight for targeted therapies for managing post-transplant diarrhea in kidney transplant recipients.

**CONTENT CATEGORY:** Translational science

**KEYWORDS:** *kidney transplantation, diarrhea, gut microbiota*