INTRODUCTION

The purpose of this study was to examine the differences in the urinary microbiome between patients with simple or low-risk (Bosniak I, II, IIF) renal cyst(s) and individuals with newly diagnosed, clear cell renal cell carcinoma (ccRCC).

METHODS

- 20 patients with renal cysts and 20 patients with ccRCC were prospectively evaluated.
- 9 patients with renal cysts had 2 mid-stream urine samples collected, one at the first clinic visit and the second at a median of 159 days later (range: 84-595 days).
- 9 patients with ccRCC had 2 mid-stream urine samples collected, one pre-operatively and the second post-operatively, at a median of 102 days later (range: 44-401 days).
- 16S rRNA sequencing of the urine samples yielded a number of amplicon sequence variants (ASVs) which was used to identify bacterial species and microbial richness.

RESULTS

- Patients with renal cysts were older and more often female when compared to those with ccRCC ($p < 0.01$) (Table 1).
- The mean number of ASVs, or bacterial richness, was found to be significantly decreased in the ccRCC group compared to those with renal cysts ($p < 0.01$) (Table 1).
- There was no difference in bacterial species distribution between the 2 groups, as determined by the Pielou evenness and Shannon diversity indices (Table 1).

CONCLUSIONS

- A decreased microbial richness (ASVs) was observed in the ccRCC group.
- Bacterial richness (ASVs) increased post-operatively in the ccRCC group, but it did not equal that of renal cysts.
- Gardnerella and Enterococcus were found to have a relative abundance > 2% in the ccRCC group.