RBX Abstract for IDWEEK 2017

RBX2660 is Safe, Superior to Antibiotic-Treated Controls for Preventing Recurrent *Clostridium difficile*, and May Rehabilitate Patient Microbiomes: Open Label Trial Results

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Background

Effective treatment options for recurrent *C. difficile* infection (rCDI) are limited, with high recurrence rates associated with the current standard of care. RBX2660, a standardized microbiota-based drug, was efficacious for preventing rCDI in a double-blinded Phase 2 clinical trial. Herein we report results from a subsequent open-label trial to evaluate the safety, efficacy, and microbiome altering-activity of RBX2660 for preventing rCDI.

Methods

This prospective, multicenter, open-label Phase 2 study enrolled subjects who had experienced either ≥2 recurrences of CDI following standard-of-care antibiotic therapy or ≥2 episodes of severe CDI requiring hospitalization. Participants received up to 2 doses of RBX2660 delivered via enema with doses 7 days apart. Efficacy was defined as absence of CDI at 8 weeks from the last dose and was compared to the 8-week CDI-free rate of subjects who received antibiotic treatment alone in a matched historical control arm. 16s rRNA analysis was conducted on stool samples that were voluntarily submitted from RBX2660-treated subjects at baseline, 7, 30, and 60 days after treatment, and operational taxonomic units were compared longitudinally.

Results

132 RBX2660 and 110 historical control subjects were included from 31 and 4 centers, respectively, in the USA and Canada. RBX2660's efficacy in preventing rCDI (78.8%) was higher than CDI-free rates in the Historical Control group (51.8%, $p<0.001$). A total of 476 adverse events (AEs) were reported by 97 RBX2660 subjects (73.5%) compared to 691 AEs among 69 historical controls (62.7%). Following treatment, the diversity of the RBX2660 treated subjects' microbiomes significantly increased and the relative proportion of Bacteroidia and Clostridia, while decreasing the relative proportion of Gammaproteobacteria. The resulting RBX2660-treated subject microbiota more closely resembled healthy donors than at study entry.

Conclusion

This open-label Phase 2 study demonstrates RBX2660's efficacy in preventing rCDI compared to an antibiotic-treated historical control group. The RBX2660 safety profile is consistent with results from previous clinical trials and microbiota analysis suggests that RBX2660 may rehabilitate patient microbiota.

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