Antibiotics and the Recurrence of *Clostridium difficile* Infection

- Antibiotic-mediated disruption of the intestinal microbiota is a risk factor for *Clostridium difficile* (C. diff.) infection.
- Approximately 25% of patients suffer from recurrence of disease following standard antibiotic therapy.
- After an initial recurrence, approximately 45% to 65% of patients following standard antibiotic therapy.
- There is increasing recognition that restoration of a healthy gut microbiota is necessary to prevent C. diff. colonization.

**Role of Antibiotics in Intestinal Microbiota Disruption**

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<th>Antibiotic</th>
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**Epidemiology of Recurrent C. diff.**

- Patients with recurrent C. diff. are typically older (median age 64.8, range 18.3 - 98.2 years) with a higher comorbidity burden evidenced by a higher Charlson score.
- Additionally, high-risk antimicrobials, particularly when administered after completion of the initial C. diff. treatment, gastric acid suppression; ≥ 2 hospitalizations within the prior 60 days are among the factors found to increase the risk of recurrence.

**PUNCH CD PATIENT POPULATION**

- Mean (SD) 66 (15.1)
- Range 26.7 - 88.3 years old

**CAPITAL DIGESTIVE CARE PATIENT POPULATION**

- Mean (SD) 71 (21.2)
- Range 21 - 90 years old

**RBX2660 Compared with FMT**

- Designed to mimic FMT
- Donors rigorously screened
- Patients do not have to bring their own donor; have donor undergo testing; wait for the results of the testing
- Contains a minimum guaranteed quantity of microbes
- Formulated to have a long shelf-life
- Manufactured using standardized, quality controlled processes
- Supplied in a ready-to-use enema format

**RBX2660 Administration**

- Has been shown to work in previous case series.
- Safe for patient; minimal risk as compared to colonoscopy or nasogastric tube method
- No bowel prep required
- No sedation required
- Can be administered by a nurse; no special procedure room or extra personnel needed
- Family members can remain in the treatment room

**Results**

- Of the 8 patients enrolled at Chevy Chase Clinical Research, 6 were treated with RBX2660.
- Five patients had efficacy data at 8 weeks.
- Overall efficacy was 80.0% (45%) at Chevy Chase Clinical Research.

**Impact on Clinic Logistics**

1. **Patient education and consult**
2. **Patient observed in position for an average of 1 hour**
3. **Treatment room: pre-packaged, ready-to-use enema**
4. **Exam room: Consult; weight; blood pressure**
5. **Exam room: cleared per normal procedures and was ready for use again**
6. **Patient received 1 hour later**
7. **Patient contacted patient the next morning**
8. **Patient arrived at incentiv clinic for treatment**
9. **Patient ordered RBX2660 from Remission for a patient on a specific day**

**Conclusion**

The PUNCH CD study to assess RBX2660 for recurrent C. diff. infection provided patients access to a new therapy with minimal disruption to clinic operation.

**What’s Next?**

- Participating in PUNCH CD 2 Study
- Randomized double-blind, placebo controlled study of RBX2660

**References**


**Clinical Takeaways:**

- PUNCH CD population predominantly elderly with multiple co-morbidities
- Typical recurrent C. diff. population
- PUNCH CD was an "all-comer study" that reflects the real-world recurrent C. diff. population seen in clinical practice - not sub-selected.

**PUNCH CD Study**

- Phase 2 open label study of RBX2660 (microbiota suspension) for recurrent C. diff. infection
- Objective: Evaluate the safety and effectiveness of RBX2660 for recurrent *Clostridium difficile* infection using single to multiple fecal microbiota transplantation (FMT)
- First multi-center study of FMT under a unified protocol conducted under an FDA IND

**PUNCH CD Study Design**

- Enema method of FMT delivery
- Safe for patient; minimal risk as compared to colonoscopy or nasogastric tube method
- Has been shown to work in previous case series
- Randomized double-blind, placebo controlled study of RBX2660
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**References**