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SHORT COMMUNICATION

Fecal microbiota transplantation: an emerging solution for recurrent infections

Trasplante de microbiota fecal: una solución emergente para infecciones recurrentes

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ABSTRACT

Clostridioides difficile infection was one of the main causes of antibiotic-associated diarrhoea, especially in Latin America, where its incidence increased considerably. Traditionally, it was treated with antibiotics such as metronidazole and vancomycin, although fidaxomicin emerged as a more effective option. However, the high recurrence rates prompted exploration of faecal microbiota transplantation (FMT), which proved more effective in recurrent cases. Although FMT was recognised as a promising therapy, its implementation in Latin America faced barriers such as a lack of protocols, infrastructure, regulation and cultural acceptance. Despite these challenges, scientific evidence supported its progressive incorporation into health systems.

Keywords: Clostridioides; Microbiota; Recurrence; Antibiotics; Latin America.

RESUMEN

La infección por Clostridioides difficile fue una de las principales causas de diarrea asociada a antibióticos, especialmente en América Latina, donde su incidencia aumentó considerablemente. Tradicionalmente, se trató con antibióticos como metronidazol y vancomicina, aunque la fidaxomicina emergió como una opción más eficaz. Sin embargo, las altas tasas de recurrencia impulsaron la exploración del trasplante de microbiota fecal (TMF), que demostró mayor efectividad en casos recurrentes. Aunque el TMF fue reconocido como una terapia prometedora, su implementación en América Latina enfrentó barreras como la falta de protocolos, infraestructura, regulación y aceptación cultural. A pesar de estos desafíos, la evidencia científica respaldó su incorporación progresiva en los sistemas de salud.

Palabras clave: Clostridioides; Microbiota; Recurrencia; Antibióticos; América Latina.

INTRODUCTION

Clostridioides difficile infection (CDI) is one of the leading causes of antibiotic-associated diarrhea, posing a significant challenge to healthcare systems worldwide. In Latin America, the incidence of CDI has been increasing, highlighting the need to evaluate and compare available treatment options, particularly fecal microbiota transplantation (FMT) versus conventional treatments.(1)

Traditionally, CDI has been treated with specific antibiotics. Metronidazole and vancomycin have been the drugs of choice for years. However, recent studies suggest that vancomycin is superior to metronidazole in efficacy, especially in severe cases of ACD. In addition, fidaxomicin has emerged as an effective alternative, with lower recurrence rates than vancomycin.(2)

Despite these antibiotics' efficacy, CDI recurrence remains a significant problem. Approximately 25 % of treated patients are estimated to experience a recurrence of infection. This challenge has driven the search for alternative therapies that address the active disease and the prevention of recurrences.[3]

FMT involves transferring stool from a healthy donor to the gastrointestinal tract of a patient with CDI to restore a balanced gut microbiota. This procedure seeks to reintroduce beneficial bacteria that may have been eliminated or reduced due to antibiotic use, thereby fighting the infection.[4]

Several studies have demonstrated the high efficacy of FMT in treating recurrent CDI. A systematic review by the Cochrane Library indicated that FMT increases the resolution of recurrent C. difficile infections compared to other treatments, including vancomycin. In addition, in April 2023, the FDA approved an orally administered fecal microbiota product to prevent CDI recurrence, reflecting the growing recognition of this therapy in the medical community.[5]

In Latin America, the implementation of FMT faces particular challenges. Although there are reports of successful cases, such as that of 11 patients with refractory C. difficile-associated diarrhea treated with FMT via colonoscopy, widespread adoption of this therapy is limited. Factors such as the lack of standardized protocols, limited resources, and the need for adequate infrastructure for collecting and processing fecal samples have hindered its implementation.[6]

In addition, cultural perceptions and acceptance of FMT may vary among Latin American populations, underscoring the importance of educational campaigns targeting both healthcare professionals and patients to increase understanding and acceptance of this therapy.[7]

Cost is a determining factor in the treatment choice for CDI in Latin America. While antibiotics such as metronidazole are relatively inexpensive and widely available, vancomycin and fidaxomicin are considerably more expensive and may not be readily available in all countries in the region. Although potentially more effective in preventing recurrences, FMT involves costs associated with donor selection, sample processing, and administration procedures, which may limit its availability in resource-limited settings.[8]

While FMT has been shown to be effective, its safety profile must be considered. Reported adverse effects include mild gastrointestinal symptoms, such as flatulence and abdominal distension. However, rare cases of serious adverse events, such as bacteremia, have been documented. Therefore, thorough donor selection and evaluation and close follow-up of recipients are crucial to minimize risks.[9]

Clostridioides difficile infection represents a significant challenge in Latin America, with increasing incidence and recurrence rates. While conventional antibiotic treatments remain the first line of defense, FMT is emerging as a promising alternative, especially in recurrent or refractory CDI cases.[10]

To optimize the management of CDI:

- Develop Standardized Protocols: establish clear guidelines for patient selection, FMT procedures, and post-procedure follow-up.
- Professional Training: train healthcare professionals in the performance and management of FMT, ensuring competence and safety in its application.
- Adequate Infrastructure: invest in creating stool banks and specialized laboratories for sample processing and storage.
- Community Education: conduct information campaigns to increase the general population's acceptance and understanding of FMT.
- Local Research: encourage clinical studies in Latin American populations to evaluate the efficacy and safety of FMT in the regional context.

The effective implementation of these recommendations could significantly improve outcomes in patients with Clostridioides difficile infection in Latin America. It could reduce recurrence rates, optimize antibiotic use, and, in the long term, decrease the costs associated with the management of complications and prolonged hospitalizations.

As scientific evidence in favor of fecal microbiota transplantation grows, so do efforts to formally integrate it into public health policies. In some countries in the region, collaborative research networks and fecal microbiota banks for therapeutic purposes have already begun to form. However, several structural and regulatory challenges still prevent widespread and safe adoption.

Need for Clear Regulatory Frameworks

Currently, most Latin American countries lack specific regulations governing the practice of FMT. This includes aspects related to:

- Donor selection and exclusion criteria.
- Sample processing, storage, and transport.
- Administration methods (colonoscopy, oral capsules, enema, etc.).
- Informed consent and ethical issues.

Regional guidelines endorsed by organizations such as the Pan American Health Organization (PAHO) or national medical associations could help standardize practices, improve safety, and facilitate formal incorporation into the healthcare system.

Fecal microbiota transplantation represents a therapeutic revolution in treating Clostridioides difficile infections, especially in their recurrent or refractory forms. Compared to conventional antibiotic-based treatments, FMT offers greater clinical efficacy and a long-term solution by restoring the balance of the intestinal ecosystem.

In the Latin American context, its practical application will require overcoming logistical, regulatory, and cultural barriers. However, with the right momentum from academia, healthcare, and politics, FMT has the potential to become a key tool for improving the quality of life of thousands of patients, reducing healthcare costs, and advancing toward more personalized, microbiota-based medicine.

The region has a unique opportunity to position itself as a leader in microbiological innovation applied to public health. Investment in local research, professional training, and the coordination of inter-institutional efforts will be essential to transform this therapeutic promise into an accessible and practical reality for all.

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FINANCING

None.

CONFLICT OF INTEREST

None.

AUTHORSHIP CONTRIBUTION

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