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SHORT COMMUNICATION

Clostridioides difficile infection: A growing threat in Argentine hospitals

Infección por Clostridioides difficile: Una amenaza creciente en hospitales argentinos

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ABSTRACT

The study addressed Clostridioides difficile infection (CDI) as one of the main causes of nosocomial diarrhea in hospitalized patients, especially in older adults and people with comorbidities. We analyzed how the prolonged and inadequate use of antibiotics altered the intestinal microbiota, facilitating colonization of the bacillus. Likewise, the main risk factors were described, including prolonged hospitalization, exposure to broad-spectrum antimicrobials and stay in intensive care units. In the Argentine context of the year 2024, there was a lack of standardized epidemiological data, difficulty in accessing sensitive diagnostic methods and unequal implementation of preventive measures among institutions. The Argentine health system, which was affected by structural tensions, economic limitations and institutional fragmentation, showed difficulties in controlling the spread of CDI, resulting in increased morbidity, prolonged hospitalization and higher hospital costs. Despite these limitations, the study highlighted the importance of strengthening epidemiological surveillance, promoting the rational use of antibiotics, training health personnel and improving infection control programs. Finally, it was concluded that a multidisciplinary approach, supported by sustained health policies and coordinated actions between the public and private sectors, was essential to reduce the incidence of this infection in Argentina and to improve clinical outcomes in vulnerable patients.

Keywords: Clostridioides Difficile; Nosocomial Diarrhea; Antibiotics; Hospital-Acquired Infection; Argentina.

RESUMEN

El trabajo abordó la infección por Clostridioides difficile (ICD) como una de las principales causas de diarrea nosocomial en pacientes hospitalizados, especialmente en adultos mayores y personas con comorbilidades. Se analizó cómo el uso prolongado e inadecuado de antibióticos alteró la microbiota intestinal, facilitando la colonización del bacilo. Asimismo, se describieron los principales factores de riesgo, entre ellos la internación prolongada, la exposición a antimicrobianos de amplio espectro y la estancia en unidades de cuidados intensivos. En el contexto argentino del año 2024, se observó una carencia de datos epidemiológicos estandarizados, dificultad en el acceso a métodos diagnósticos sensibles y una implementación desigual de medidas preventivas entre instituciones. El sistema de salud argentino, atravesado por tensiones estructurales, limitaciones económicas y fragmentación institucional, mostró dificultades para controlar la propagación de la ICD, lo que derivó en mayor morbilidad, prolongación de internaciones y aumento de costos hospitalarios. A pesar de estas limitaciones, el estudio destacó la importancia de reforzar la vigilancia epidemiológica, fomentar el uso racional de antibióticos, capacitar al personal de salud y mejorar los programas de control de infecciones. Finalmente, se concluyó que un abordaje multidisciplinario, apoyado por políticas sanitarias sostenidas y acciones coordinadas entre el sector público y privado, resultó fundamental para reducir la

incidencia de esta infección en Argentina y mejorar los resultados clínicos en pacientes vulnerables.

Palabras clave: Clostridioides Difficile; Diarrea Nosocomial; Antibióticos; Infección Intrahospitalaria; Argentina.

BACKGROUND

Nosocomial diarrhea represents one of the most significant health challenges in today's hospital systems. In Argentina, in 2024, this problem will take on a particularly critical dimension due to accumulated tensions in the healthcare system. The presence of three or more liquid or semi-liquid stools in a hospitalized patient after 72 hours of hospitalization has become a mandatory surveillance indicator to prevent the spread of healthcare-associated infections. Within this context, Clostridioides difficile (CBD) infection is the most common cause of these diarrheal conditions, with a particular incidence in institutionalized older adults or those with a recent history of antibiotic treatment.[1,2,3,4]

In the current Argentine context, epidemiological surveillance of this infection is limited by multiple factors. On the one hand, the underreporting of cases is constant due to the lack of standardization in diagnostic criteria between public and private institutions. Unequal access to more sensitive and specific diagnostic methods prevents a clear picture of the actual impact of CDI in our country. Added to this is the heterogeneity of human and material resources available to hospitals throughout the country, especially in the interior provinces, where access to techniques such as the A/B toxin immunoassay or PCR for toxigenic strains is restricted.[5,6,7]

Data on the circulation of virulent strains, such as BI/NAP1/027, in Latin America have alerted health authorities to the epidemic potential of this infection. Although significant outbreaks have already been confirmed in countries such as Chile and Mexico, Argentina still lacks systematic molecular surveillance to identify the presence of these variants. This weakness represents a latent threat in a country with a fragmented health system and little sustained investment in health infrastructure. As prolonged hospitalizations increase in elderly patients, many of whom have multiple comorbidities and have undergone previous antibiotic treatments, the ground becomes fertile for the proliferation of *Clostridioides difficile*.[8,9,10]

Inappropriate use of antibiotics remains a key factor in the pathogenesis of this disease. In Argentina, over-the-counter access to antimicrobials persists in many pharmacies despite regulatory efforts by the Ministry of Health. This reality exacerbates the situation, as it encourages the indiscriminate and prolonged use of antibiotics without medical supervision, leading to profound alterations in the intestinal microbiota and facilitating colonization by toxigenic strains. Although regulations on the rational use of antibiotics exist in hospitals, compliance is uneven. The lack of robust infection control committees in many institutions, coupled with poor ongoing training of healthcare personnel on this issue, results in ineffective surveillance.[11,12,13,14]

Another risk factor in our environment is admission to intensive care units, especially in high-complexity hospitals in large cities such as Buenos Aires, Córdoba, or Rosario. These units have the highest concentration of immunocompromised patients, with prolonged treatments and multiple invasive devices, which significantly increases the risk of acquiring HAI. In addition, many Argentine hospitals still have structural deficiencies that hinder the proper implementation of contact isolation measures, such as a shortage of single rooms or a lack of basic hand hygiene supplies.[15,16,17,18]

Timely diagnosis of infection remains a challenge in daily practice. Despite the technological advances available in referral centers in many public hospitals in the country, diagnosis is still based on less sensitive methods, such as clinical observation and laboratory tests, which do not allow for rapid and specific pathogen detection. This delay in diagnosis delays the start of appropriate treatment, prolongs hospital stays and increases mortality. In addition, the delay in diagnostic confirmation hinders the immediate implementation of control measures, favoring horizontal transmission of the pathogen in the hospital environment.[19,20,21]

Argentina also faces significant challenges in treatment. Although drugs such as oral vancomycin and fidaxomicin are indicated for the treatment of DCI, their high cost limits their use in many public hospitals, where oral metronidazole remains the most widely used option despite its lower efficacy in moderate or severe cases. The lack of uniform availability of adequate treatments, especially in provinces with fewer resources, directly impacts recurrence rates and patient outcomes.[22,23,24]

From a preventive perspective, the country has incorporated key strategies such as promoting hand washing, environmental hygiene, and educating health personnel on the rational use of antimicrobials. However, these measures still have weaknesses in their daily implementation. Infection control programs are uneven among hospitals; not all have trained personnel or resources dedicated exclusively to these tasks. In addition, in many cases, heavy workloads and staff shortages make it difficult to strictly comply with biosafety measures, which favors the persistence and transmission of *Clostridioides difficile*.[25,26,27]

In recent years, some institutions have begun implementing antimicrobial stewardship programs, which seek

to optimize antibiotic use through audits, prescription reviews, and ongoing training. These programs have proven effective in reducing the incidence of HCAI in hospitals abroad, and their implementation in Argentina represents a valuable opportunity to improve clinical outcomes. However, their sustained implementation requires institutional support, funding, and public policies to back them up, which presents severe difficulties in Argentina's current economic context, marked by inflation and budget cuts.[28,29,30]

The health situation in Argentina in 2024 is marked by a series of structural tensions that directly impact the response capacity to infections such as SSI. The post-pandemic period left significant consequences regarding healthcare worker attrition, lack of investment in infrastructure, and increased demand for hospital beds and services. This is compounded by a complex economic context that hinders the procurement of supplies, staff training, and the implementation of sustained surveillance programs. In this context, healthcare-associated infections, such as HAI, become a significant burden for both patients and the healthcare system as a whole.[31,32,33]

Despite these challenges, there are opportunities for improvement. Strengthening epidemiological surveillance systems, investing in rapid diagnostic technologies, providing continuing education for health personnel, and raising awareness about the rational use of antibiotics among the general population and the medical community are essential pillars for controlling the spread of *Clostridioides difficile*. In addition, cooperation between public and private institutions and the support of clear, evidence-based health policies can promote a more effective and comprehensive approach to this infection.[34,35]

In this regard, prevention strategies must include a multidisciplinary approach involving infectious disease specialists, clinicians, epidemiologists, pharmacists, nursing staff, and health authorities. Only through joint efforts can an infection that, although largely preventable, continues to cause serious complications, high costs, and, in many cases, the death of vulnerable patients be contained.

In conclusion, Clostridioides difficile infection is a growing public health problem in Argentina. Its control and prevention depend on multiple factors, including the responsible use of antibiotics, the strengthening of diagnostic and treatment mechanisms, the implementation of effective infection control measures, and the commitment of all actors in the health system. International experience shows that it is possible to reduce the incidence of this disease through appropriate policies, but to achieve this, political will, sustained investment, and, above all, a profound cultural change that revalues prevention as a fundamental pillar of medical care is required. Only then will it be possible to effectively address the challenge posed by *Clostridioides difficile* in the current Argentine healthcare context.[36,37,38,39]

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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