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ORIGINAL ARTICLE

## Progression in children with intestinal failure at a referral hospital in Medellín, Colombia<sup>☆</sup>



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### KEYWORDS

Intestinal failure;  
Short bowel  
syndrome;  
Parenteral nutrition;  
Intestinal autonomy;  
Children

### Abstract

**Background:** Patients with intestinal failure are unable to maintain adequate nutrition and hydration due to a reduction in the functional area of the intestine. Different strategies have the potential to benefit these patients by promoting intestinal autonomy, enhancing quality of life, and increasing survival.

**Aims:** To describe the clinical characteristics of children with intestinal failure and disease progression in terms of intestinal autonomy and survival.

**Materials and methods:** A retrospective study was conducted, evaluating 33 pediatric patients with intestinal failure that were hospitalized within the time frame of December 2005 and December 2013 at a tertiary care referral center. Patient characteristics were described upon hospital admission, estimating the probability of achieving intestinal autonomy and calculating the survival rate.

**Results:** Patient median age upon hospital admission was 2 months (interquartile range [IQR]: 1-4 months) and 54.5% of the patients were boys. Intestinal autonomy was achieved in 69.7% of the cases with a median time of 148 days (IQR: 63 - 431 days), which decreased to 63 days in patients with a spared ileocecal valve. Survival was 91% during a median follow-up of 281 days (IQR: 161 - 772 days).

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**Conclusions:** Medical management of patients with intestinal failure is complex. Nutritional support and continuous monitoring are of the utmost importance and long-term morbidity and mortality depends on the early recognition and management of the associated complications. © 2015 Published by Masson Doyma México S.A. on behalf of Asociación Mexicana de Gastroenterología. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## PALABRAS CLAVE

Falla intestinal;  
Síndrome de intestino corto;  
Nutrición parenteral;  
Autonomía intestinal;  
Niños

## Evolución en niños con falla intestinal en un hospital de referencia en Medellín, Colombia

### Resumen

**Antecedentes:** Los pacientes con falla intestinal son incapaces de mantener una adecuada nutrición e hidratación debido a una reducción en el área intestinal funcional. La implementación de diferentes estrategias tiene el potencial de beneficiar a estos pacientes en términos de favorecer la autonomía intestinal, aumentar la calidad de vida y elevar la supervivencia.

**Objetivos:** Describir las características clínicas de niños con falla intestinal, así como la evolución en términos de autonomía intestinal y supervivencia.

**Materiales y métodos:** Estudio retrospectivo en el que se evaluó a 33 pacientes pediátricos con falla intestinal, hospitalizados entre diciembre del 2005 y diciembre del 2013 en una institución de alta especialidad. Se describieron las características de los pacientes al ingreso hospitalario, se estimó la probabilidad de lograr la autonomía intestinal y se calculó la tasa de supervivencia.

**Resultados:** La mediana de edad al momento de ingresar al hospital fue 2 meses (rango intercuartílico [RIC]: 1-4 meses) y el 54.5% de los pacientes fueron de sexo masculino. El 69.7% de los casos lograron la autonomía intestinal con una mediana de tiempo de 148 días (RIC: 63-431 días), la cual disminuyó a 63 días cuando los pacientes tenían presencia de válvula ileocecal. La supervivencia fue del 91% durante una mediana de seguimiento de 281 días (RIC: 161-772 días).

**Conclusiones:** El manejo médico de los pacientes con falla intestinal es complejo. El soporte nutricional y la monitorización continua son de vital importancia y la morbilidad a largo plazo depende del reconocimiento y manejo precoz de las complicaciones asociadas.

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## Introduction

Intestinal failure in pediatrics can be defined as the reduction of the intestinal mass below the minimum necessities for maintaining adequate digestion and absorption of nutrients and fluids necessary for growth.<sup>1,2</sup>

A number of diseases are recognized as being responsible for this entity, and the most common is short bowel syndrome (SBS). Others are structural abnormalities of the enterocyte, inflammatory alterations, severe food allergies, autoimmune enteropathies, and severe bowel transit disorders.<sup>3</sup>

Adequate nutrient absorption and growth involve a process of intestinal adaptation that will depend on the extension, functionality, and motility of the intestinal remnant. The clinical course of these patients for achieving intestinal adaptation is long and complex. The maximum intestinal adaptation time estimated in adults is 2 years, but in children it can last longer than 3 years.<sup>4,5</sup> The treatment of these children is based on the provision of adequate nutrition: total parenteral nutrition (TPN) plus enteral nutrition (EN) when possible, thus promoting intestinal adaptation.

It also requires the prevention and/or treatment of the complications derived from the underlying disease or secondary to prolonged TPN use.<sup>6</sup>

The multidisciplinary programs focused on the integrated treatment of these patients has dramatically changed the survival of these children over the last decades.<sup>7-9</sup> The care of these patients at our hospital is guided by a group of professionals under a protocol that has the possibility of individualizing each case and it continues to evolve as new evidence is brought to light.

The aim of this study was to describe the clinical characteristics, such as progression in terms of intestinal autonomy and survival, in a group of pediatric patients with intestinal failure treated at a tertiary care referral center.

## Population and methods

A retrospective study was carried out that included 33 pediatric patients hospitalized within the time frame of December 2005 and December 2013 at the Hospital Pablo Tobón Uribe, an advanced specialty institution and center

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