

Definition, epidemiology and subtypes of chronic constipation

Nuria Pérez-López 

Gastroenterology Service, Clínica Alameda, O Carballiño, Ourense, Spain

Abstract

Chronic constipation is a common digestive disorder characterized by decreased frequency of bowel movements, increase stool consistency, or a feeling of incomplete evacuation. It has a high prevalence worldwide in the general population (14%); in Mexico, its prevalence can vary depending on the criteria used between 2.4% and 23%. It significantly affects the quality of life of those who suffer from it and has a considerable economic impact on the health care system. Functional constipation is defined based on the Rome IV criteria, which include specific clinical characteristics that must be met to make a positive diagnosis of the disease without the need to use unnecessary diagnostic tests and that differentiate it from other disorders of gut-brain interaction such as irritable bowel syndrome or variety constipation. Functional constipation is subdivided based on colonic transit studies into normal transit constipation, slow transit constipation and constipation due to disorder of the defecation mechanism, which has implications for its subsequent treatment. Constipation secondary to opioid use constitutes a separate chapter that has been included in the Rome IV criteria, whose approach and treatment constitute a well-differentiated condition.

Keywords: Constipation. Functional constipation. Roma IV. Epidemiology. Constipation subtypes.

Definición, epidemiología y subtipos de estreñimiento crónico

Resumen

El estreñimiento crónico es un trastorno digestivo común que se caracteriza por disminución en la frecuencia de las evacuaciones, aumento en la consistencia de la heces o sensación de evacuación incompleta. Tiene una alta prevalencia en la población general (14%); en México puede variar, según los criterios utilizados, entre el 2.4% y el 23%. Afecta de forma importante la calidad de vida de quien lo padece y tiene un importante impacto económico en el sistema de salud. El estreñimiento funcional se define según los criterios de Roma IV, los cuales incluyen características clínicas específicas que deben cumplirse para realizar un diagnóstico positivo de la enfermedad sin necesidad de utilizar estudios de diagnóstico innecesarios y que lo diferencian de otros trastornos de la interacción intestino-cerebro como el síndrome de intestino irritable o variedad estreñimiento. El estreñimiento funcional se subdivide, según los estudios de tránsito colónico, en estreñimiento de tránsito normal, estreñimiento de tránsito lento y estreñimiento por trastorno del mecanismo de la defecación, lo cual tiene implicaciones en su posterior tratamiento. El estreñimiento secundario al uso de opiáceos es un capítulo aparte que se ha incluido en los criterios de Roma IV, cuyo abordaje y tratamiento constituyen una condición bien diferenciada.

Palabras clave: Estreñimiento. Estreñimiento funcional. Roma IV. Epidemiología. Subtipos de estreñimiento.

Correspondence:

Nuria Pérez-López
E-mail: sonelle74@hotmail.com

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Introduction

Disorders of gut-brain interaction (DGBI) have a high prevalence in the general population, as they affect any group regardless of sex, race, age, or socioeconomic status. They entail a significant impact on the quality of life of those who suffer from them and have a negative economic impact on the health care system.

According to the Rome IV criteria,¹ intestinal DGBIs include the categories detailed in table 1. Each category has specific clinical criteria, although it should be considered that DGBIs constitute a clinical spectrum and may overlap with one another.

Definition of chronic constipation

The term “chronic constipation” (CC) describes the patient’s perception of alterations in bowel movement that may include decreased frequency of bowel movements, hard stools (Bristol scale 1-2) (Fig. 1), difficult evacuation, or a feeling of incomplete evacuation.

Constipation is diagnosed when symptoms have a minimum duration of 3 months.²

The definition of constipation may vary among different patients or different healthcare professionals. The most commonly used symptoms in adults to describe it are straining during defecation (52%), hard stools (44%), and absence of frequent bowel movements (34%). The most widely used definition by professionals is the presence of fewer than three bowel movements per week.²

According to its pathophysiology, constipation can be defined as primary or functional, and secondary.

Functional constipation (FC) is defined using the Rome IV clinical criteria, after ruling out mechanical pathologies, medication use, metabolic or endocrine diseases, and neurological causes³ (Table 2).

The Rome IV diagnostic criteria are presented in table 3. Compared with previous criteria, the latest version specifies that abdominal pain and bloating may be present but must not be the predominant symptoms, in order to rule out irritable bowel syndrome with constipation (IBS-C). Correct differentiation between these two clinical conditions is important, as many professionals may use the term “functional constipation” interchangeably to encompass both.

Clinical studies have demonstrated that 90% of patients with IBS-C meet criteria for functional constipation and 44% of patients with FC meet criteria for IBS-C.⁴

CC is a multifactorial condition with a complex pathogenesis, in which both modifiable and non-modifiable risk

Table 1. Rome IV classification of functional bowel disorders¹

C1: Irritable bowel syndrome (IBS)	C2: Functional constipation
IBS with predominant constipation (IBS-C)	C3: Functional diarrhea
IBS with predominant diarrhea (IBS-D)	C4: Functional abdominal bloating
IBS with mixed bowel habits (IBS-M)	C5: Unspecified functional bowel disorder
Unclassifiable IBS	C6: Opioid-induced constipation

1		Hard, separate lumps, similar to a dried fruit/nut.
2		Sausage-shaped but lumpy, like merged balls.
3		Sausage-shaped with cracks on the surface.
4		Sausage-shaped like a sausage, smooth and soft.
5		Soft blobs with separate pieces or clear-cut edges.
6		Fluffy pieces with ragged edges, mushy.
7		Liquid stool, without solid pieces.

Figure 1. Bristol stool scale.

factors exist. Modifiable risk factors include a sedentary lifestyle, low fluid intake, low fiber intake, and poor sleep quality. Non-modifiable risk factors include female sex, advanced age, and low socioeconomic status. Secondary causes include medications such as opioids, benzodiazepines, antidepressants, and antispasmodics, as well as diseases such as type 2 diabetes *mellitus*, chronic renal failure, chronic obstructive pulmonary disease, and ischemic heart disease, among others (Table 2).⁵

Epidemiology of chronic constipation

CC is highly prevalent among adults in the global population,⁶ with an estimated global prevalence of 14%. In older adults, the prevalence increases to approximately 32%. In Africa and Asia, the prevalence is lower (13%).⁶

Table 2. Causes of secondary constipation²

Mechanical obstruction	Colorectal cancer, diverticulitis, stenosis, rectocele, megacolon, adhesions, fecal impaction
Neurological causes	Autonomic neuropathy, stroke, dementia, depression, multiple sclerosis, Parkinson's disease, spinal cord injury
Metabolic causes	Chronic renal failure, type 2 diabetes mellitus, multiple endocrine neoplasia type 2, hypercalcemia, hyperparathyroidism, hypokalemia, hypothyroidism, porphyria
Myopathies	Amyloidosis, dermatomyositis, scleroderma, systemic sclerosis
Diet-related	Diet high in protein and fat, dehydration, anorexia, excessive consumption of caffeine and alcohol
Miscellaneous	Heart failure, immobility
Other	Pregnancy, pelvic floor dysfunction
Medications	Tricyclic antidepressants, antiepileptics, antihistamines, medications for Parkinson's disease, antipsychotics, antispasmodics, calcium channel blockers, beta-blockers, monoamine oxidase inhibitors, opioids, antacids, calcium and iron supplements, oral contraceptives, non-steroidal anti-inflammatory drugs, loperamide

According to the Rome IV epidemiological criteria,³ there are significant differences in the prevalence of FC across geographical areas, with an estimated prevalence of 11.7%. Prevalence is higher (approximately double) in women than in men,⁷ and a lower frequency has been observed in obese European patients,⁸ which contrasts with the evidence that the presence of FC is correlated with body mass index.⁹ In hospitalized patients, the prevalence is 50%.¹⁰

CC is commonly self-diagnosed by patients, and based on patient-defined criteria, the prevalence ranges from 1.9% to 27.2%. Only 20% of patients with CC seek medical attention, considering their bowel habits as normal,¹¹ which leads to underdiagnosis of the disease.

In an epidemiological study conducted in the United Kingdom between 2017 and 2018, approximately 200 patients were hospitalized due to complications of constipation, leading to a total of 160,000 bed-days per year.¹²

The female-to-male ratio is 1.5:1, and women use laxatives more frequently and seek medical attention more often.⁴

Table 3. Rome IV diagnostic criteria for functional constipation³

C2: Diagnostic criteria for functional constipation
Must include two or more of the following: Straining during more than 25% of bowel movements Hard stools (Bristol scale 1-2) in more than 25% of bowel movements Sensation of incomplete evacuation in more than 25% of bowel movements Sensation of anorectal obstruction or blockage in more than 25% of bowel movements Use of manual maneuvers to facilitate evacuation in more than 25% of bowel movements Fewer than three spontaneous bowel movements per week
Loose stools rarely present without laxative use
Insufficient criteria for irritable bowel syndrome

Criteria must be fulfilled for 3 months, with symptom onset 6 months prior to diagnosis.

In Mexico, the prevalence of CC ranges from 2.4% to 22.3%;¹³ a meta-analysis of studies conducted in the Mexican population showed a prevalence of 14.4%, very similar to that recorded worldwide.^{14,15}

Regarding the impact on the health care system, the aforementioned United Kingdom study showed that annual expenditure for the treatment of CC exceeded 160 million pounds, including more than 70 million for hospitalizations and 90 million for laxative use.¹⁶

CC ranks fifth among the most frequent gastrointestinal clinical diagnoses, with approximately 8 million outpatient visits per year, 33% in primary care, 21% in pediatrics, and 14% in gastroenterology. The number of these visits surpasses that of patients with colon cancer.

Direct medical costs in the United States have been estimated at 230,000 dollars annually, twice as high in women with constipation as in those without it.⁴ In Mexico, no studies on this matter are available.

In patients with FC, general health, mental health, and social life are worse. Quality of life scores in patients hospitalized for CC are comparable to those of patients with Crohn's disease, and in outpatients they are comparable to those of patients with gastroesophageal reflux disease, arterial hypertension, diabetes, or depression.⁴

In the study conducted by Ruiz López et al.¹⁷ in patients with IBS-C and FC, using the PAC-QOL and SF-36 quality of life scales, it was demonstrated that the quality of life of Mexican patients with constipation symptoms is lower, especially in those with IBS-C.

Subtypes of chronic constipation

From a clinical perspective, constipation can be classified as secondary when it is due to mechanical, metabolic, or neurological alterations, or to medication use (Table 2), and as primary or functional when these causes have been ruled out.

FC is classified, according to colonic transit studies, as normal transit constipation (NTC) (60-70%), slow transit constipation (STC) (15-30%), and disorders of the defecation mechanism (20-30%).⁶

STC is defined as the presence of slow colonic transit in the absence of disorders of the defecation mechanism or megacolon. It may be a manifestation of colonic motor dysfunction or secondary to poor caloric intake. However, only a small percentage of patients exhibit motor dysfunction when evaluated with manometry. Manometric abnormalities include reduced high-amplitude contractions and reduced retrograde propagated and non-propagated activity of the sigmoid colon, as well as phasic activity of the rectum. The response to a meal or the pharmacological test with bisacodyl are equally impaired. Colonic inertia is defined as an absence of response to meals or pharmacological stimuli such as bisacodyl or neostigmine.

A significant reduction in intrinsic nerves and interstitial cells of Cajal has been described.

In STC, an alteration in colonic transit is evidenced on complementary tests, while pelvic function is normal.^{4,5}

NTC is characterized by the absence of pathological findings on history-taking and physical examination, and may present with pain and bloating (if it meets criteria for IBS-C); however, it is not synonymous with IBS-C, as 23% of these patients exhibit slow colonic transit.^{4,5}

Disorders of the defecation mechanism are characterized by prolonged or excessive straining, difficulty with defecation even of soft stools, and use of manual maneuvers to facilitate defecation. Abnormalities are found on anorectal function tests, and it may coexist with normal or slow transit. Among the abnormalities described on anorectal function tests are elevated resting anal pressure, incomplete anal relaxation, or paradoxical contraction of the puborectalis muscle and the external anal sphincter (defecatory dyssynergia).

The relationship between these abnormalities and defecatory symptoms is unclear, as it has been found that asymptomatic patients may exhibit dyssynergic defecation.

The etiology is poorly understood, but it may be secondary to ignoring the urge to defecate or to an

Table 4. Rome IV diagnostic criteria for the diagnosis of opioid-induced constipation

New-onset constipation or worsening of pre-existing constipation following initiation or dose increase of opioids
Presence of two or more of the following criteria:
Loose stools rarely present without laxative use
Fewer than three bowel movements per week
Hard stools (Bristol scale 1-2) in more than 25% of bowel movements
Straining in more than 25% of bowel movements
Sensation of incomplete evacuation in more than 25% of bowel movements
Sensation of anal blockage in more than 25% of bowel movements

Manual maneuvers to facilitate evacuation in more than 25% of bowel movements.

abnormal anal response to prevent pain or trauma. In some patients, alterations in rectal sensitivity may be diagnosed that can explain the absence of the urge to defecate.^{4,5}

Opioid-induced constipation encompasses a spectrum of disorders that present as gastrointestinal side effects of the use of these medications. The Rome Committee decided not to include it as a new DGBI, but rather to classify it as an opioid-induced side effect.¹ According to the Rome IV criteria, it is defined as a change in baseline bowel habits following the initiation of opioid treatment, including decreased frequency of bowel movements, a sensation of incomplete evacuation, the presence or increase of straining during defecation, and the patient's perception of problems related to their bowel habits (Table 4). The prevalence of opioid-induced CC is 41% in non-oncological patients treated with opioids, and in oncological patients, the incidence reaches 94%.¹⁸ Prevalence increases with prolonged treatment.¹⁸

Conclusion

CC is a highly prevalent condition that constitutes one of the leading causes of medical consultation both in primary care and in gastroenterology, and has a significant impact on the quality of life of those who suffer from it.

It may be secondary to multiple factors that must be ruled out as a priority. FC should be diagnosed according to the Rome IV criteria with the aim of making a positive diagnosis and avoiding excessive use of diagnostic tests, as this has a negative economic impact on the health care system.

Opioid-induced constipation must be considered a separate condition whose management and treatment are

specific and which impacts the quality of life of patients under chronic treatment with these medications.

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Conflicts of interest

The author declares no conflicts of interest.

Ethical considerations

Protection of persons and animals. The author declares that no experiments were conducted on human beings or animals for this research.

Confidentiality, informed consent, and ethical approval. The study does not involve personal data, clinical records, or human biological samples; therefore, ethical approval is not required. The SAGER guidelines do not apply.

Declaration on the use of artificial intelligence. The author declares that no generative artificial intelligence was used in the writing or creation of the content of this manuscript.

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