



SOBRECRECIMIENTO BACTERIANO (SIBO).

Mitos y realidades

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small intestinal bacterial overgrowth



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RESULTS BY YEAR

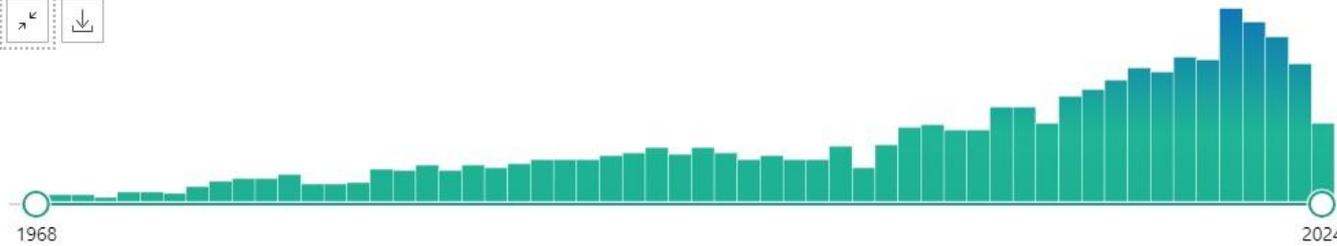
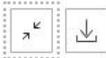
2,154 results



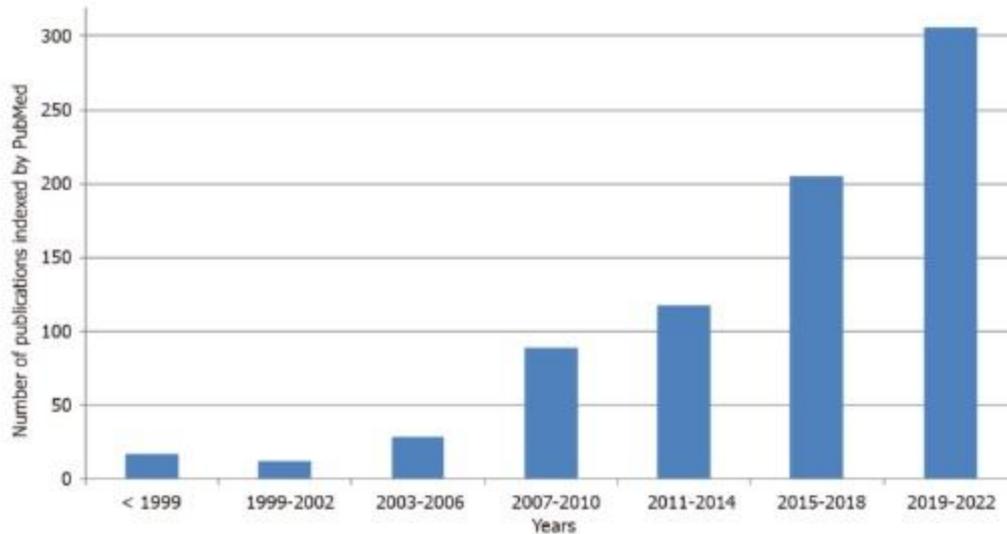
Page

1

of 216



Efremova I *et al.* Epidemiology of SIBO



DOI: 10.3748/wjg.v29.i22.3400 Copyright ©The Author(s) 2023.

Figure 1 Number of publications indexed by PubMed on small intestinal bacterial overgrowth by year.

TikTok

- Para ti
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- Amigos
- Explorar **Nuevo**
- LIVE
- Perfil

Inicia sesión para seguir a creadores, dar un me gusta a videos y ver comentarios.

Iniciar sesión

Crea efectos de TikTok y obtén una

Buscar

00:45 / 00:49

58.8K
279
5493
5131

ac2ality
ac2ality · 2023-8-14 **Seguir**

¿Qué es el SIBO y por qué se ha hecho viral? 😊 Fuente: Onda Cero, El Confidencial @Paula Munoz Soriano #explicamelofacil #sibo #noticiasen1minuto2023
🎵 sonido original - ac2ality

279 comentarios

Iniciar sesión para comentar

+ Cargar **Iniciar sesión**

JuankI.municio
522.5K · Hace 1 día(s)
demostrando que está claro que: no...
martinezyhermanos
378.5K · 4-15

¿Un mal día? Yo te ayudo 😊
danimartinezweb
260.9K · 4-23

Recuerda esto cada vez que quieras rendirte....
jabberbrand
13.2K · 5-11

Turbulencias en el vuelo de Singapore Airlines
En el japon vivian a otro nivel Parte 5

TikTok

- Para ti
- Siguiendo
- Amigos
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- LIVE
- Perfil

Inicia sesión para seguir a creadores, dar un me gusta a videos y ver comentarios.

Iniciar sesión

279 comentarios

Iniciar sesión para comentar

Bella22
El problema es que cuando vas al médico no te hacen ni caso...
2023-8-15 1678 Responder
Ver 18 respuestas

Yiyi Ma
Llevo años con esos síntomas, y nunca me han hecho caso en el médico, duele muchísimo y cuando se hincha es horrible
2023-8-14 483 Responder
Ver 14 respuestas

Diego Privado
Ni falta hace hacerse...se cura con alimentación y en algunas personas con el psicólogo (pero también nutrición)
2023-8-14 12 Responder
Ver 14 respuestas

María R
HOY me ha dicho mi médica de cabecera que es emocional ,ese es el nivel . yo ya estoy en privado 😊
2023-9-27 6 Responder
Ver 7 respuestas

themarsarts
Vas al médico como fue mi caso y no te hacen nada. Tuve que ir por privado y era positivo...
2023-8-16 0 Responder

+ Cargar **Iniciar sesión**

Turbulencias en el vuelo de Singapore Airlines
02:01

La respuesta a "¿qué ha pasado?" es No lo sé. De...
perdiendoelmiedoavolar
50.4K · Hace 2 día(s)

Todo es una locura en Japón 🤪 #japon #viajar...
laurapeanut
73.3K · Hace 3 día(s)

No hay excusa

Funda y protector cristal para iPhone 15 Pro Max #ipho...
ventafinex
267.8K · 4-18

No digo nada... #artist #musica #artistaindependi...
itsandreaftax
13 · Hace 6 h

	Test de Lactosa	Test de Fructosa	Test de Sorbitol	Test de SIBO	Aspirado yeyunal
H. La Paz	✓	✓	✓	✓	X
H. Getafe	✓	X	X	X	X
H. Parla	X	X	X	X	X
H. Vallecas	X	X	X	X	X
H. Coslada	X	X	X	X	X
H. Alcalá	✓	X	X	X	X
H. Villalba	✓	✓	X	X	X
H. Gregorio M	✓	X	X	X	✓
H. RyCajal	✓	X	X	X	X
H. RJC (Móstoles)	✓	X	X	X	X
H. Móstoles	✓	✓	X	✓	X
H. Leganés	✓	X	X	X	X
H. Fundación JD	✓*	X	X	X	X
H. Puerta de Hierro	✓	X	X	✓	X
H. Alcorcón	✓	✓	X	X	X
H. SS de los Reyes	X	X	X	X	X
H. 12 de Octubre	✓	✓	X	✓	X
H. Arganda	X	X	X	X	X
H. Del Tajo	X	X	X	X	X
H. De Fuenlabrada	✓	X	X	X	X

70%

25%

5%

20%

5%

SOBRECRECIMIENTO BACTERIANO (SIBO)

- *Presencia de un excesivo número de bacterias en el intestino delgado que causan síntomas gastrointestinales*

- Recuento >100.000 bacterias/mL de aspirado yeyunal
- Test del aliento de Hidrógeno y metano

Best Practice Advice 5

A major impediment to our ability to accurately define SIBO is our limited understanding of normal small intestinal microbial populations—progress in sampling technology and techniques to enumerate bacterial populations and their metabolic products should provide much needed clarity.

Although the last decade has seen an explosion in research into the gut microbiome, the small bowel microbiome has not been well defined even by more basic microbial techniques, such as culture.

28

Proceedings of the Royal Society of Medicine

and had osseous metastases. The histology of the tumour was that of a non-argentaffin carcinoid. Many patients with these tumours excrete excessive amounts of uropepsinogen (they have a high incidence of duodenal ulcers), but we have found that their acid secretion varies; perhaps the acid estimation is affected by the strong motor contractions of the stomach leading to rapid emptying. With regard to the question of œdema, 5-HT has been shown by Hulet and Perera (1956) to cause sodium retention. Most often the cardiac condition seems to explain the occurrence of œdema. I think it unlikely that many patients will have cardiac surgery for pulmonary stenosis, since it tends to develop late in the disease.

REFERENCE

HULET, W. H., and PERERA, G. A. (1956) *Proc. Soc. exp. Biol. N. Y.*, **91**, 512.

"Blind Loop" Syndrome

By W. I. CARD, M.D., F.R.C.P.
Edinburgh

THE term "blind loop" is an unsatisfactory descriptive title which may be extended to cover a number of apparently diverse intestinal condi-

dog with an intestinal stricture, and related this anæmia, not to the degree of narrowing produced, but to the infection of the intestinal canal above the stricture which followed. Where this infection did not occur, no anæmia resulted. Other experimenters (Tönnis and Brusis, 1931, 1932) constructed in dogs blind loops which were arranged to fill by peristalsis. Anæmia was produced and extirpation of the loop greatly improved the clinical condition. Life was prolonged by the giving of liver injections. Other experiments showed that the use of intestinal antiseptics such as trichlororesol (Horster, 1935) greatly lengthened life and prevented the onset of loss of weight and anæmia.

It should be noted that the production of blind loops does not necessarily result in anæmia. Pearce (1934) confirmed in dogs that when the segment of intestine was so arranged that it emptied, the animal remained normal, and appetite and activity was unimpaired. Only when the loop was so arranged that it filled did symptoms appear of weakness, lethargy, and loss of weight, and unless the loops were resected the animals died. He reported no significant changes in the blood.

The most recent animal work has been that of Cameron *et al.* (1949) who, after forming blind sacs under certain conditions in rats, succeeded in producing a macrocytic anæmia and confirmed and extended earlier experimental observations. They were able to prolong life and cure anæmia by using chlortetracycline and folic acid. Since some of their rats died without anæmia, they emphasized that the deficiency must be multiple. All this experimental work may be summarized by saying that the production of intestinal blind loops, sacs or strictures may profoundly affect an animal, but only when stasis has been produced; that these effects include malnutrition, anæmia, loss of weight, and may terminate in death; that the effects may be abolished by extirpation of the blind loop or sac, or the resection of the stricture; and that improvement of the animal's condition may be achieved by intestinal antiseptics, more recently by antibiotics, and also by giving folic acid, liver injections, &c.

In human pernicious anæmia, Castle's hypo-

SOBRECRECIMIENTO BACTERIANO (SIBO)

Journal of Clinical Investigation
Vol. 44, No. 11, 1965

Studies on the Pathogenesis of Steatorrhea in the Blind Loop Syndrome *

ROBERT M. DONALDSON, JR.†

(From the Medical Service, Veterans Administration Hospital, Boston, Mass., and the Departments of Medicine, Boston University, Boston, Mass., and University of Wisconsin, Madison, Wis.)

Gut, 1969, 10, 812-819

Studies on the intestinal flora¹

Part II Bacterial flora of the small intestine in patients with gastrointestinal disorders

B. S. DRASAR AND MARGOT SHINER

From the Department of Microbiology, Wright-Fleming Institute, St Mary's Hospital, and The Medical Research Council Gastroenterology Unit, Central Middlesex Hospital, London

SUMMARY The type and distribution of bacteria in the jejunal juice of patients with a variety of gastrointestinal conditions that might affect the small intestinal flora were examined.

Bacterial colonization of the jejunum defined, in this context, as the occurrence of a bile salt-tolerant flora consisting of both aerobic and anaerobic bacteria qualitatively resembling that of faeces, was observed only in patients with some form of blind loop. Prominent among the bacteria isolated from these colonized juices were non-sporing anaerobic bacteria, most usually *Bacteroides*, able to hydrolyse bile salts.

No simple correlation between the patient's fat excretion and bacterial colonization of the jejunum could be demonstrated.

- Gram negativos (*Escherichia coli* y *Klebsiella*, *Pseudomonas aeruginosa*, *Enterobacter spp*, and *Enterococcus spp*) → SIBO
- *Methanosphera stadmaniae* y *Methanobrevibacter smithii* (Arqueas) → IMO

Losurdo G, Salvatore D'Abramo F, Indelicati G, et al. The Influence of Small Intestinal Bacterial Overgrowth in Digestive and Extra-Intestinal Disorders. *Int J Mol Sci* 2020;21(10):3531

- Metabolización de aminoácidos, desconjugación de ácidos biliares, consumo de Vitamina B12, síntesis de ácido fólico, y daño de la mucosa.

The logo for World Journal of Gastroenterology, featuring the letters 'W', 'J', and 'G' in a stylized, white, cursive font, each contained within a black square.

World Journal of
Gastroenterology

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World J Gastroenterol 2023 June 14; 29(22): 3400-3421

DOI: 10.3748/wjg.v29.i22.3400

ISSN 1007-9327 (print) ISSN 2219-2840 (online)

REVIEW

Epidemiology of small intestinal bacterial overgrowth

Irina Efremova, Roman Maslennikov, Elena Poluektova, Ekaterina Vasilieva, Yury Zharikov, Andrey Suslov, Yana Letyagina, Evgenii Kozlov, Anna Levshina, Vladimir Ivashkin

- SIBO en el **33%** de pacientes con diferentes patologías gastroenterológicas (test del aliento)
- El riesgo aumenta con **la edad** (~~sexo~~ y ~~raza~~)
- Asociado con: fumar, meteorismo, dolor abdominal, y anemia.

Factores protectores frente al SIBO

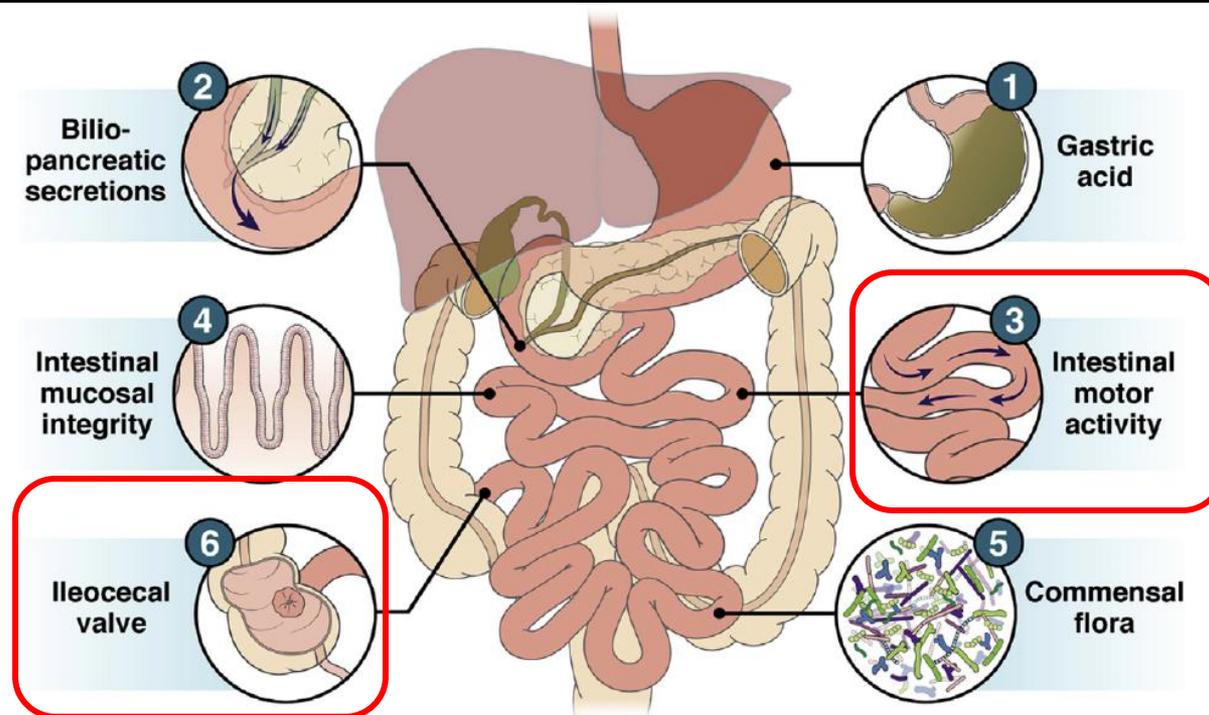


Figure 1. Factors that protect against the development of SIBO in health and that may be susceptible to disruption in disease.

Factores de riesgo

Table 1. Diseases and Disorders Associated With Small Intestinal Bacterial Overgrowth—A Pathophysiological Approach

Abnormal small intestinal motility	Anatomic abnormalities	Hypochlorhydria	Immune deficiency	Multifactorial	Relationship to SIBO unclear
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Efremova I *et al.* Epidemiology of SIBO

Table 1 Association of small intestinal bacterial overgrowth with various diseases

Disease	Prevalence of SIBO	OR
Functional digestive diseases		
Functional dyspepsia	17.2%-53.4%	4.3
Irritable bowel syndrome	31.0%-36.7%	3.7
Functional abdominal bloating/distention	43%-68%	
Functional constipation	78%	
Functional diarrhea	69%	

Quigley EMM, Murray JA, Pimentel M. **AGA Clinical Practice Update on Small Intestinal Bacterial Overgrowth: Expert Review.** *Gastroenterology.* 2020 Oct;159(4):1526-1532

Efremova I, et al. **Epidemiology of small intestinal bacterial overgrowth.** *World J Gastroenterol.* 2023 Jun 14;29(22):3400-3421.

Table 1 Association of small intestinal bacterial overgrowth with various diseases

Disease	Prevalence of SIBO	OR
<u>Organic (non-functional) digestive diseases</u>		
Multiple sclerosis	38.1%	4.5
<u>Restless legs syndrome</u>	69%	19.8
Alzheimer's disease	49%	3.35
Autism	31.0%	4.35
Spinal cord injuries	37.5%-38.5%	
Parkinson's disease	46%	5.22
Rheumatic diseases		
<u>Systemic sclerosis</u>	34%	12.51
Behçet's disease	36%	
<u>Spondylarthropathy</u>	63%	32.9
Fibromyalgia	100%	
Other diseases		
Allergic asthma	67%	
Non-allergic asthma	43%	
Heart failure	41.7%-45.0%	7.14
<u>Pancreatic cancer</u>	63.3%	11.2
Cholangiocarcinoma	46.7%	5.7
Obstructive sleep apnea	30.8%	
<u>Post-COVID-19 irritable bowel syndrome</u>	93.3%	9.3
Deep vein thrombosis	69.8%	3.5
Rosacea	10%-46%	16.2

Signos y síntomas (inespecíficos)

Por la fermentación patológica de bacterias en I. Delgado:

- Malabsorción de nutrientes
- Alteración de la permeabilidad intestinal
- Inflamación
- Activación inmune



- Meteorismo, gas, flatulencia
- Distensión y/o dolor abdominal
- Diarrea
- Náuseas
- Estreñimiento
- Fatiga o pérdida de concentración.

Casos extremos: Esteatorrea, pérdida de peso, ferropenia, anemia, déficits de vitamina B12 y liposolubles, ácido fólico elevado y/o inflamación de la mucosa del I.delgado.

NO síntoma patognomónico



Contrariamente a la creencia común, la diarrea y no la hinchazón tiene la asociación más fuerte con SIBO.

- Si FR → Diarrea y posible Sd malabsortivo
- Si No FR → Síntomas más ténues (débilmente predictivos de SIBO)

Ghoshal UC, Ghoshal U. **Small intestinal bacterial overgrowth and other intestinal disorders.** Gastroenterol Clin North Am 2017;46:103–20.

Quigley EMM, Murray JA, Pimentel M. **AGA Clinical Practice Update on Small Intestinal Bacterial Overgrowth: Expert Review.** Gastroenterology. 2020 Oct;159(4):1526-1532

Diagnóstico



¿Hay pruebas analíticas que nos ayuden a sospechar el SIBO?

Best Practice Advice 3

There is insufficient evidence to support the use of inflammatory markers, such as fecal calprotectin, to detect SIBO.

Best Practice Advice 4

Laboratory findings can include elevated folate and, less commonly, vitamin B-12 deficiency or other nutritional deficiencies.

DIAGNOSTICO DE SIBO

	Ventajas	Desventajas
<u>Aspirado y cultivo del intestino delgado</u>	<ul style="list-style-type: none">•Gold standard•Método directo•Técnicamente simple•Se puede realizar en cualquier unidad de endoscopias	<ul style="list-style-type: none">•Requiere mucho tiempo•Caro•Invasivo (sedación y endoscopia) •¿Técnicas asépticas de aspirado? Evitar aspiraciones durante la inserción del duodenoscopio•¿Dónde se toma la muestra? Sólo ID proximal•¿Qué cantidad? 3-5 ml•¿Manipulación de la muestra y cultivo?•Guantes estériles del personal•Capuchón estéril en la jeringa.•Procesamiento rápido microbiológico

Diagnóstico: $\geq 10^3$ UFC/mL en un aspirado duodenal/yeyunal como diagnóstico de SIBO (Consenso Norteamericano)

Erdogan A, et al. **Small intestinal bacterial overgrowth: Duodenal aspiration vs glucose breath test.** Neurogastroenterol Motil 2015;27:481–9.

Jacobs C, et al. **Dysmotility and proton pump inhibitor use are independent risk factors for small intestinal bacterial and/or fungal overgrowth.** Aliment Pharmacol Ther 2013;37:1103–11.

Test del aliento ... consensos

Received: 8 February 2021 | Accepted: 18 June 2021

DOI: 10.1002/ueg.212133

REVIEW ARTICLE

ueg journal WILEY

European guideline on indications, performance, and clinical impact of hydrogen and methane breath tests in adult and pediatric patients: European Association for Gastroenterology, Endoscopy and Nutrition, European Society of Neurogastroenterology and Motility, and European Society for Paediatric Gastroenterology Hepatology and Nutrition consensus

Heinz F. Hammer¹ | Mark R. Fox^{2,3} | Jutta Keller⁴ | Silvia Salvatore⁵ | Guido Basilisco⁶ | Johann Hammer⁷ | Loris Lopetuso^{8,9} | Marc Benninga¹⁰ | Osvaldo Borrelli¹¹ | Dan Dumitrascu¹² | Bruno Hauser¹³ | Laszlo Herszenyi¹⁴ | Radislav Nakov¹⁵ | Daniel Pohl³ | Nikhil Thapar^{11,16} | Marc Sonyi^{1,17} | European H₂-CH₄-breath test group

Open

Hydrogen and Methane-Based Breath Testing in Gastrointestinal Disorders: The North American Consensus

Ali Rezaie, MD, MSc, FRCP(C)¹, Michelle Buresi, MD², Anthony Lembo, MD³, Henry Lin, MD⁴, Richard McCallum, MD⁵, Satish Rao, MD⁶, Max Schmulson, MD⁷, Miguel Valdovinos, MD⁸, Salam Zakko, MD⁹, Mark Pimentel, MD, FRCP(C)¹ and on behalf of The North American Consensus group on hydrogen and methane-based breath testing

- OBJECTIVES:** Breath tests (BTs) are important for the diagnosis of carbohydrate maldigestion syndromes and small intestinal bacterial overgrowth (SIBO). However, standardization is lacking regarding indications for testing, test methodology and interpretation of results. A consensus meeting of experts was convened to develop guidelines for clinicians and research.
- METHODS:** Pre-meeting survey questions encompassing five domains; indications, preparation, performance, interpretation of results, and knowledge gaps, were sent to 17 clinician-scientists, and 10 attended a live meeting. Using an evidence-based approach, 28 statements were finalized and voted on anonymously by a working group of specialists.
- RESULTS:** Consensus was reached on 26 statements encompassing all five domains. Consensus doses for lactulose, glucose, fructose and lactose BT were 10, 75, 25 and 25 g, respectively. Glucose and lactulose BTs remain the least invasive alternatives to diagnose SIBO. BT is useful in the diagnosis of carbohydrate maldigestion, methane-associated constipation, and evaluation of bloating/gas but not in the assessment of oro-cecal transit. A rise in hydrogen of ≥ 20 p.p.m. by 90 min during glucose or lactulose BT for SIBO was considered positive. Methane levels ≥ 10 p.p.m. was considered methane-positive. SIBO should be excluded prior to BT for carbohydrate malabsorption to avoid false positives. A rise in hydrogen of ≥ 20 p.p.m. from baseline during BT was considered positive for maldigestion.
- CONCLUSIONS:** BT is a useful, inexpensive, simple and safe diagnostic test in the evaluation of common gastroenterology problems. These consensus statements should help to standardize the indications, preparation, performance and interpretation of BT in clinical practice and research.

SUPPLEMENTARY MATERIAL is linked to the online version of the paper at <http://www.nature.com/ajg>

Am J Gastroenterol 2017; 112:773–784; doi:10.1038/ajg.2017.46; published online 21 March 2017

Test de Aliento con lactulosa o glucosa

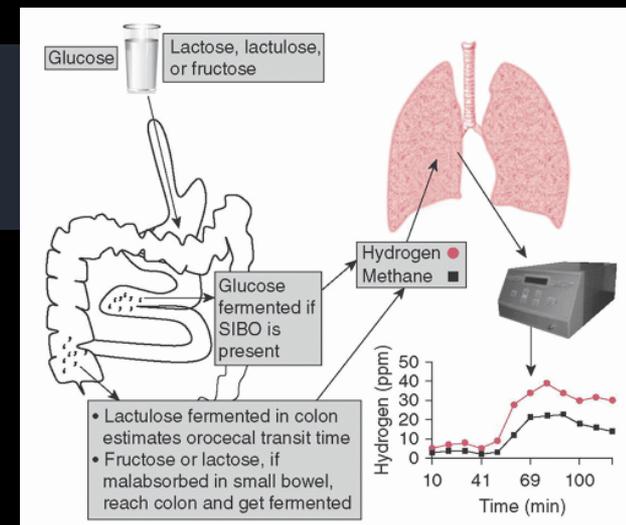
Células humanas incapaces de producir hidrógeno y metano

50-75 g de glucosa o 10 g de lactulosa

PROS

- Barato
- No invasivo
- Fácil de realizar
- Accesible
- **Kit para realizar en casa**

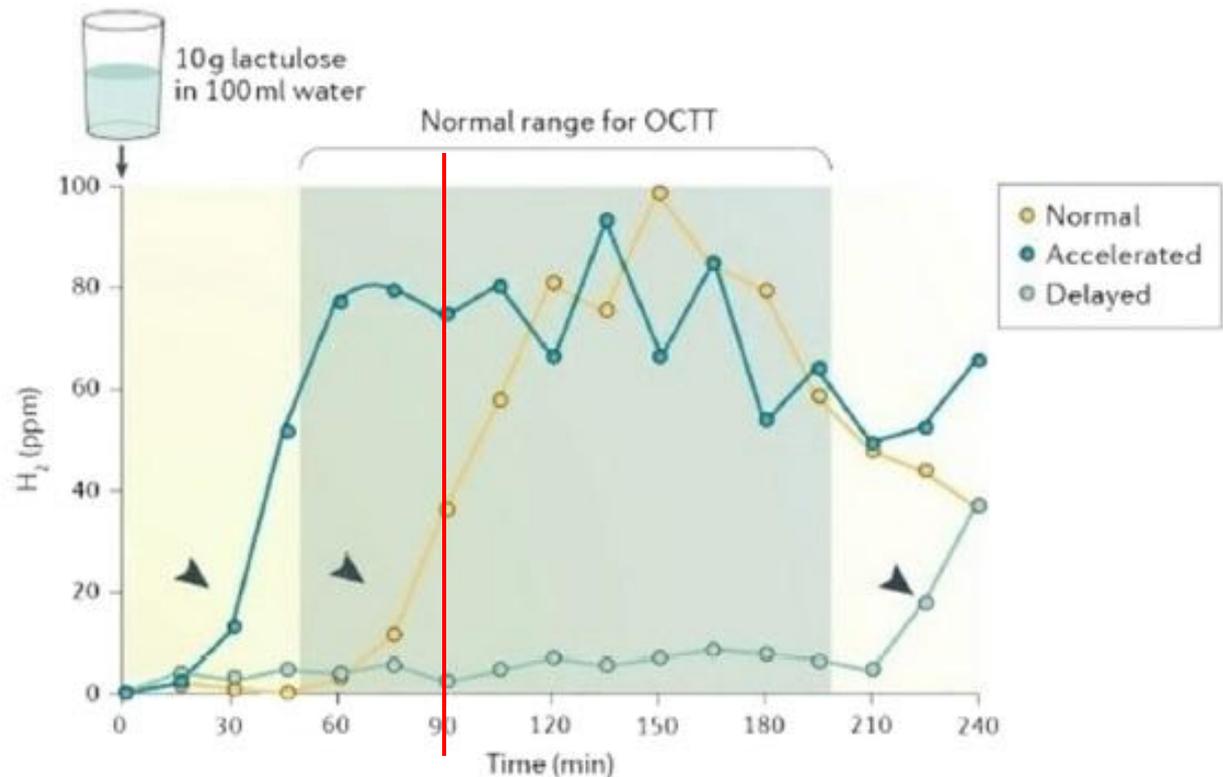
Rezaie A, Buresi M, Lembo A, et al. **Hydrogen and methane-based breath testing in gastrointestinal disorders: The North American consensus.** Am J Gastroenterol 2017;112:775–84.



CONTRAS

- Método indirecto
- No carbohidratos fermentables 24 hs antes
- Ayunas de 8-12 horas
- No ATB 4 semanas antes
- No procinéticos ni laxantes 1 semana antes
- Antiséptico oral
- Suspender fármacos que alteran la motilidad
- Toma de sustrato (glucosa o lactulosa)
- Tiempo (1.5-3 horas) → No tabaco ni ejercicio.
- Si realizados en casa → Falta de control pretest y durante el test

Fig. 1 Lactulose H₂ breath test for measurement of oro-cecal transit time. Representative lactulose H₂ breath tests (LHBTs) are shown for accelerated (30 min), normal (75 min), and delayed (225 min) oro-cecal transit times (OCTTs). The test requires H₂ measurements at regular intervals after ingestion of lactulose. H₂ values of >10 ppm over basal values followed by at least two subsequent increments (arrows) indicate cecal delivery of the nonabsorbable substrate bacterial metabolism. This increase in H₂ exhalation normally occurs 50-200 min after ingestion of the marker substance (normal range for OCTT marked in grey). From Ref. [14] with permission



- Determinación del tránsito orocecal
- La propia lactulosa puede acelerar el tránsito
- Elevación precoz de hidrógeno en:
 - tránsito rápido y
 - SIBO (elevación precoz?)

Test positivo si 2 o más elevaciones del Test >10 ppm antes de los 90 min:

- OK si FR
- Posible F+ si no FR (tránsito rápido?)

scintigraphic transit

Test de lactulosa

Sensibilidad: 31-68%.

Especificidad: 44-100%.

Test de glucosa

Sensibilidad: 20-93%.

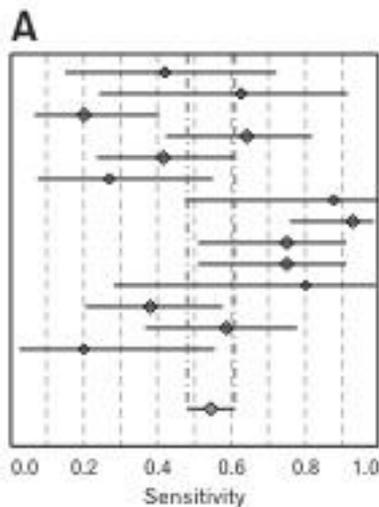
Especificidad: 30-86%.

Concordancia con
gold standard

65.5%

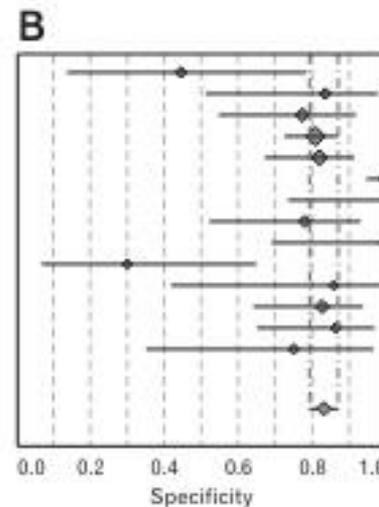
Aunque estudios muy heterogéneos y con limitaciones.

Khoshini et al. Dig Dis Sci 2008



	Sensitivity (95% CI)
Berthold 2009	0.42 (0.15-0.72)
Corazza 1990	0.63 (0.24-0.91)
Donald 1992	0.20 (0.07-0.41)
Erdogan 2015	0.64 (0.43-0.82)
Ghoshal 2006	0.41 (0.24-0.61)
Ghoshal 2014	0.27 (0.08-0.55)
Kaye 1995	0.88 (0.47-1.00)
Kerlin 1988	0.93 (0.76-0.99)
King 1986	0.75 (0.51-0.91)
Mac Mahon 1996	0.75 (0.51-0.91)
Pignata 1990	0.80 (0.28-0.99)
Rao 2018	0.38 (0.21-0.58)
Stotzer 2000	0.58 (0.37-0.78)
Sundin 2018	0.20 (0.03-0.56)

Pooled sensitivity = 0.54 (0.48 to 0.61)
Chi-square = 61.52; df = 13 (P = 0.0000)
Inconsistency (I-squared) = 78.9%



	Specificity (95% CI)
Berthold 2009	0.44 (0.14-0.79)
Corazza 1990	0.83 (0.52-0.98)
Donald 1992	0.77 (0.55-0.92)
Erdogan 2015	0.81 (0.72-0.87)
Ghoshal 2006	0.82 (0.67-0.92)
Ghoshal 2014	1.00 (0.94-1.00)
Kaye 1995	1.00 (0.74-1.00)
Kerlin 1988	0.78 (0.52-0.94)
King 1986	1.00 (0.69-1.00)
Mac Mahon 1996	0.30 (0.07-0.65)
Pignata 1990	0.86 (0.42-1.00)
Rao 2018	0.83 (0.64-0.94)
Stotzer 2000	0.86 (0.65-0.97)
Sundin 2018	0.75 (0.35-0.97)

Pooled specificity = 0.83 (0.79 to 0.87)
Chi-square = 54.76; df = 13 (P = 0.0000)
Inconsistency (I-squared) = 76.3%

Test de Glucosa → No produce aumento del tránsito intestinal

Losurdo G, et al.

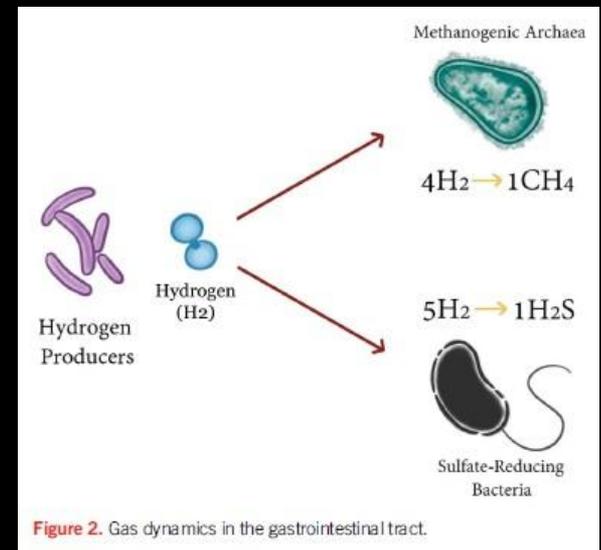
Breath Tests for the Non-invasive Diagnosis of Small Intestinal Bacterial Overgrowth: A Systematic Review with Meta-analysis. J Neurogastroenterol Motil 2020;26(1):16-28

Interpretación de pruebas de aliento

- Un aumento absoluto en el **hidrógeno de ≥ 20 partes por millón (ppm) por encima del valor inicial dentro de los 90 minutos** en la prueba de aliento con lactulosa/glucosa es diagnóstico de SIBO
- Un nivel de **metano ≥ 10 ppm en cualquier momento durante la prueba** es diagnóstico de **sobrecrecimiento metanógeno intestinal (IMO)**

- El término IMO describe esta situación con mayor precisión que el de SIBO, ya que los metanógenos no son bacterias y también pueden crecer demasiado **en el colon** y no solo en el intestino delgado.
- *Methanobrevibacter smithii*: *arquea* metanógena clave responsable de la producción de metano, reciclando hidrógeno (con CO₂) en el intestino humano.
- **El grado de estreñimiento** está asociado con los niveles elevados de metano en el test de aliento.

Test de Metano + IMO



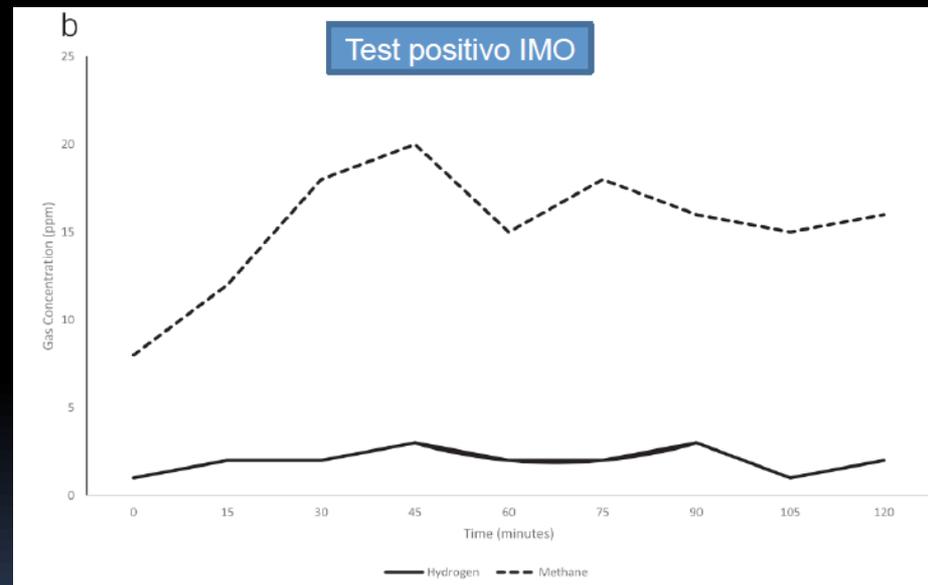
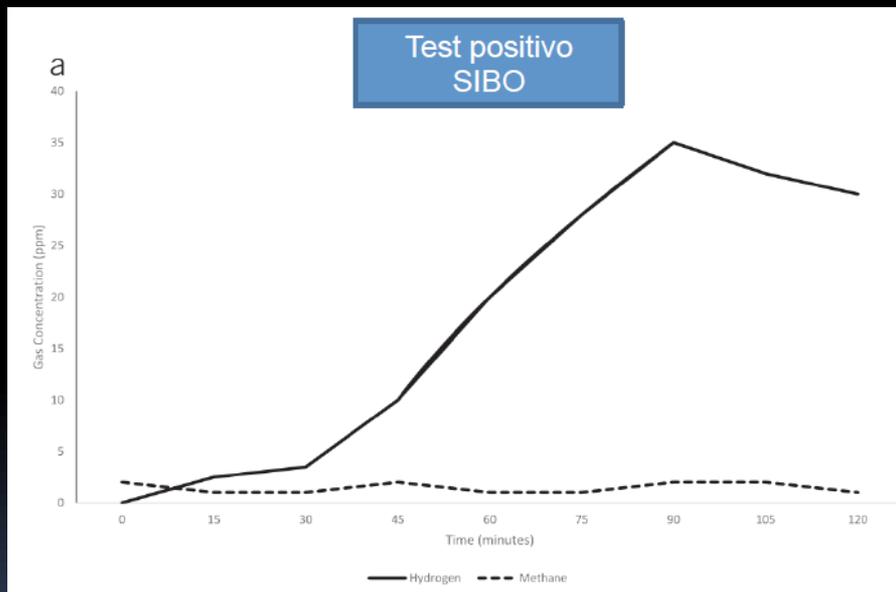
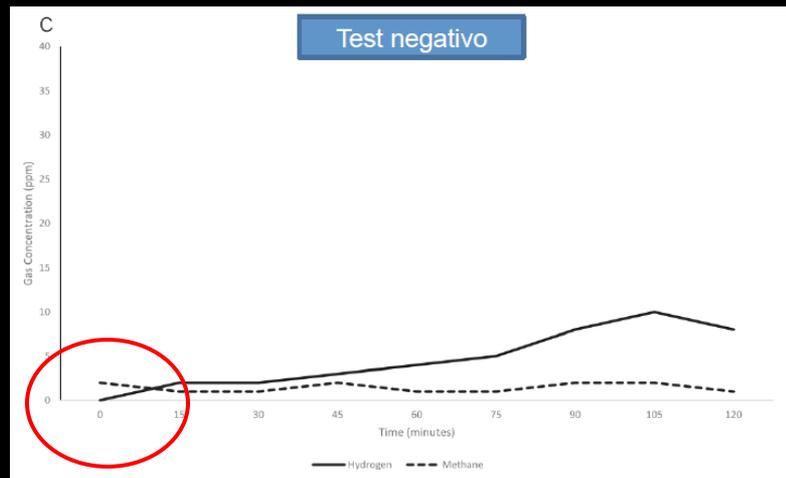
Aumento de H₂ > 20ppm entre 90 y 120min del inicio



Presencia de niveles de CH₄ > 10ppm en cualquier momento

IMO: INTESTINAL METHANOGEN OVERGROWTH

Resultados test aliento



10-30% de personas NO PRODUCEN HIDRÓGENO

¿Pruebas para determinar las causas de SIBO?

La mayoría de los pacientes con **SIBO establecido** tienen una **afección subyacente conocida**

En pacientes sin factores de riesgo para SIBO, valorar PC:

- **Pruebas de laboratorio** para descartar otras causas de síntomas similares (p. ej., celíaca), que pueden coexistir con SIBO.
- En pacientes con diarrea crónica o anemia ferropénica → **estudios endoscópicos**.
 - **Gastroscopia y colonoscopia** para descartar condiciones predisponentes (p. ej., gastritis atrófica y enfermedad de Crohn).
 - Si la evaluación endoscópica no es diagnóstica, valorar **estudio de imagen RX del intestino delgado** para evaluar si hay obstrucción parcial, dilatación, inflamación, divertículos o una fístula.
 - TC de abdomen?



Test de glucosa o lactulosa

Recomendado

Dx de SIBO en SII 

Dx de SIBO en pacientes sintomáticos con tnos motilidad

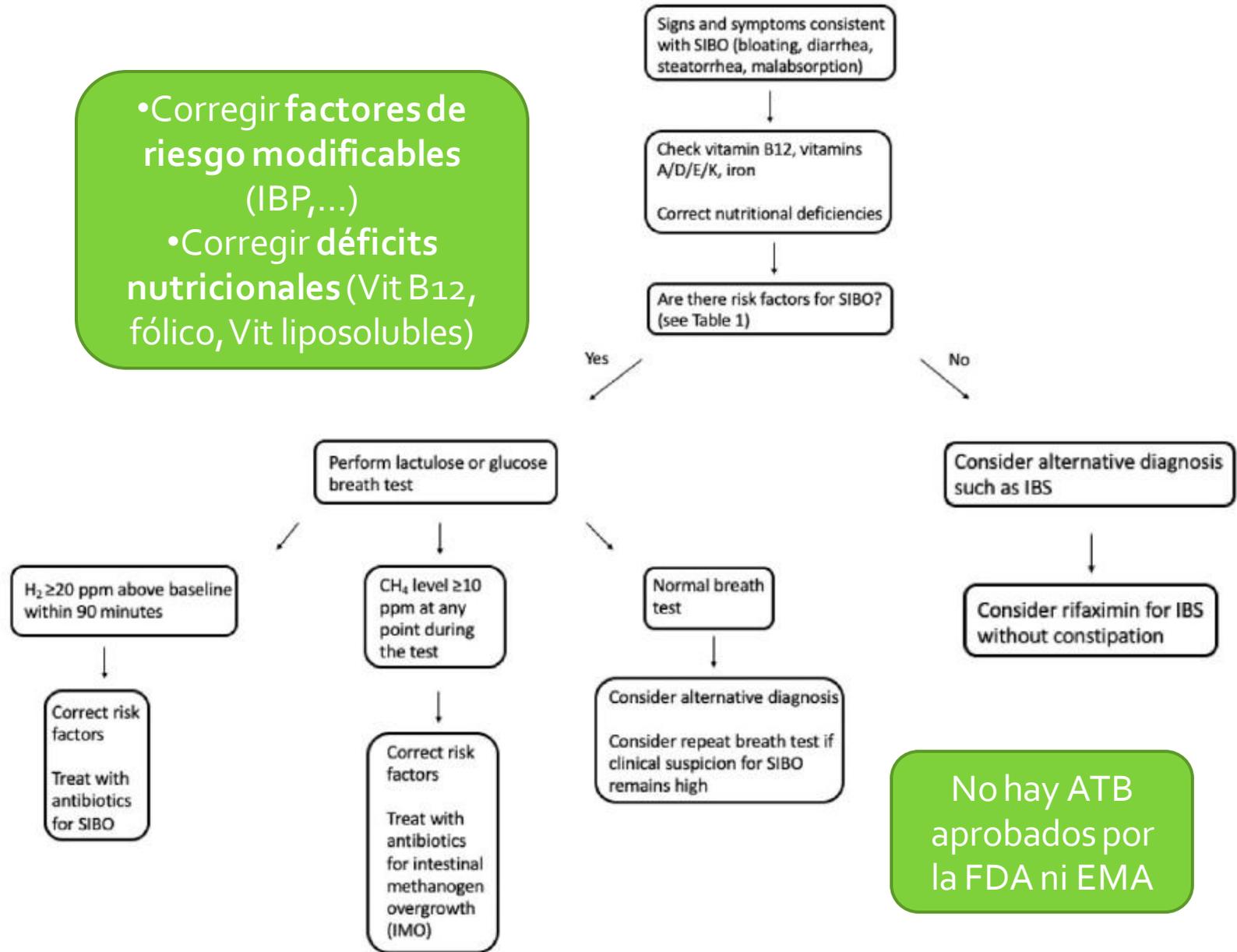
Dx de SIBO en pacientes sintomáticos con cirugía abdominal previa

Dx de IMO en pacientes sintomáticos con estreñimiento

No recomendado

Pacientes asintomáticos con IBPs

- Corregir factores de riesgo modificables (IBP,...)
- Corregir déficits nutricionales (Vit B12, fólico, Vit liposolubles)



No hay ATB aprobados por la FDA ni EMA



Tratamiento

Table 2

Proposed antibiotic treatment regimens for small intestinal bacterial overgrowth and intestinal methanogen overgrowth (typically given as a 7–10 d course)

SIBO	IMO
Rifaximin (800–1200 mg once daily)	Neomycin (500 mg 2 times daily)
Ciprofloxacin (250 mg 2 times daily)	Neomycin (500 mg 2 times daily) and rifaximin (400 mg 3 times daily)
Norfloxacin (800 mg once daily)	
Metronidazole (250 mg 3 times daily)	
Trimethoprim/sulfamethoxazole (160/800 mg 2 times daily)	
Doxycycline (100 mg 2 times daily)	
Amoxicillin-clavulanic acid (500 mg 3 times daily)	
Tetracycline (250 mg 4 times daily)	
Neomycin (500 mg 2 times daily)	

- Bajo nivel de evidencia.
- Tasas de respuesta variables (59-63%) (600 -1600 mgr/día; 7-28 días)
- Normalización del Test del aliento – 50%
- Mejoría de los síntomas – 81%

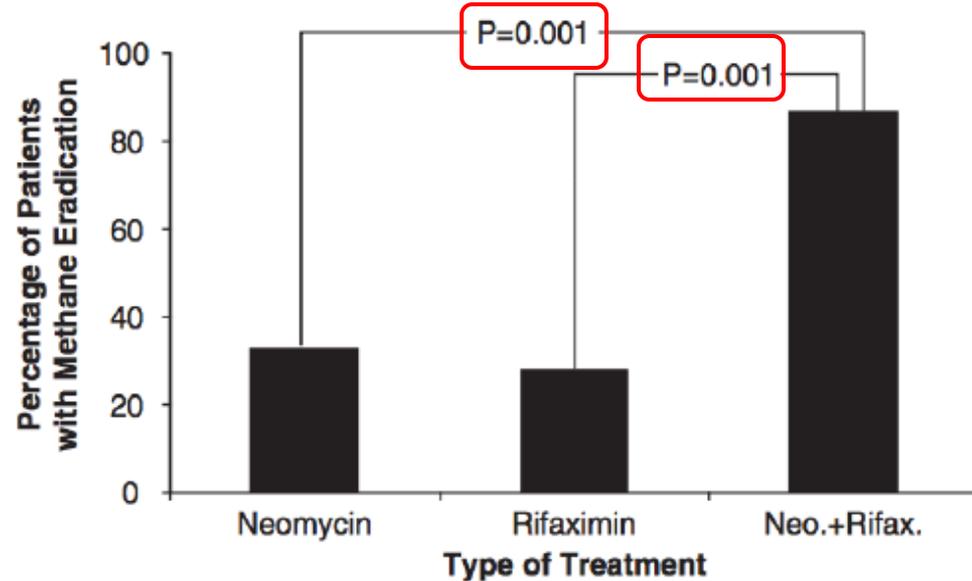
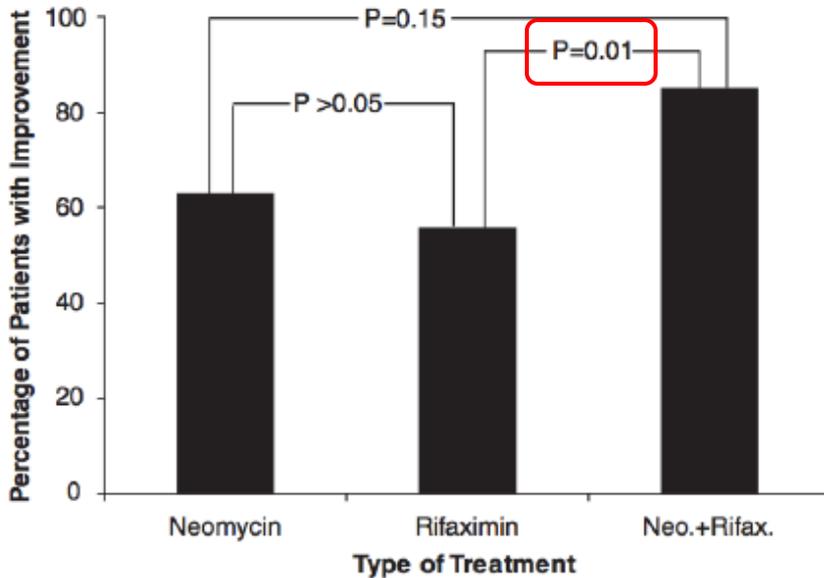
Pimentel M, et al. **Normalization of lactulose breath testing correlates with symptom improvement in irritable bowel syndrome: A double-blind, randomized, placebo-controlled study.** Am J Gastroenterol 2003;98:412–9.

Low K, et al. **A combination of rifaximin and neomycin is most effective in treating irritable bowel syndrome patients with methane on lactulose breath test.** J Clin Gastroenterol 2010;44:547–50.

Tratamiento IMO

IMO

→ Neomicina 500mg/12h + rifaximina 400mg/8h durante 10 días



Low K, et al. A combination of rifaximin and neomycin is most effective in treating irritable bowel syndrome patients with methane on lactulose breath test.

J Clin Gastroenterol 2010;44:547-50

RESPUESTA AL TRATAMIENTO Y RECURRENCIA

- 40% de pacientes con SIBO tienen síntomas persistentes después del tratamiento antibiótico inicial.
- El SIBO recurrente también es frecuente después del tratamiento con antibióticos:
 - Tasas de recurrencia 3, 6 y 9 meses tras tto con éxito con rifaximina del **13, 28 y 44%** (Estudio con n=80).
 - La recurrencia fue más probable en *adultos mayores, antecedentes de apendicectomía y uso crónico de IBP.*

Manejo posterior

- **Segundo curso de antibióticos si:**
 - tienen una mejoría parcial en los síntomas
 - recurrencia temprana (<3 meses).
- **Repetir prueba de aliento** para confirmar la recurrencia de SIBO:
 - Síntomas recurrentes **≥3 meses** después del tratamiento antibiótico inicial
- Los pacientes sin mejoría en los síntomas después de **dos cursos de terapia** con antibióticos o síntomas progresivos deben ser evaluados para diagnósticos alternativos.
- Régimen antibiótico subsiguiente: **cambio de Ab**, aunque en SIBO recurrente después del tratamiento con rifaximina pueden tratarse nuevamente con un curso de rifaximina o un antibiótico alternativo.

Profilaxis antibiótica en pacientes seleccionados

- **Pacientes con ≥ 4 episodios distintos y bien documentados dentro de un año y factores de riesgo para SIBO recurrente** (p. ej., síndrome de intestino corto, diverticulosis yeyunal).
- Antibióticos de forma periódica (5 a 10 días de cada mes o cada dos semanas).
- Los antibióticos **se cambian** para prevenir el desarrollo de resistencia a un fármaco específico.
- La frecuencia con la que se rotan los antibióticos varía de mensual a cada seis meses.

Diagnóstico

Diagnóstico similar a la Enfermedad Celiaca?



EDITORIAL

Small intestinal bacterial overgrowth. A position paper of ASENEM-SEPD

SUMMARY OF RECOMMENDATIONS

1. The presently available clinical evidence suggests that most patients with nonspecific symptoms such as abdominal distension, meteorism, flatulence, intermittent diarrhea, and other abdominal complaints do not have SIBO. Therefore, we do not recommend that SIBO be ruled out using BT in patients with nonspecific digestive complaints lacking SIBO-predisposing factors
2. We recommend that SIBO be ruled out in patients with risk factors such as Intestinal surgery or motility-impairing conditions, with impaired quality of life, nutritional deficiencies or severe symptoms, carefully selecting the diagnostic method and substrate to be used
3. We recommend that glucose rather than lactulose be used as BT substrate given its higher sensitivity and specificity
4. We recommend that BTs for SIBO diagnosis be interpreted by specialized medical staff
5. Systematic antibiotic use should be avoided in patients with highly prevalent functional conditions such as irritable bowel syndrome

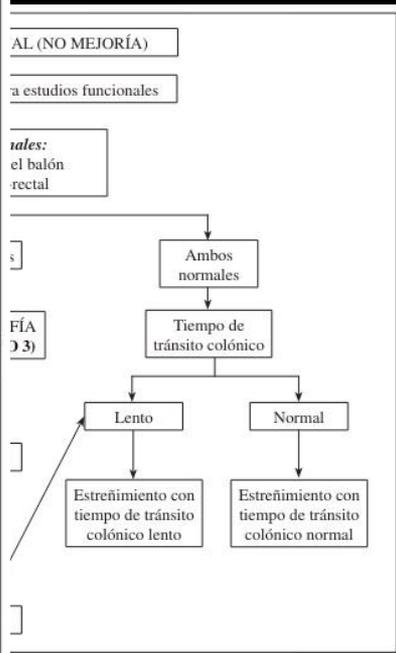
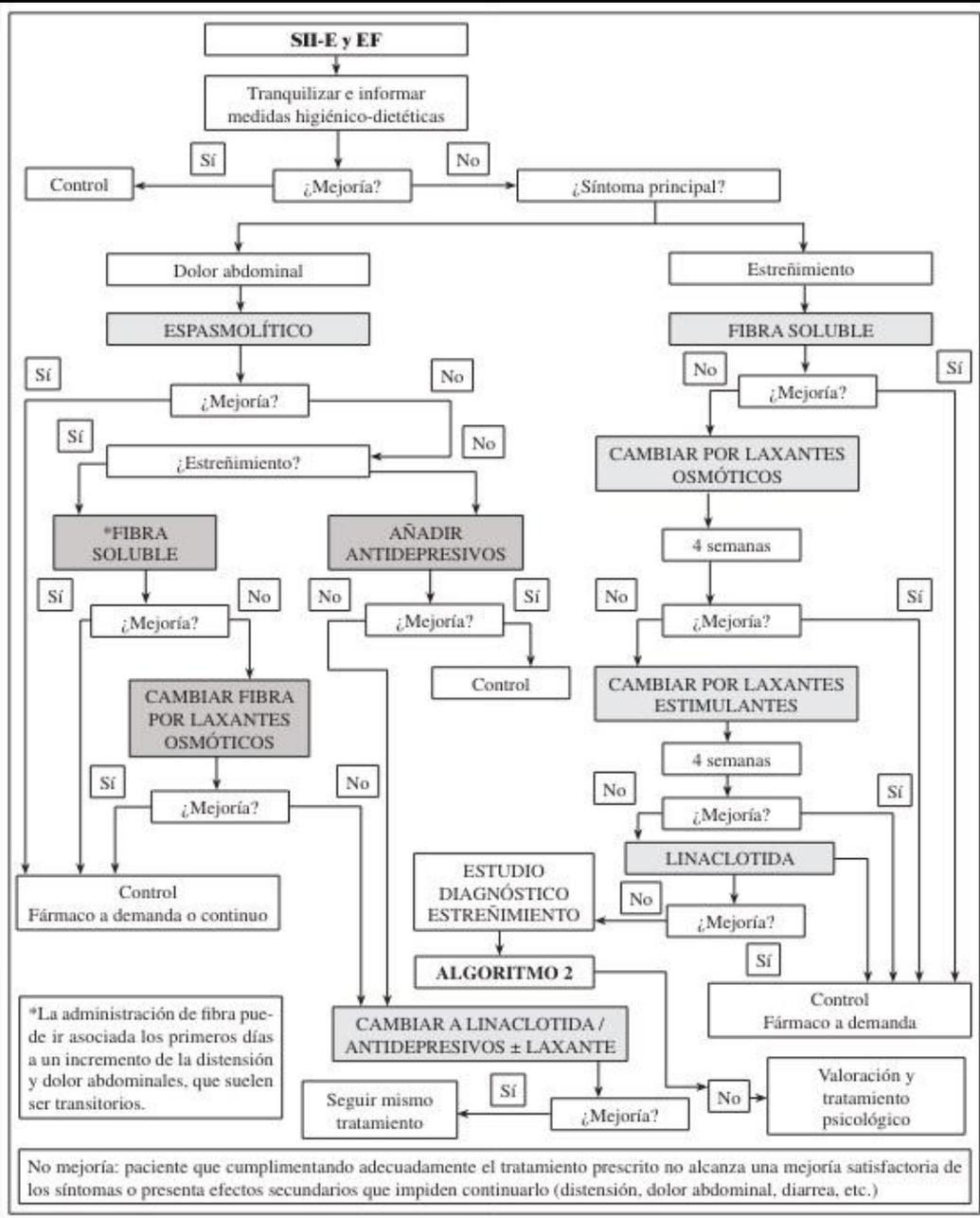
Conflict of interests: the authors declare no conflict of interest.

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DOI: 10.17235/reed.2023.10027/2023



Figura 2 Algoritmo diagnóstico del síndrome... ver figura 1 de la segunda parte. febrero 20...



Limitaciones/zonas grises

- No búsqueda correcta de Factores de riesgo
- No hay un Test "gold standard" para el diagnóstico de SIBO
- La sensibilidad y especificidad de los Test del aliento para SIBO son mejorables



Conclusiones

- Son precisos estudios para definir mejor la microbioma del intestino delgado con técnicas novedosas de genómica y metabolómica
- La diarrea, más que el meteorismo, parece ser más específica de SIBO
- Signos de malabsorción son infrecuentes en ausencia de factores de riesgo (estasis)
- En pacientes con estreñimiento crónico se debe pensar en IMO
- Se objetiva SIBO en un porcentaje de pacientes con SII, sin embargo, no se puede aconsejar investigar a todo este grupo de pacientes
- Necesitamos Test diagnósticos más precisos
- Tratamientos más específicos
- Valorar la incorporar esta posibilidad de diagnóstico y tratamiento en los algoritmos de las diferentes patologías/síndromes digestivos



Gracias