19e Journée de pathologie infectieuse pédiatrique ambulatoire

Ballonnement, douleurs abdominales récidivantes, microbiome….

Marc Bellaïche
Robert Cohen

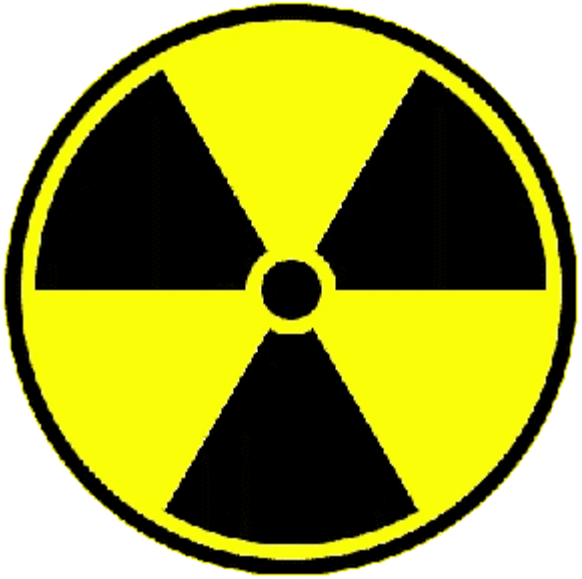
- Sacha 4 mois (antécédents pathologiques familiaux ou personnel = 0, croissance staturo-pondérale normale) présente depuis l'âge de 3 semaines, des épisodes de pleurs, ballonnement intestinal, gaz, et alterne constipation, selles normales et parfois molles
- Il a toujours été alimenté par un allaitement artificiel
- Bien entendu ont été essayé
  - Ostéopathie…
  - Biogaia®, Polysilane®, Débridat®, même de l'Inexium®… sans succès
  - 6 laits ont été essayés dont deux laits AR (avec ou sans caroube), des laits à base de riz et un hydrolysat
  - le Diallertest® et les IgE spécifiques lait sont -

Un test bref qui en dit long …

Il consulte un gastro-entérologue pédiatre qui finit par réaliser un Breath-test qui est positif et conclu

1) Votre enfant pullule …

Votre enfant pullule, il faut le décontaminer !



Proposition indécente ou bien sentie ?

- Il faut le décontaminer …
- Il propose un traitement par Nifuroxazide+ Metronidazole (Panfurex*, Flagyl*)
- Les parents avant de lui donner les antibiotiques vous demandent votre avis

Pensez vous que les symptômes présentés sont liés à une PMI ?

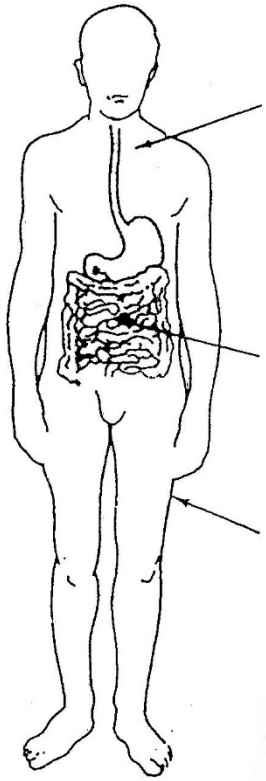
- Oui
- Non
- NSP

Conseillerez vous aux parents de donner les antibiotiques ?

- Oui
- Non
- NSP

La pullulation

La flore commensale de l'homme



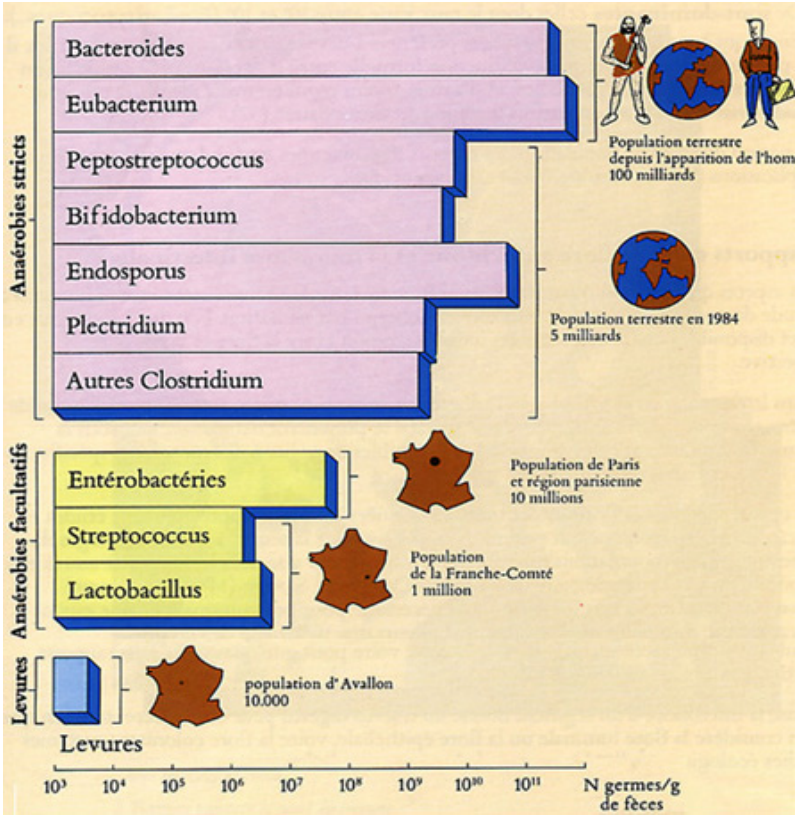
Corps: 10^{13} cellules

Tractus digestif: 10^{14} bactéries

Côlon 10^{11} /g

Peau: 10^{12} bactéries

10^{11} = 40 % Poids des selles



A quelle surface correspond la surface d'échange de l'intestin ?

- A : Table de ping-pong
- B : Terrain de badminton
- C : Terrain de basket
- D : Terrain de foot
- E : Terrain de golf

A quelle surface correspond la surface d'échange de l'intestin ?

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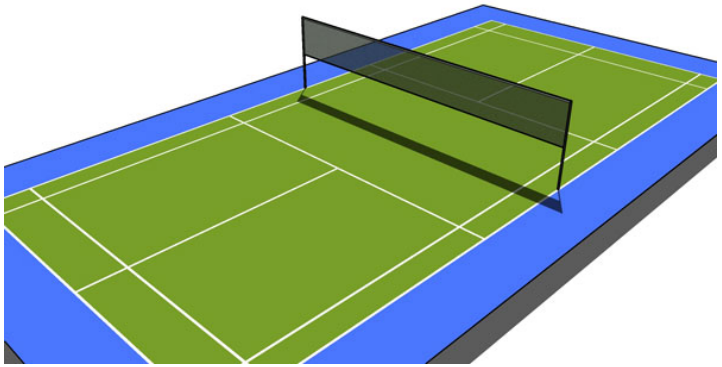
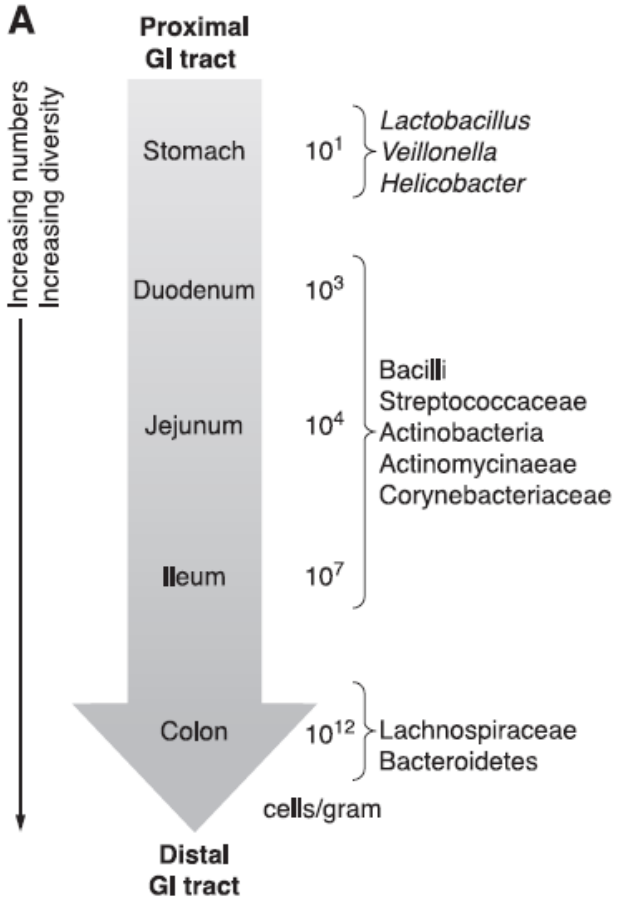
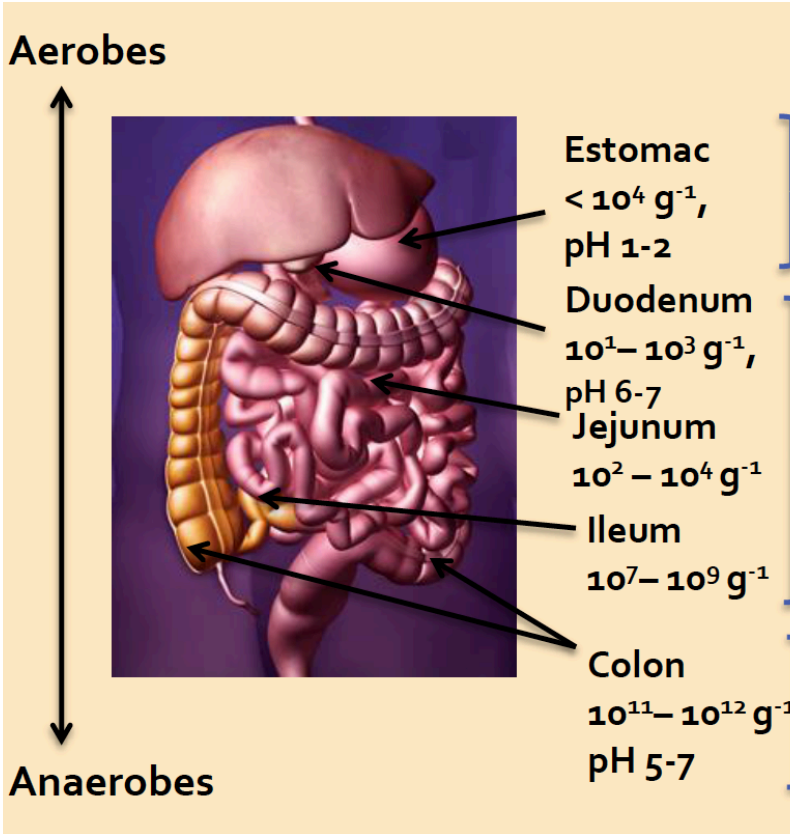
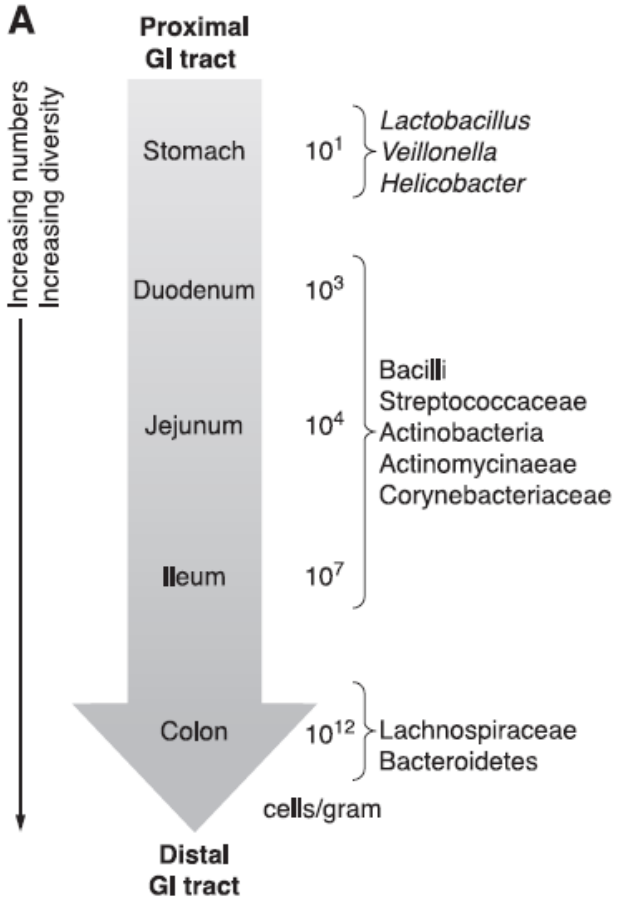


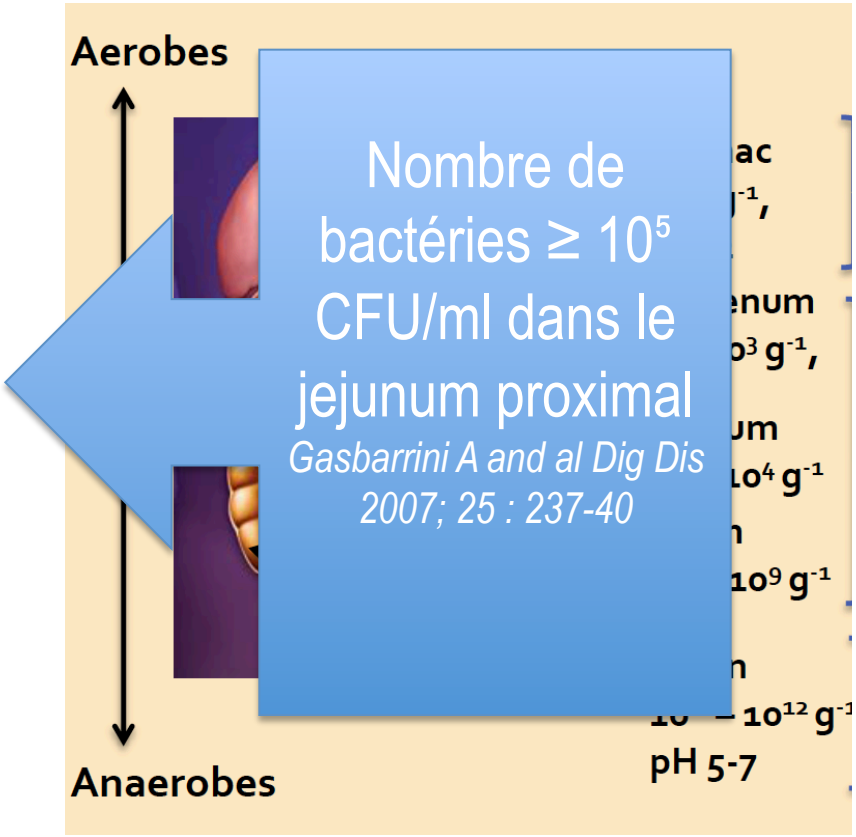
80 m^2





SEKIROV, et al. Gut Microbiota in Health and Disease. Physiol Rev 90: 859–904, 2010





SEKIROV, et al. Gut Microbiota in Health and Disease. Physiol Rev 90: 859–904, 2010

Small-bowel bacterial overgrowth in children with chronic diarrhea, abdominal pain, or both

D. de Boissieu, MD, M. Chaussain, MD, J. Badoual, MD, J. Raymond, MD, and C. Dupont, MD, PhD

(J PEDIATR 1996;128:203-7)

Table III. Clinical symptoms in patients in groups 1 and 2

	Group 1 (n =18)	Group 2 (n = 35)
Age at onset of symptoms (yr)	0.6 ± 0.9	3 ± 3[b]
Duration of symptoms (mo)	6 ± 5	10 ± 12
(Range)	(2-18)	(1-48)
Symptoms: n (%)		
Abdominal pain	13 (72)	25 (71)
Diarrhea	15 (83)	24 (68)
Fetid stool	13 (72)	11 (31)[a]
Presence of mucus in stools	11 (61)	10 (28)[a]
Flatulence	15 (83)	15 (43)[a]
Bloated abdomen	7 (39)	8 (23)
Regurgitation	7 (39)	1 (3.7)[a]
Vomiting	1 (4)	3 (11)
Events before onset of symptoms		
Gastroenteritis (n)	1	1
Antibiotic therapy (n)	2	4

[a] $p < 0.01$.
[b] $p < 0.001$.

Table II. Mean VAS values of gastrointestinal symptoms in patients with IBS, with and without abnormal H_2/CH_4 LBT results

	Abnormal LBT (n = 28)	Normal LBT (n = 15)
Abdominal pain	6.2 ± 1.2	5.2 ± 0.9*
Constipation	6.4 ± 1.2	5.6 ± 1.1*
Diarrhoea	5.9 ± 1.5	5.0 ± 1.3*
Bloating	5.8 ± 1.1	3.6 ± 1.2**
Flatulence	5.4 ± 1.1	4.7 ± 1.3*

*Not statistically significantly.

**$P < .05$.

IBS :

Infection

Bactérienne

Syndrome ?

Pratique ambulatoire

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Prevalence of Small Intestinal Bacterial Overgrowth in Children with Irritable Bowel Syndrome: A Case-Control Study

E. Scarpellini, MD, V. Giorgio, MD, M. Gabrielli, PhD, E. C. Lauritano, MD, A. Pantanella, MD, C. Fundarò, MD, and A. Gasbarrini, PhD

Objective To assess the prevalence of small intestinal bacterial overgrowth (SIBO) in children affected by irritable bowel syndrome (IBS).

Study design Consecutive children affected by IBS according to Rome II criteria (n = 43) were enrolled at the Gemelli Hospital, Catholic University of Rome. The control population (n = 56) consisted of healthy subjects without IBS symptoms, similar to patients for age, sex, and social background. All subjects underwent lactulose/methane breath test (LBT) to assess small intestinal bacterial overgrowth.

Results The prevalence of abnormal LBT result was significantly higher in patients with IBS (65%, 28/43) with respect to control subjects (7%, 4/56; OR 3.9, 95% CI 7.3-80.1, $P < .00001$). Patients with abnormal LBT showed a trend toward a worse visual analog scale score with respect to children with IBS without SIBO, but a significant statistical difference was observed only for bloating.

Conclusions Results from this study suggest a significant epidemiologic association between SIBO and IBS in childhood. Placebo-controlled interventional studies with antibiotics used to treat bacterial overgrowth are warranted to clarify the real impact of the disease on IBS symptoms. *(J Pediatr 2009;155:416-20)*.

World Journal of Gastroenterology

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TOPIC HIGHLIGHT

WJG 20th Anniversary Special Issues (4): Irritable bowel syndrome

Irritable bowel syndrome and small intestinal bacterial overgrowth: Meaningful association or unnecessary hype

Uday C Ghoshal, Deepakshi Srivastava

Core tip: Irritable bowel syndrome (IBS) has been conventionally thought to be a disorder without an organic basis. However, recently data are emerging to show that it may have organic basis at least in a subset of patients. Though several studies reported an association between small intestinal bacterial overgrowth (SIBO) and IBS, the frequency of SIBO reported to vary between 4% and 78%. The current review suggests that the association between SIBO and IBS is definite, but the studies reporting high prevalence of SIBO in IBS over-estimated its frequency due to use of fallacious diagnostic methods. Better test to diagnose SIBO in patients with IBS is highly needed.

Table 1 Summary of prevalence of small intestinal bacterial overgrowth in irritable bowel syndrome by different diagnostic methods *n* (%)

Ref.	Type of the study	Frequency of SIBO in cases	Frequency of SIBO in controls	Methane producers in cases	Methane producers in controls	Method for diagnosis
Park *et al*[86]	Prospective (Case-control)	34/76 (44.7)	16/40 (40)	19/76 (25)	10/40 (25)	LHBT
Scarpellini *et al*[88]	Prospective (Case-control)	28/43 (65)	4/56 (7)	4/43 (9.3)	0	LHBT
Carrara *et al*[14]	Prospective	55/127 (43)	NCG	ND	ND	LHBT
Mann and Limoges-Gonzales[87]	Prospective	89/258 (34.5)	NCG	ND	ND	LHBT
Nucera *et al*[89]	Prospective	64/98 (65)	NCG	ND	ND	LHBT
Pimentel *et al*[17]	Prospective	157/202 (78)	NCG	ND	ND	LHBT
Sachdeva *et al*[18]	Prospective (Case-control)	14/59 (23.7)	1/37 (2.7)	5/59 (8.5)	9/37 (24.3)	GHBT
Reddymasu *et al*[90]	Prospective	35/98 (36)	NCG	Data NA	ND	GHBT
Lombardo *et al*[91]	Prospective (Case-control)	49/200 (24.5)	3/50 (6)	ND	ND	GHBT
Ford *et al*[74]	Meta-analysis	595/1921 (31)	NCG	ND	ND	GHBT
Parodi *et al*[92]	Prospective (Case-control)	21/130 (16.1)	3/70 (4.2)	34/130 (26)	Data NA	GHBT
Rana *et al*[93]	Prospective (Case-control)	25/225 (11.1)	1/100 (1)	ND	ND	GHBT
Majewski *et al*[94]	Prospective (Case-control)	93/204 (46)	NCG	27/204 (13.2)	ND	GHBT
Cuoco and Salvangnini[75]	Retrospective	44/96 (45.8)	NCG	ND	ND	GHBT
Lupascu *et al*[95]	Prospective (Case-control)	20/65 (31)	4/102 (4)	ND	ND	GHBT
Ghoshal *et al*[16]	Prospective (Case-control)	11/129 (8.5)	1/51(2)	ND	ND	GHBT
Posserud *et al*[12]	Prospective (Case-control)	6/162 (4)	1/26 (4)	ND	ND	Hydrogen breath test and culture of small bowel aspirate

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Situations à risques

THE JOURNAL OF PEDIATRICS • www.jpeds.com CLINICAL AND LABORATORY OBSERVATIONS

Small Bowel Bacterial Overgrowth Associated with Persistence of Abdominal Symptoms in Children Treated with a Proton Pump Inhibitor

Agnieszka Sieczkowska, MD[1], Piotr Landowski, MD, PhD[1], Pawel Zagozdzon, MD, PhD[2], Barbara Kaminska, MD, PhD[1], and Carlos Lifschitz, MD[3]

Small bowel bacterial overgrowth (SBBO) was diagnosed in 22.5% of 40 children treated for 3 months with a proton pump inhibitor (PPI). Compared with those without SBBO, children with SBBO had higher frequency of abdominal pain, bloating, eructation, and flatulence. Patients with gastrointestinal symptoms after PPI treatment should be evaluated for SBBO rather than empirically prolonging PPI therapy. *(J Pediatr 2015;■:■-■).*

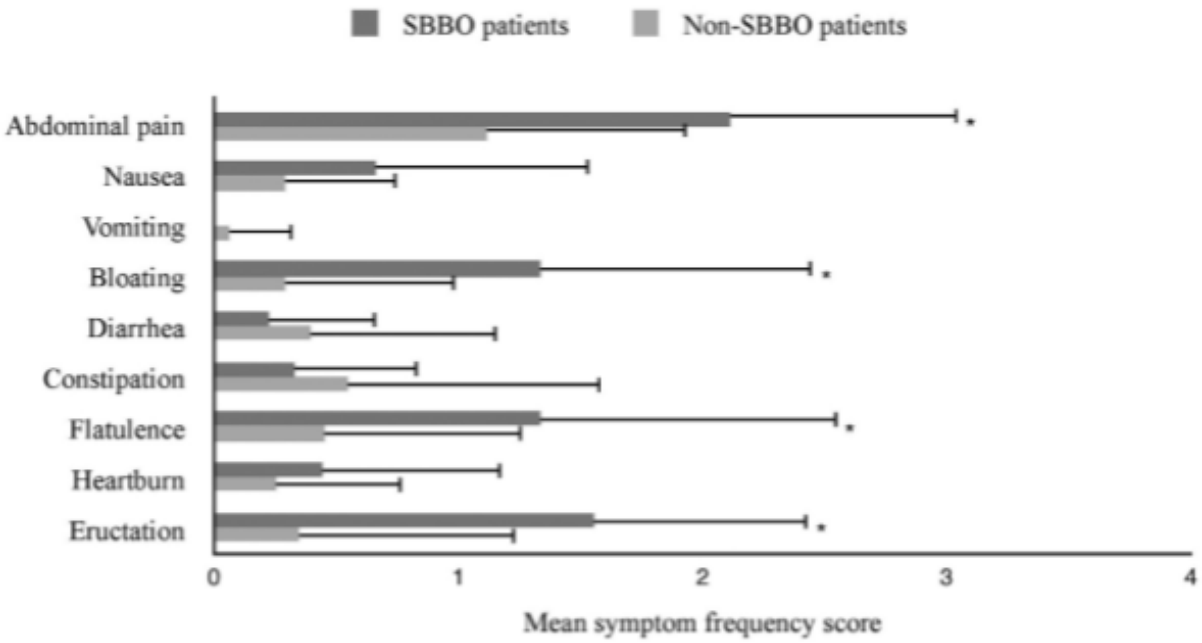
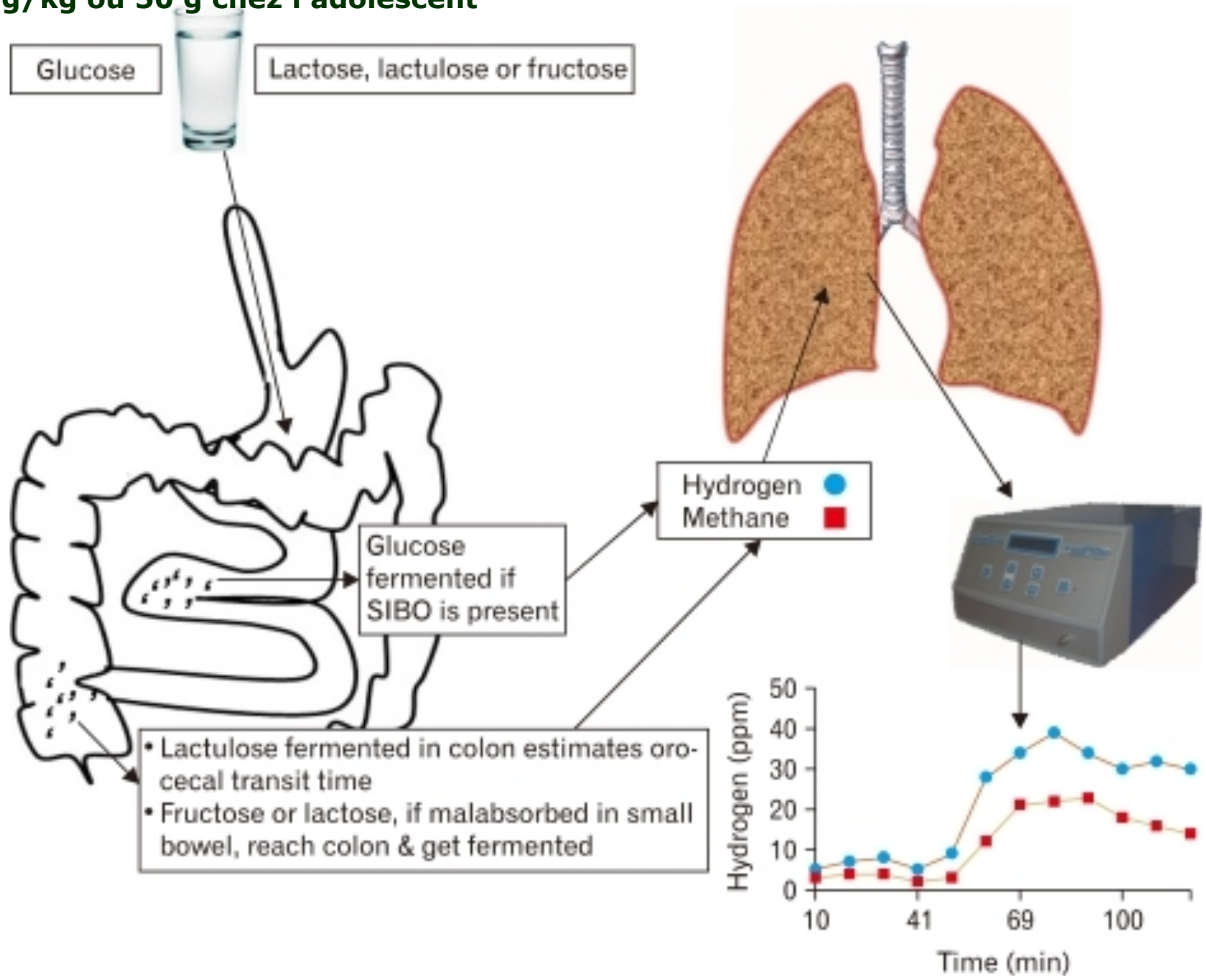


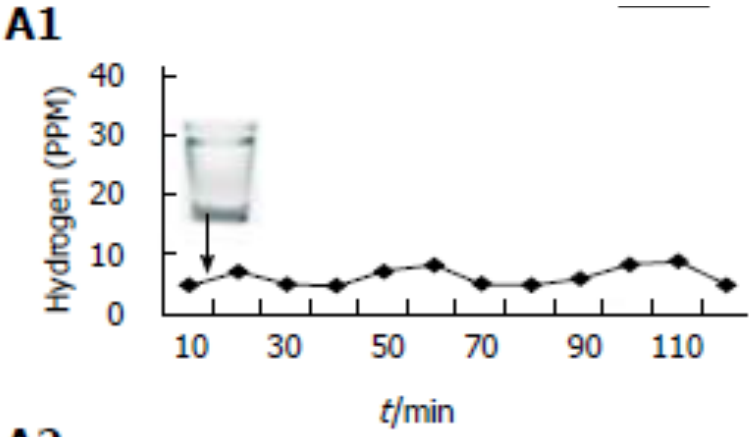
Figure. Mean symptom frequency score after PPI treatment in patients with and without SBBO. $^{*}P < .05$.

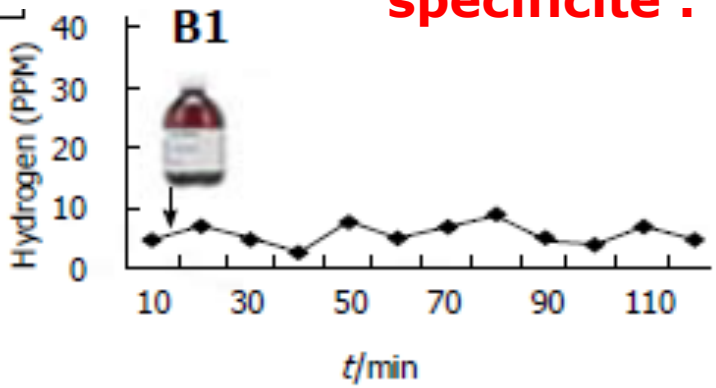
Comment faire le diagnostic ?

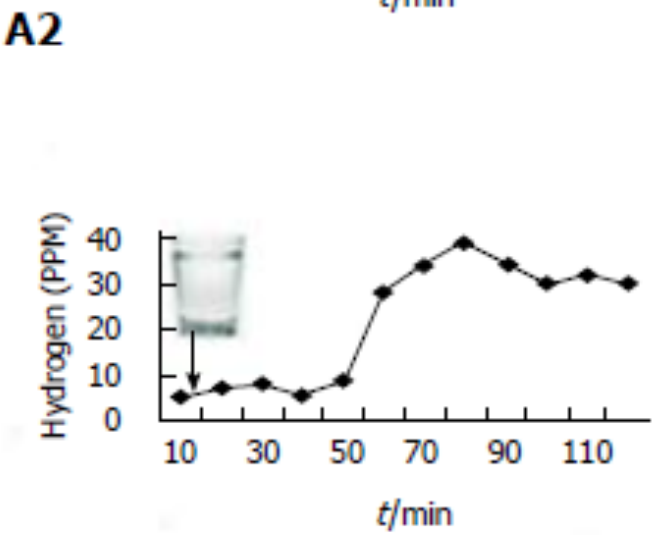
Dose glucose à ingérer après 12 h de jeûne :1 g/kg ou 50 g chez l'adolescent

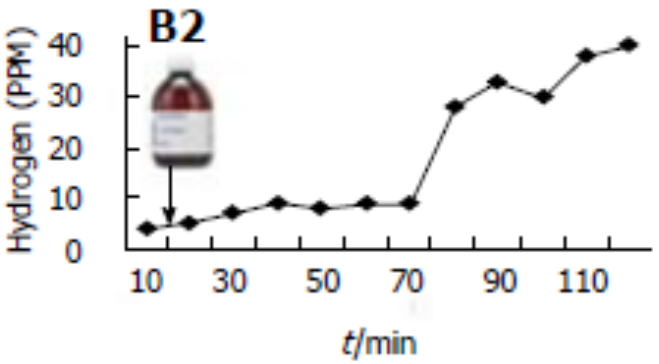


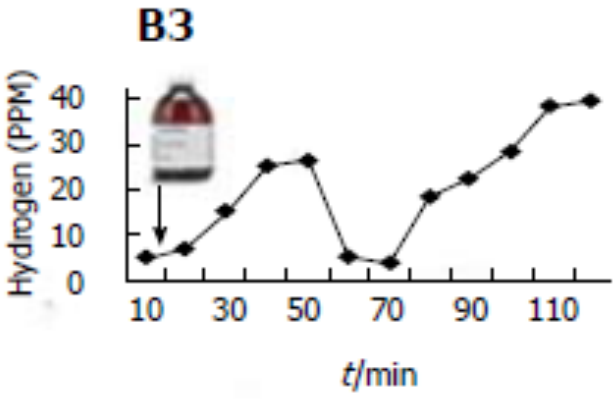
sensibilité : 75 %
spécificité : 90 %











↑ précoce de H2 >12ppm dans les 30 à 60 mn suivant l 'ingestion du glucose
taux basal H2 >20 ppm

Neurogastroenterology & Motility

Neurogastroenterol Motil (2015) doi: 10.1111/nmo.12516

Small intestinal bacterial overgrowth: duodenal aspiration *vs* glucose breath test

A. ERDOGAN,* S. S. C. RAO,* D. GULLEY,* C. JACOBS,† Y. Y. LEE*,‡ & C. BADGER*

*Section of Gastroenterology and Hepatology, Georgia Regents University, Augusta, GA, USA
†Carver College of Medicine, University of Iowa, Iowa City, IA, USA
‡School of Medical Sciences, Universiti Sains Malaysia, Kota Bharu, Kelantan, Malaysia

Traitement ?


astorama
ROUTE DE LIBOURNE
ARTIGUES
VOICI LA CAROTTE
A PLUS RAPIDE DU MONDE.
Moulinex
CATALOGUE QUELLE

Small-bowel bacterial overgrowth in children with chronic diarrhea, abdominal pain, or both

D. de Boissieu, MD, M. Chaussain, MD, J. Badoual, MD, J. Raymond, MD, and C. Dupont, MD, PhD

(J PEDIATR 1996;128:203-7)

Design: Patients were 53 children (aged 2 months to 12 years) with chronic diarrhea, abdominal pain, or both. Diagnosis of SBBO was defined with a BHT by a change in H_2 concentration of 10 ppm H_2 or more in expired air after an oral glucose load. Patients with a positive BHT result were included in group 1 and treated with a combination of colistin and metronidazole for 10 days; a second BHT was performed 1 month later. Group 2 comprised patients with a negative BHT result. Group 3 (n = 15) was a control group of healthy subjects, and group 4 (n = 6) a comparison group of subjects with bacteriologically documented SBBO.

Results: Eighteen patients (34%) had a positive BHT result and 35 a negative result. The BHT results were comparable in groups 1 and 4 and in groups 2 and 3, respectively. Fasting H_2 levels were higher in group 1 than in groups 2 ($p < 0.001$) and 3 ($p < 0.01$). In group 1, children were younger than in group 2 (1 ± 1 year vs 3.9 ± 3 years; $p < 0.001$) and diarrhea was frequent (83%), but 17% of patients had abdominal pain alone. Fetid stools ($p < 0.01$), mucus in stools ($p < 0.01$), and flatulence ($p < 0.05$) were more frequent in group 1 than in group 2. Antibiotic treatment of children in group 1 led to a rapid disappearance of symptoms and normalization of BHT results.

The Journal of Pediatrics
Volume 147, Issue 3, September 2005, Pages 410–411

Letters

The role of small bowel bacterial overgrowth in infantile colic

Jay A. Hochman, MD, Cathy Simms, RN

Show more

doi:10.1016/j.jpeds.2005.03.015

Get ri

In a randomized, double-blind trial, 8 infants were assigned to a 1-week treatment with metronidazole or placebo

Table. Study results

Subject	BHT - Baseline	Drug	Assess after 1st week	BHT – Follow-up	Assess—2nd week
01	Normal	Flagyl	Much better	Normal	A little better
02	Abnormal	Flagyl	No change	Abnormal	No change
03	Abnormal	Flagyl	A little better	Normal	Much worse
04	Normal	Flagyl	A little better	Abnormal	No change
05	Normal	Flagyl	No change	Normal	No change
06	Abnormal	Placebo	A little better	Normal	A little better
07	Normal	Placebo	No change	Normal	No change
08	Abnormal	Placebo	Much better	Abnormal	Much better

J Pediatr (Rio J). 2013;89(4):381–387

Jornal de Pediatria
www.jped.com.br

ORIGINAL ARTICLE

A double-blind placebo-controlled randomized trial on probiotics in small bowel bacterial overgrowth in children treated with omeprazole☆

Badriul Hegar[a], Esther I. Hutapea[b], Najid Advani[b], Yvan Vandenplas[c,*]

[a] MD. PhD. Department of Child Health, University of Indonesia, Dopok, Indonesia
[b] MD. Department of Child Health, University of Indonesia, Dopok, Indonesia
[c] MD. PhD. Department of Pediatrics, UZ Brussel, Vrije Universiteit Brussel, Brussels, Belgium

Results: After one month of proton pump inhibitor (PPI) treatment, 30% (21/70) had a positive breath test suggesting SBBO; of these 62% were symptomatic. Five children developed SBBO-like symptoms, but had a negative breath test; and 44 (63%) were symptom free and had a negative breath test. There was no difference in the incidence of positive breath tests in the probiotic *versus* the placebo group (33% *vs* 26.5%; p = 0.13).

Conclusions: Since symptoms suggesting SBBO developed in 26% of PPI-treated children, and since the glucose breath test was abnormal in 72% of these, this side-effect should be more frequently considered. The probiotic tested did not decrease the risk to develop SBBO.

La PMI à l'heure du microbiome …

PMI : une dysbiose intestinale ?

PM : problème quantitatif ou qualitatif ?

Microbiote intestinal

PMI : un microbiote ectopique ?

Table 2 Culture results of duodenal aspirates*

Culture results ($\geq 10^3$ CFU/mL)	Total, $N = 124$ (%)
Escherichia coli	15 (12.1)
Klebsiella oxcytoca	2 (1.6)
Klebsiella pneumonia	7 (5.6)
Enterobacter cloacea	2 (1.6)
Enterobacter aerogenes	2 (1.6)
Pseudomonas aeruginosa	1 (0.8)
Neisseria spp.	6 (4.8)
Hemophilus parainfluenzae	1 (0.8)
Hemophilus influenzae	1 (0.8)
Stenotrophomonas maltophilia	1 (0.8)
Bacteriodes vulgatus	4 (3.2)
Velionella spp.	1 (0.8)
Prevotella spp.	2 (1.6)
Alpha-hemolytic streptococcus	38 (30.6)
Non-hemolytic streptococcus	6 (4.8)
Beta-hemolytic streptoccus	1 (0.8)
Staphylococcus aureus	3 (2.4)
Coagulase negative staphylococcus	6 (4.8)
Diphtheroid bacilli	9 (7.3)
Rothia spp. *(Stomatococcus)*	4 (3.2)
Lactobacillus spp.	8 (6.5)
Clostridium perfringes	3 (2.4)
Bacillus spp.	1 (0.8)

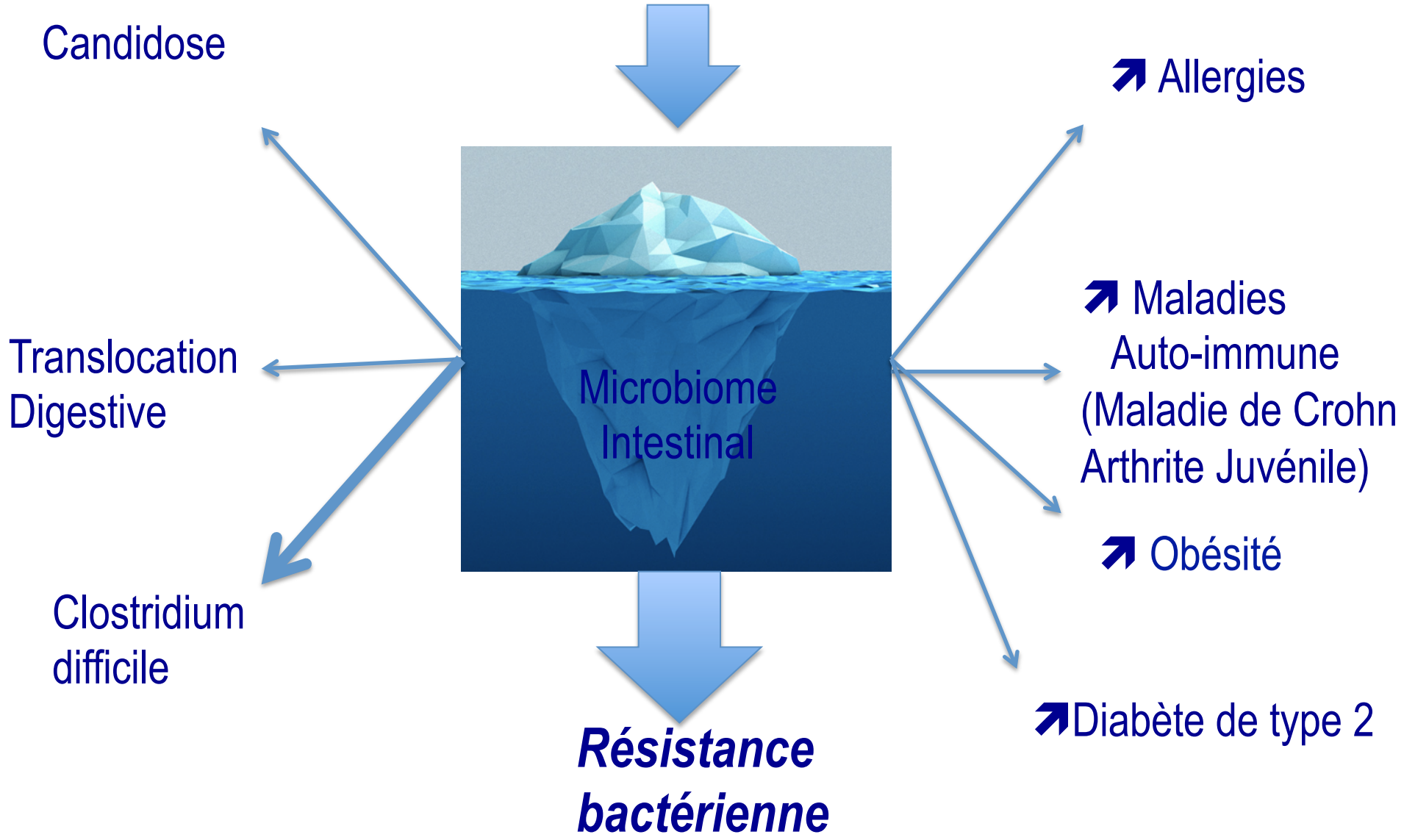
*36.3% of samples grew more than one organism.

Bouhnik et al., Am J Gastroenterol 1999;94:1327–1331

PMI…???

Traitement empirique ?

Antibiothérapie



Questions

- Ces symptômes peuvent-il être liés à une PMI ?
- Y a t'il des situations favorisant des les PMI ?
- Comment faire le diagnostic de PMI ?
- L'antibiothérapie a t' elle prouvé son efficacité ?
- Quelles sont les effets délétères éventuels de l'antibiothérapie ?
- Quid des probiotiques ?

Take Home messages de la PMI

(Prrrout Merdique Infâme)

- Pleurs, ballonnement intestinal, gaz peuvent-il être liés à une PMI ?

Peut être, probablement

- Y a t'il des situations favorisant des les PMI ?

Oui

- Comment faire le diagnostic de PMI ?

Je sais pas

- L'antibiothérapie a t' elle prouvé son efficacité ?

Non

- Quelles sont les effets délétères éventuels de l'antibiothérapie ?

Très nombreux

- Et les probiotiques

?