ACHHEP
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de Hepatologia

Peritonitis Bacteriana Espontánea

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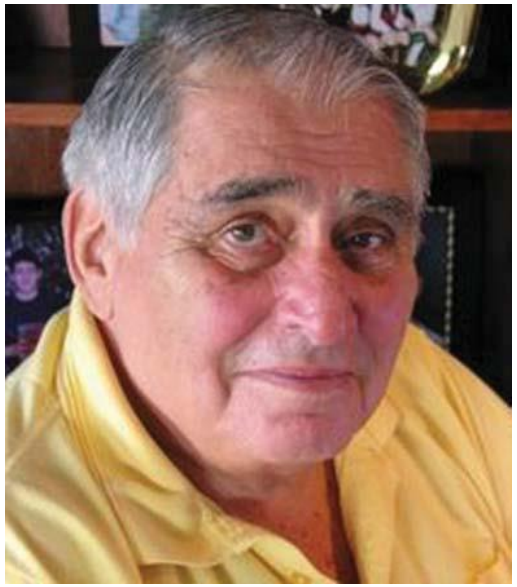
Clínica Santa María



Spontaneous Peritonitis and Bacteremia in Laennec's Cirrhosis Caused by Enteric Organisms

A Relatively Common but Rarely Recognized Syndrome

HAROLD O. CONN, M.D., *New Haven, Connecticut*

FIVE INSTANCES OF SPONTANEOUS peritonitis and bacteremia caused by enteric organisms have been observed in decompensated cirrhotic patients at this hospital during the past 5 years. The remarkable similarity of the clinical picture in these patients suggested that it represented a sharply defined syndrome (Table 1).

In each instance it started abruptly with sudden fever and shaking chills, accompanied by nausea, vomiting, and progressive abdominal discomfort. Hypotension, which was present in each patient, was usually severe. There was rapid deterioration in mental state characterized by confusion, disorientation, delirium, and asterixis. Although blood ammonia levels tended to increase, there was no consistent elevation. In each patient diffuse abdominal tenderness, nonlocalizing rebound tenderness, and, usually, hypoactive bowel sounds were present. Leukocytosis of the peripheral blood was found in all of the patients. Upright and lateral decubitus roentgenograms of the abdomen showed no free air in the peritoneal cavity. Peritonitis was proven by paracentesis (Table 2). The ascitic fluid in each instance was turbid and showed an increase in polymorphonuclear leukocytes. The specific gravity ranged from 1.012 to 1.018. Gram stains of the centrifuged sediment showed many polymorphonuclear leukocytes, and in three instances gram-negative rods were identified. Cultures of ascitic fluid grew *Escherichia coli* in 3 instances, *Aeromonas liquefaciens* in one and *Streptococcus faecalis* in one. In each patient two or more blood cultures were positive for the same organism. Although these bacteria were not classified further, the organisms obtained from the blood and ascitic fluid were culturally identical and showed the same antibiotic sensitivities.

Therapy with tetracycline and streptomycin gave rapid and dramatic results. Fever, abdominal pain, and hypotension disappeared, and the blood and ascitic fluid became sterile. Despite prompt control of the coliform peritonitis and bacteremia there followed in each of the patients a profound worsening of hepatic function characterized by an increase in serum bilirubin and glutamic-oxalacetic transaminase levels. These changes were attributed to the hypotension and transient renal decompensation associated with gram-negative bacteremia. All of these patients died of decompensated cirrhosis or its complications within three months.

One patient apparently had 3 similar episodes although bacteriologic proof of the gram-negative peritonitis was obtained in only one instance. In a second patient spontaneous peritonitis caused by *E. coli* was confirmed on two occasions. The patient died as a result of the second.

Received October 17, 1963; accepted for publication November 26, 1963.

From the Medical Service, Veterans Administration Hospital, West Haven, Connecticut, and the Department of Internal Medicine, Yale University School of Medicine, New Haven, Connecticut.

This work was supported in part by United States Public Health Grant C-2727, Bethesda, Maryland.

Requests for reprints should be addressed to Harold O. Conn, M.D., Veterans Administration Hospital, West Spring Street, West Haven, Connecticut.

Annals of Internal medicine 1 april 1964

Definiciones

- **Infección del LA sin una fuente intraabdominal tratable quirúrgicamente.**
- **Ocurre en pacientes con cirrosis avanzada (> MELD > riesgo)**
- **> riesgo de ACLF** (falla hepática aguda sobre crónica)
- Hay 2 variantes que se distinguen de la clásica PBE a través del análisis del LA

Spontaneous bacterial peritonitis and its variants that do not require surgery

Variant	Ascitic fluid culture	Absolute PMN per mm3
Spontaneous bacterial peritonitis	Positive	≥250
Culture-negative neutrocytic ascites	No growth	≥250
Monomicrobial non-neutrocytic bacterascites (single organism)	Positive	<250

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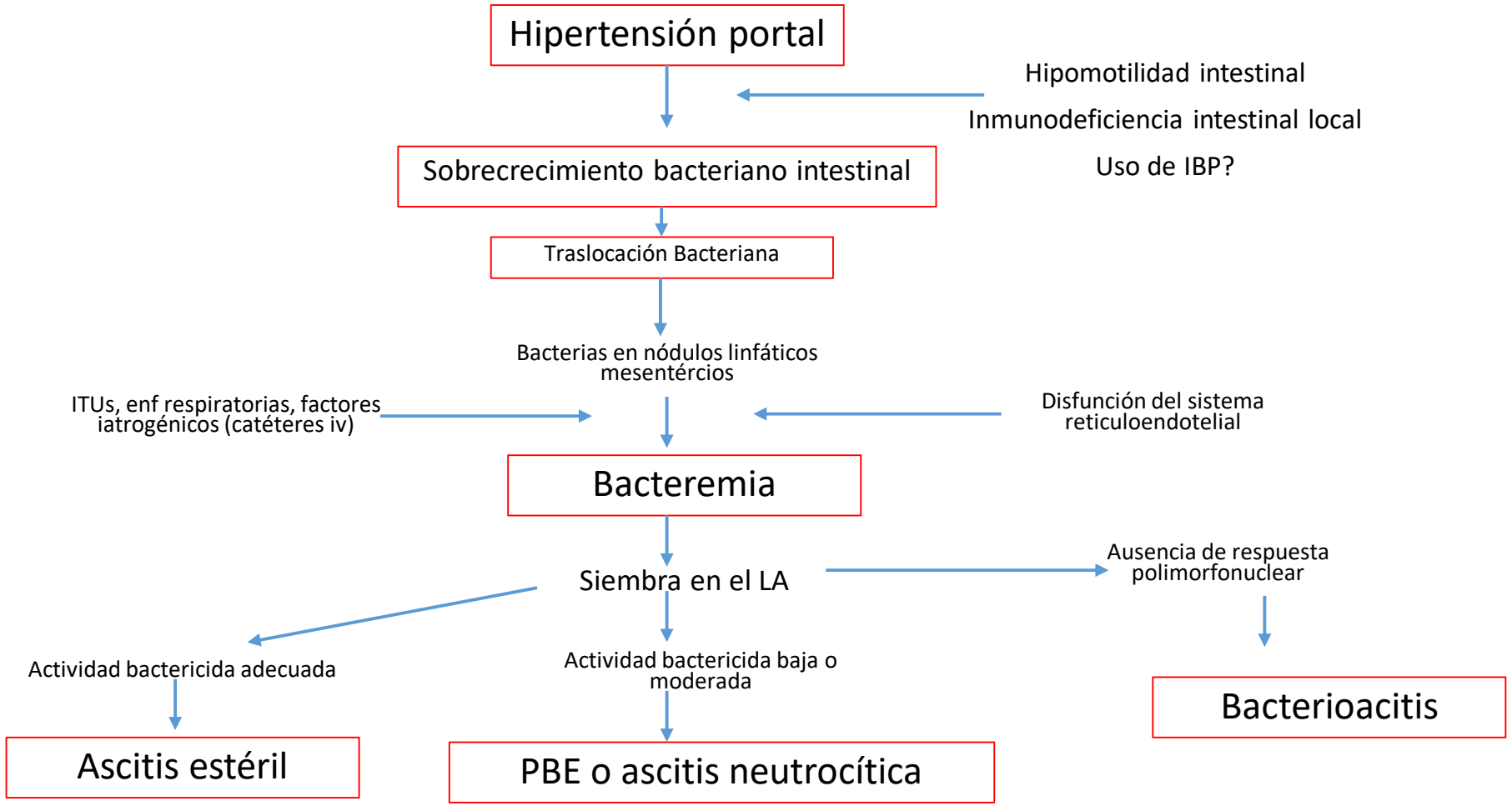
Spontaneous bacterial peritonitis	Positive	≥250	Tratar
Culture-negative neutrocytic ascites	No growth	≥250	Tratar
Monomicrobial non-neutrocytic bacterascites (single organism)	Positive	<250	Tratar si hay síntomas. Si no, controlar con nueva punción (si es + → tratar)

Patogenia

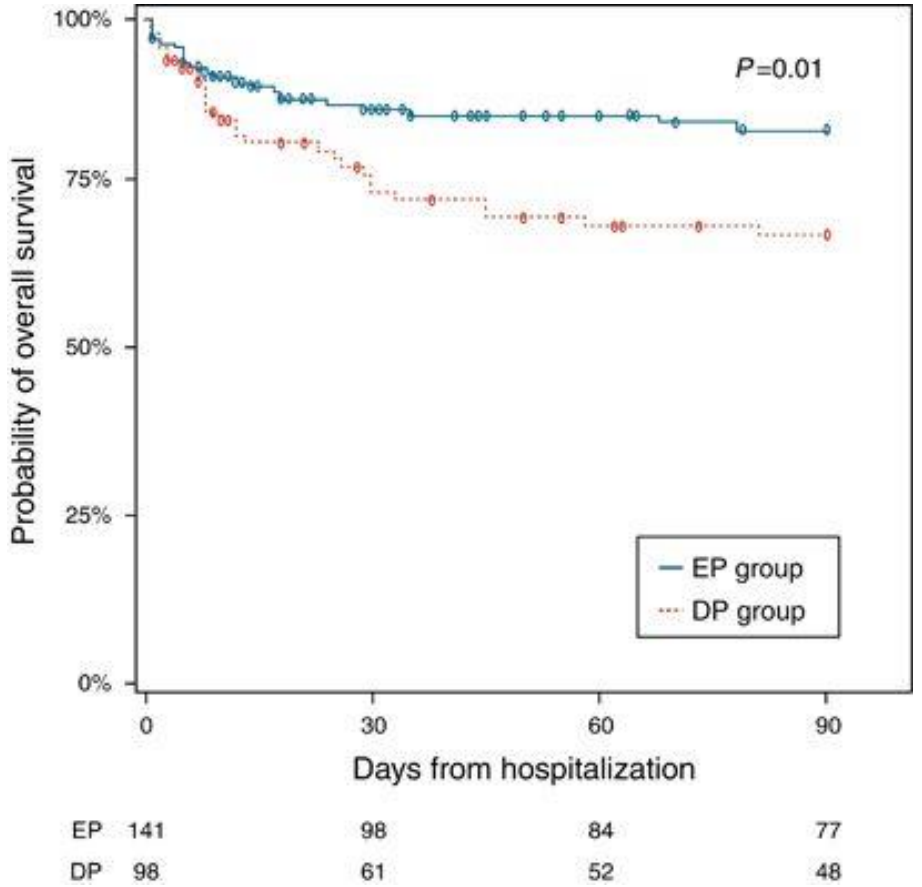

Hipertensión portal
Hipomotilidad intestinal
Inmunodeficiencia intestinal local
Uso de IBP?
Sobrecrecimiento bacteriano intestinal
Traslocación Bacteriana
Bacterias en nódulos linfáticos mesentércios
ITUs, enf respiratorias, factores iatrogénicos (catéteres iv)
Disfunción del sistema reticuloendotelial
Bacteremia
Siembra en el LA
Ausencia de respuesta polimorfonuclear
Actividad bactericida adecuada
Actividad bactericida baja o moderada
Bacterioacitis
Ascitis estéril
PBE o ascitis neutrocítica

Factores de riesgo

- Proteínas totales en LA <1gr/dl (↓ opsonización)
- Episodio previo de PBE
- BT en sangre >2,5 mg/dl
- Hemorragia variceal
- Desnutrición
- Uso de IBP

Diagnóstico

- Paracentesis diagnóstica (30 ml y < 6hrs del ingreso)
- Recuento absoluto de PMN ≥ 250 cells/mm3
- Ausencia de causas secundarias
- 13% asintomática



KIM JJ et al. Am J Gastroenterol 2014

Diagnóstico

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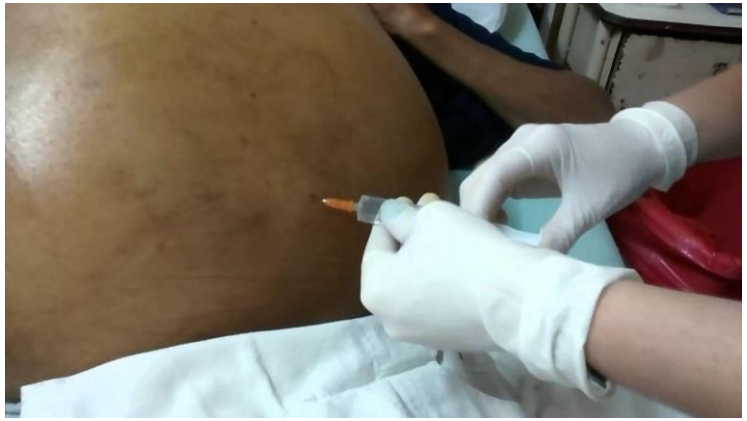
Signs and symptoms at the time of diagnosis in 489 patients with spontaneous bacterial peritonitis

Clinical feature	Percent with sign or symptom
Fever	69 T° ≥37,8
Abdominal pain	59
Altered mental status	54
Abdominal tenderness	49
Diarrhea	32
Paralytic ileus	30
Hypotension	21
Hypothermia	17

Data from McHutchison JG, Runyon BA. Spontaneous bacterial peritonitis. In: Gastrointestinal and Hepatic Infections, Surawicz CM, Owen RL (Eds), WB Saunders Company, Philadelphia 1994. p.455.

Diagnóstico



Indicaciones de paracentesis diagnóstica

- Ascitis de inicio reciente

- En cada ingreso hospitalario

- Deterioro clínico
- Fiebre, dolor abdominal, cambios en el estado mental, íleo, hipotensión.

- Alteraciones del laboratorio
- Leucocitosis, acidosis, alteración de la función renal.

- Hemorragia digestiva

Bacterias más frecuentes encontradas en los cultivos

Bacteria isolated from ascitic fluid in 519 patients with spontaneous bacterial peritonitis

Organism	Percent of isolates
Escherichia coli	43
Klebsiella pneumoniae	11
Streptococcus pneumoniae	9
Other streptococcal species	19
Enterobacteriaceae	4
Staphylococcus	3
Pseudomonas	1
Miscellaneous*	10

*In some regions of the world, such as Korea, Aeromonas hydrophila infection is an important cause of SBP, particularly in warm weather months. Affected patients commonly also have diarrhea. [Choi JP, et al. Clin Infect Dis 2008; 47:67.]

Data from McHutchison JG, Runyon BA. Spontaneous bacterial peritonitis. In: Gastrointestinal and Hepatic Infections, Surawicz CM, Owen RL (Eds), WB Saunders, Philadelphia 1995. p.455.

HALLAZGOS MICROBIOLÓGICOS EN CULTIVOS DE PACIENTES CIRRÓTICOS

Mac-Vicar M[1], Pavez C[1], Moreno P[1], Gauna F[1], Araneda G[1], Uribe R[1], Poniachik J[1].

[1]Sección de Gastroenterología, Hospital Clínico Universidad de Chile, Santiago, Chile.

- 200 pacientes cirróticos hospitalizados
- 1500 cultivos
- 324 LA (28 +), 597 urocultivos, 475 hemocultivos, 115 otros.

Resultados:

El uso de **rifaximina** como profilaxis para Encefalopatía se asoció a mayor riesgo de infecciones por Gram (+)
(OR: 2,3 IC 95%: 1,4-3,7 p=0.0006).

- **No hubo relación entre la presencia de resistencia antibiótica y:**
  - Profilaxis con Ciprofloxacino
  - Hospitalización >3 días
  - Presencia de hospitalización los 6 meses previos.

Resultados :

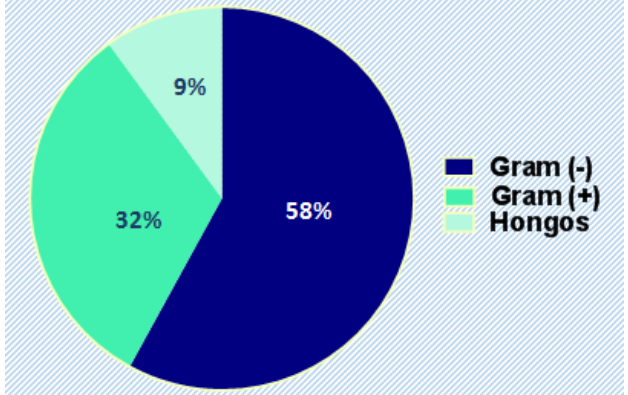


Figura 1. Cultivos de pacientes cirróticos

Clasificación	n = 1.511 cultivos
Resistencia a Antiióticos de Primera Línea	47%
SAMR (Staphylococcus Meticilino Resistente)	63%
BLEE (Bacterias productoras de Betalactamasas de Espectro Extendido)	54%
ERV (Enterococo Resistente a Vancomicina)	38%

Tabla 1. Clasificación de cultivos.

Existe una alta resistencia antibiótica, encontrándose bacterias productoras de BLEE, SAMR, ERV en el 47% de los casos.

Tratamiento: albúmina

EFFECT OF INTRAVENOUS ALBUMIN ON RENAL IMPAIRMENT AND MORTALITY IN PATIENTS WITH CIRRHOSIS AND SPONTANEOUS BACTERIAL PERITONITIS

PAU SORT, M.D., MIQUEL NAVASA, M.D., VICENTE ARROYO, M.D., XAVIER ALDEGUER, M.D., RAMON PLANAS, M.D., LUIS RUIZ-DEL-ARBOL, M.D., LLUIS CASTELLS, M.D., VICTOR VARGAS, M.D., GERMÁN SORIANO, M.D., MÓNICA GUEVARA, M.D., PERE GINÈS, M.D., AND JOAN RODÉS, M.D.

August 5, 1999 The New England Journal of Medicine

- **Uso de ATB + albúmina iv ↓ la incidencia de falla renal y de muerte:**

- 1,5gr/kg primer día (dentro de las 6 hrs del diagnóstico)
- 1 gr/kg día número 3

- Si creat >1 mg/dl, BUN >30 mg/dl o BT >4 mg/dl

Hoy se recomienda el uso de albúmina en todo paciente con PBE

Tratamiento: suspender ß bloqueo

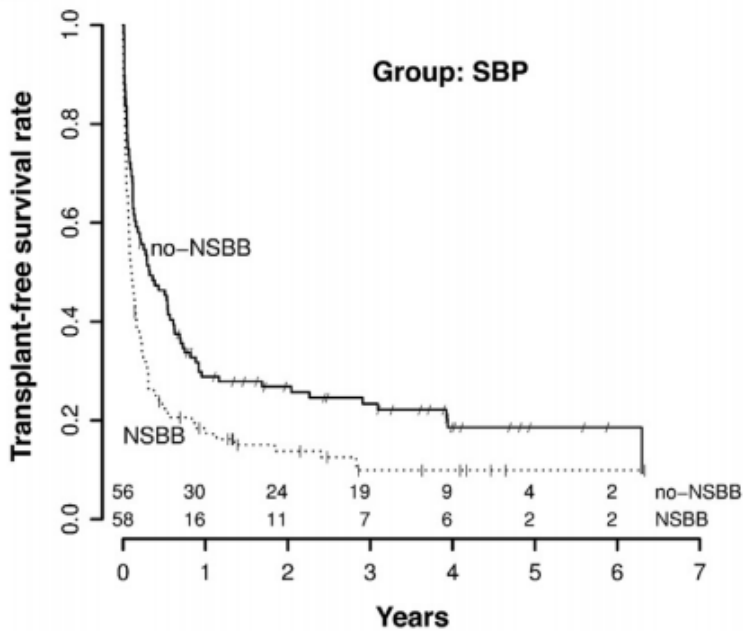
Gastroenterology 2014;146:1680–1690

Nonselective β Blockers Increase Risk for Hepatorenal Syndrome and Death in Patients With Cirrhosis and Spontaneous Bacterial Peritonitis

Mattias Mandorfer,[1,2] Simona Bota,[1,2] Philipp Schwabl,[1,2] Theresa Bucsics,[1,2] Nikolaus Pfisterer,[1,2] Matthias Kruzik,[1,2] Michael Hagmann,[3] Alexander Blacky,[4] Arnulf Ferlitsch,[1,2] Wolfgang Sieghart,[1,2] Michael Trauner,[1,2] Markus Peck-Radosavljevic,[1,2] and Thomas Reiberger[1,2]

No suspender ß bloqueo se asocia a:

- 58% ↑ riesgo de muerte (HR 1,58, 95% CI 1.1-2-27)
- ↑ riesgo de SHR (24 v/s 11%)
- > estadía hospitalaria (30 v/s 24 días)



Tratamiento: ATB

- **Pacientes con cirrosis avanzada tienen alto riesgo de MDROs**
  (organismos resistentes a múltiples drogas):

- Hospitalizaciones frecuentes
- Uso de ATB (terapia o profilaxis)
- Procedimientos invasivos (uso de catéteres iv, etc)
- PBE nosocomial se asocia a MDROs y pobres resultados
- Resistencia a ATB en PBE aumenta en 4 veces el riesgo de muerte

Tratamiento: ATB

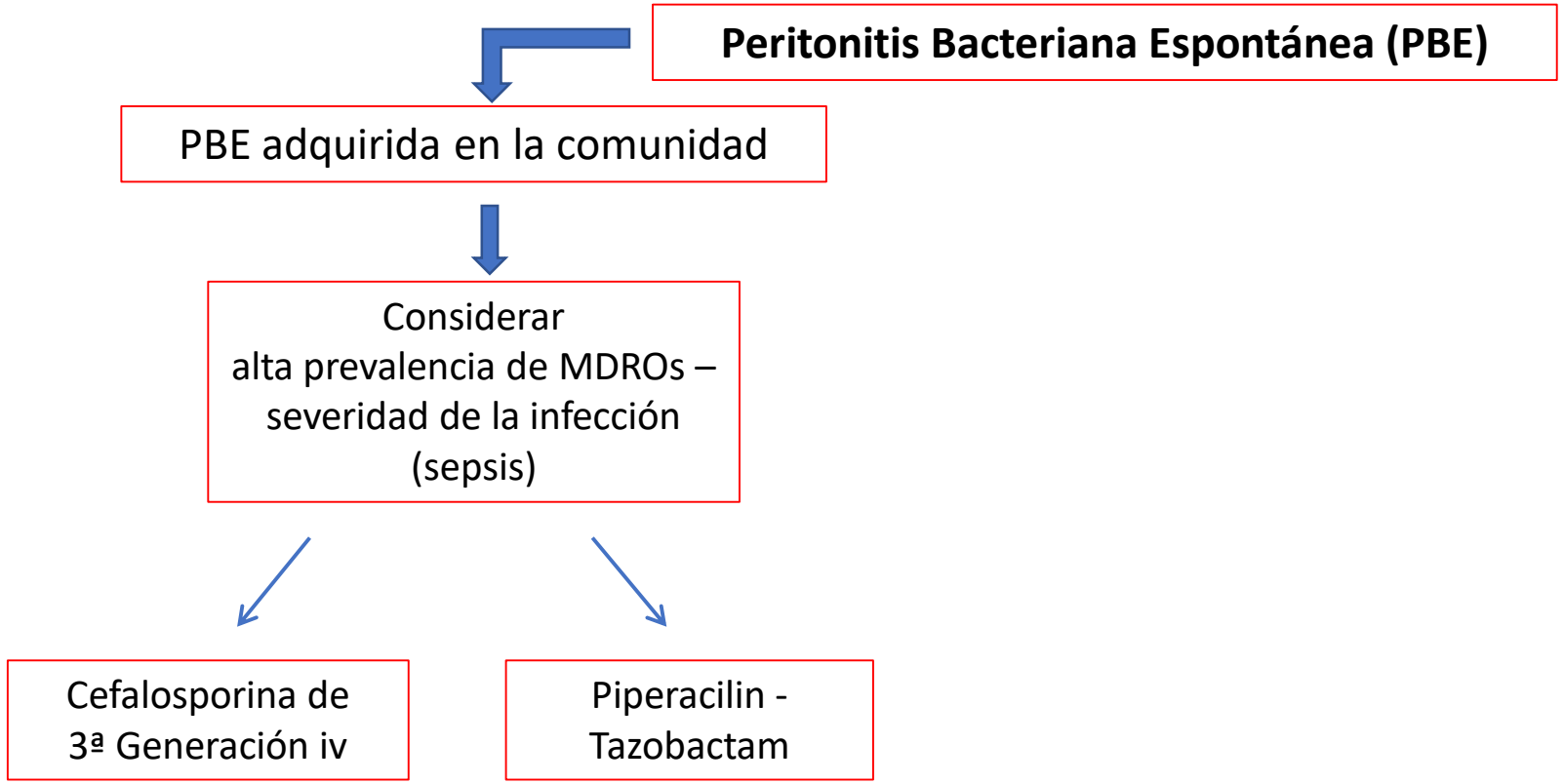
- **Considerar antes de partir los ATBs:**

- Infección adquirida en la comunidad, asociada a cuidados de salud o nosocomial

- Severidad de la infección (qSOFA y Sepsis 3)

- Perfil de resistencia local

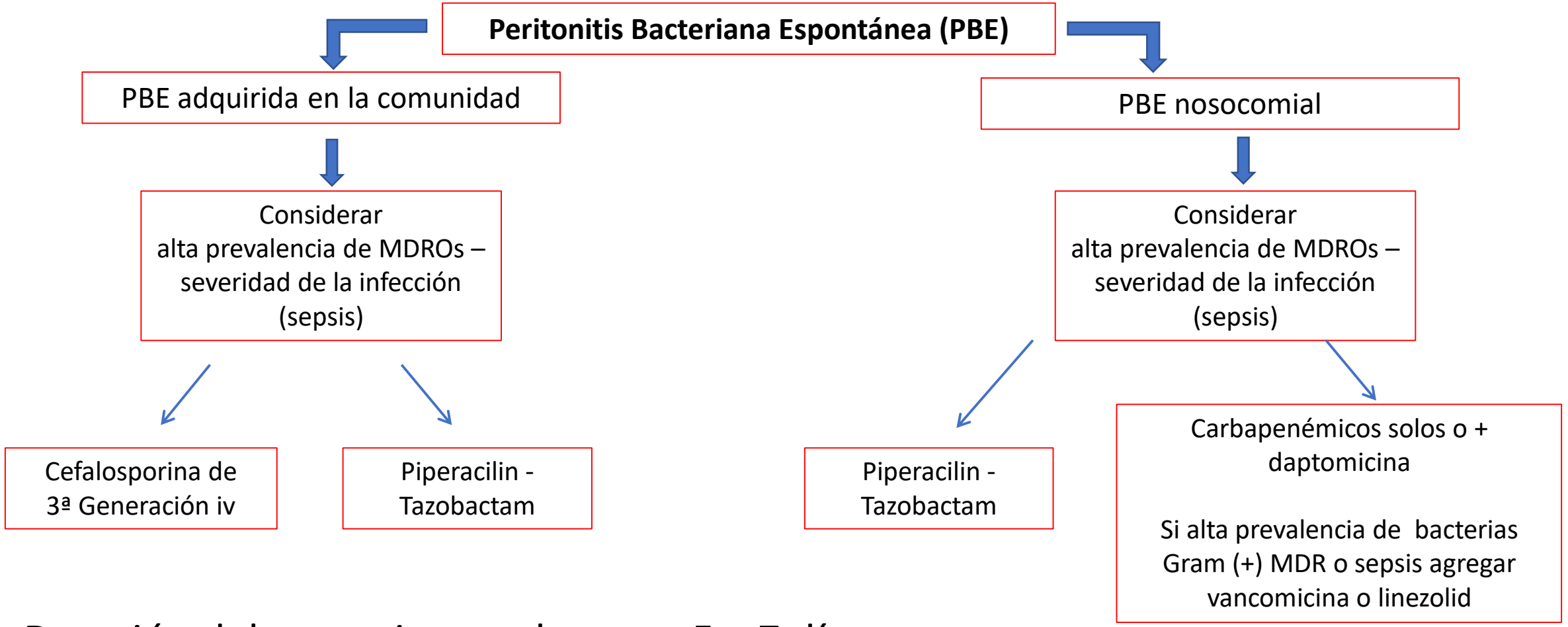
Tratamiento: ATB



- Duración del tratamiento: al menos 5 a 7 días

Journal of Hepatology **2018**

Tratamiento: ATB



- Duración del tratamiento: al menos 5 a 7 días

Journal of Hepatology **2018**

Tratamiento: profilaxis

Indicada en:

- **Cirrosis + hemorragia gastrointestinal**

- Ceftriaxona 2gr/d iv por 7 días (alt. Norfloxacino 400mg c/12h)

- **PBE previa**

- Ciprofloxacino 500mg/d o trimethoprim/sulfamethoxazole forte

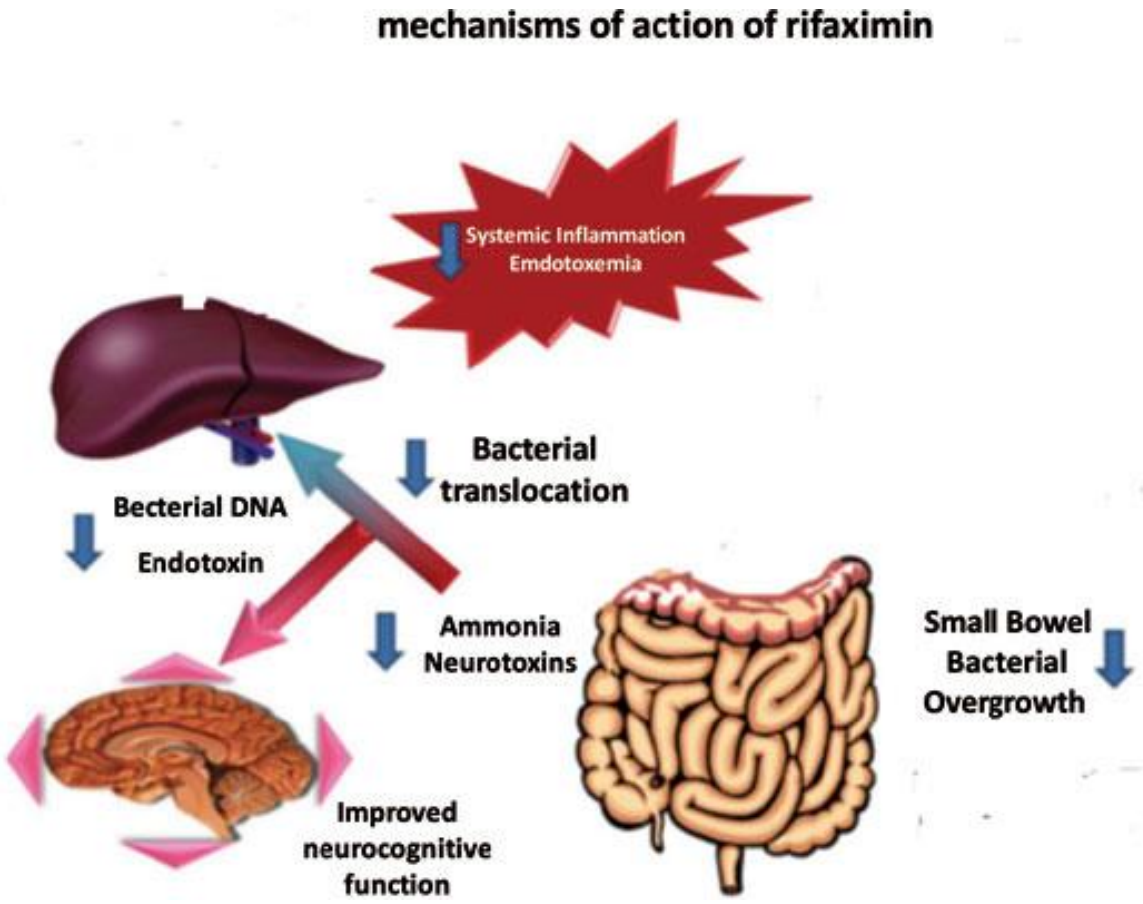
- **Cirrosis y ascitis +:**

Proteínas en LA < 1,5 gr/dl y una o más de las siguientes:

- Creat > 1,2 mg/dl, BUN ≥ 25 mg/dl, Na ≤ 130 o
- Child Pugh ≥ 9 puntos con BT ≥ 3 mg/dl

Tratamiento: profilaxis

Rifaximina

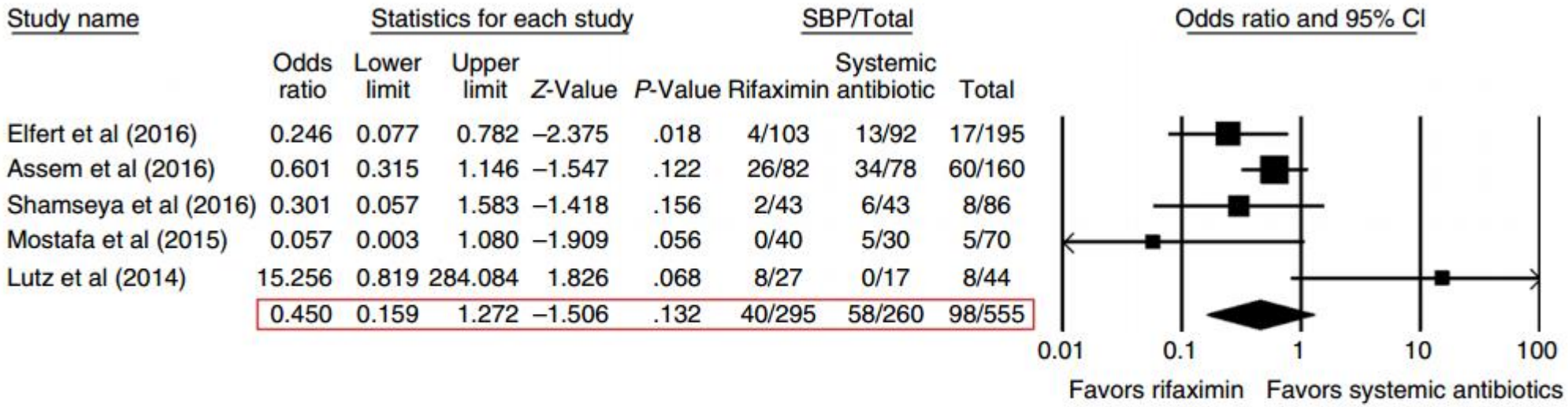


Received: 22 May 2017 | First decision: 12 June 2017 | Accepted: 14 September 2017
DOI: 10.1111/apt.14361

WILEY APT Alimentary Pharmacology & Therapeutics

Systematic review with meta-analysis: rifaximin for the prophylaxis of spontaneous bacterial peritonitis

A. Goel[1] | U. Rahim[1] | L. H. Nguyen[2] | C. Stave[3] | M. H. Nguyen[1]



Study name	Odds ratio	Lower limit	Upper limit	*Z*-Value	*P*-Value	SBP/Total Rifaximin	SBP/Total Systemic antibiotic	SBP/Total Total
Elfert et al (2016)	0.246	0.077	0.782	–2.375	.018	4/103	13/92	17/195
Assem et al (2016)	0.601	0.315	1.146	–1.547	.122	26/82	34/78	60/160
Shamseya et al (2016)	0.301	0.057	1.583	–1.418	.156	2/43	6/43	8/86
Mostafa et al (2015)	0.057	0.003	1.080	–1.909	.056	0/40	5/30	5/70
Lutz et al (2014)	15.256	0.819	284.084	1.826	.068	8/27	0/17	8/44
	0.450	0.159	1.272	–1.506	.132	40/295	58/260	98/555

FIGURE 2 Risk of spontaneous bacterial peritonitis (SBP) with rifaximin compared to systemic antibiotics. Forest plot showing study-specific and summary odds ratios (ORs)

Rifaximina v/s ATB sistémicos (norfloxacino)

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Study name	Odds ratio	Lower limit	Upper limit	*Z*-Value	*P*-Value	SBP/Total Rifaximin	No therapy	Total
Lutz el al (2014)	1.474	0.574	3.782	0.806	.420	8/27	24/108	32/135
Danulescu et al (2013)	0.238	0.024	2.317	–1.236	.216	1/22	4/24	5/46
Vlachogiannakos et al (2013)	0.164	0.020	1.367	–1.671	.095	1/23	10/46	11/69
Hanouneh et al (2012)	0.243	0.094	0.630	–2.911	.004	5/49	113/355	118/404
Mantry el al (2010)	0.111	0.014	0.918	–2.040	.041	1/65	8/65	9/130
	0.336	0.113	0.997	–1.965	.049			

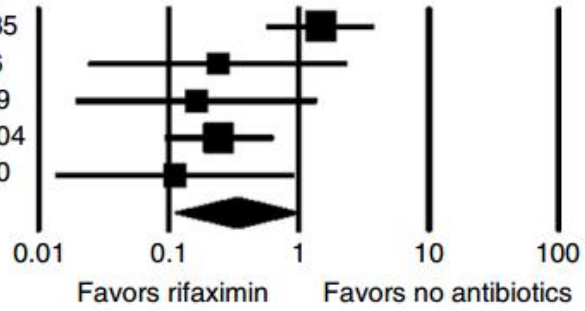

FIGURE 4 Risk of spontaneous bacterial peritonitis (SBP) with rifaximin compared to no antibiotics. Forest plot showing study-specific and summary odds ratios (ORs)

•Rifaximina v/s no ATB

•Conclusiones

• Rifaximina (análisis de subgrupos):

Profilaxis primaria ↓ 47% el riesgo de PBE v/s no ATB y en profilaxis secundaria ↓ 74% v/s ATB sistémicos (norfloxacino).

•Rifaximina: podría ser efectiva en prevenir PBE en pacientes con cirrosis y ascitis comparado con placebo y con antibióticos que se absorben sistémicamente.