



ASOCIACIÓN COLOMBIANA
DE GASTROENTEROLOGÍA
Fundada en 1947



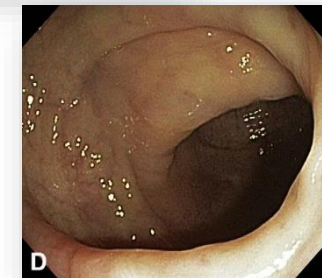
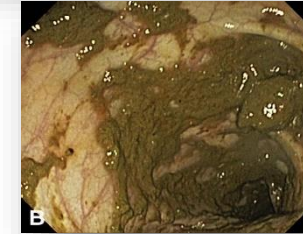
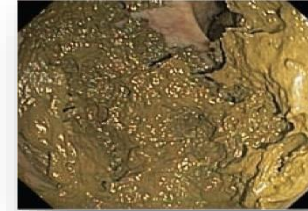
Asociación Colombiana
de Coloproctología



Asociación Colombiana
de Endoscopia Digestiva



Asociación Colombiana
de Hepatología



Preparación el colon



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Universidad Nacional de Colombia
Hospital Universitario Nacional de Colombia



Conflicto de intereses

Conferencista

Takeda, Abbott, Tecnoquimica, Bristol

ANNAR, Tecnofarma, Menarini, Procaps

***Esta actividad es asuspiciada por
Tecnofarma sin injerencia en su contenido***

Procedimiento estándar



**Tamización
Diagnóstico
Resección pólipos
Vigilancia**



**Cáncer de
Colon y Recto**



Di Palma J, et al. Am J Gastroenterol 2021;116:319-28

Bowel prep adequacy rate

Goal: $\geq 90\%$, aspirational $\geq 95\%$

Boston Bowel Prep Score: ≥ 6



Calidad de la preparación



**Colon mal
Preparado**



**Impacta negativamente
los principales
Indicadores de calidad**

< Tasa intubación cecal

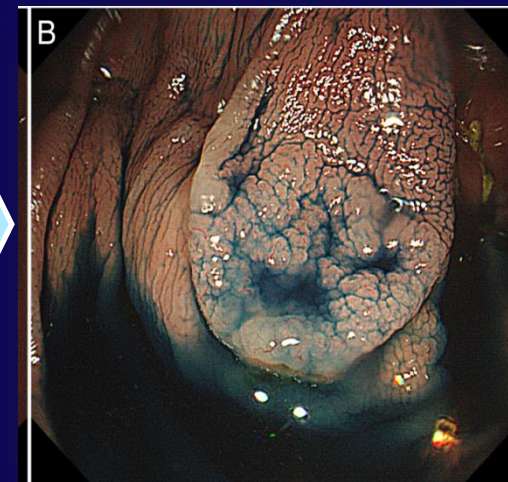
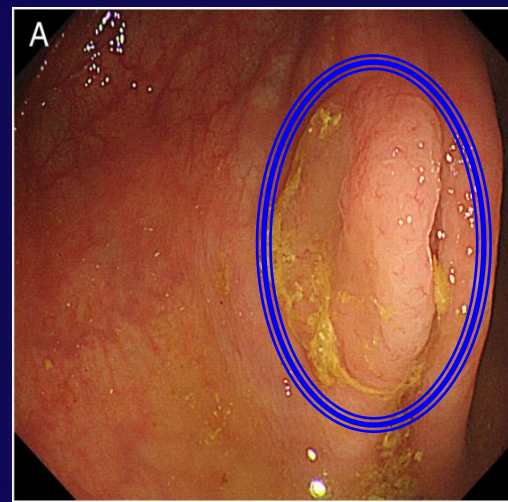
> Más cáncer de intervalo CCR pos colonoscopia

> Tiempo de retirada

**< Tasa detección
adenomas, ADR**

> Colonoscopias

Más costos

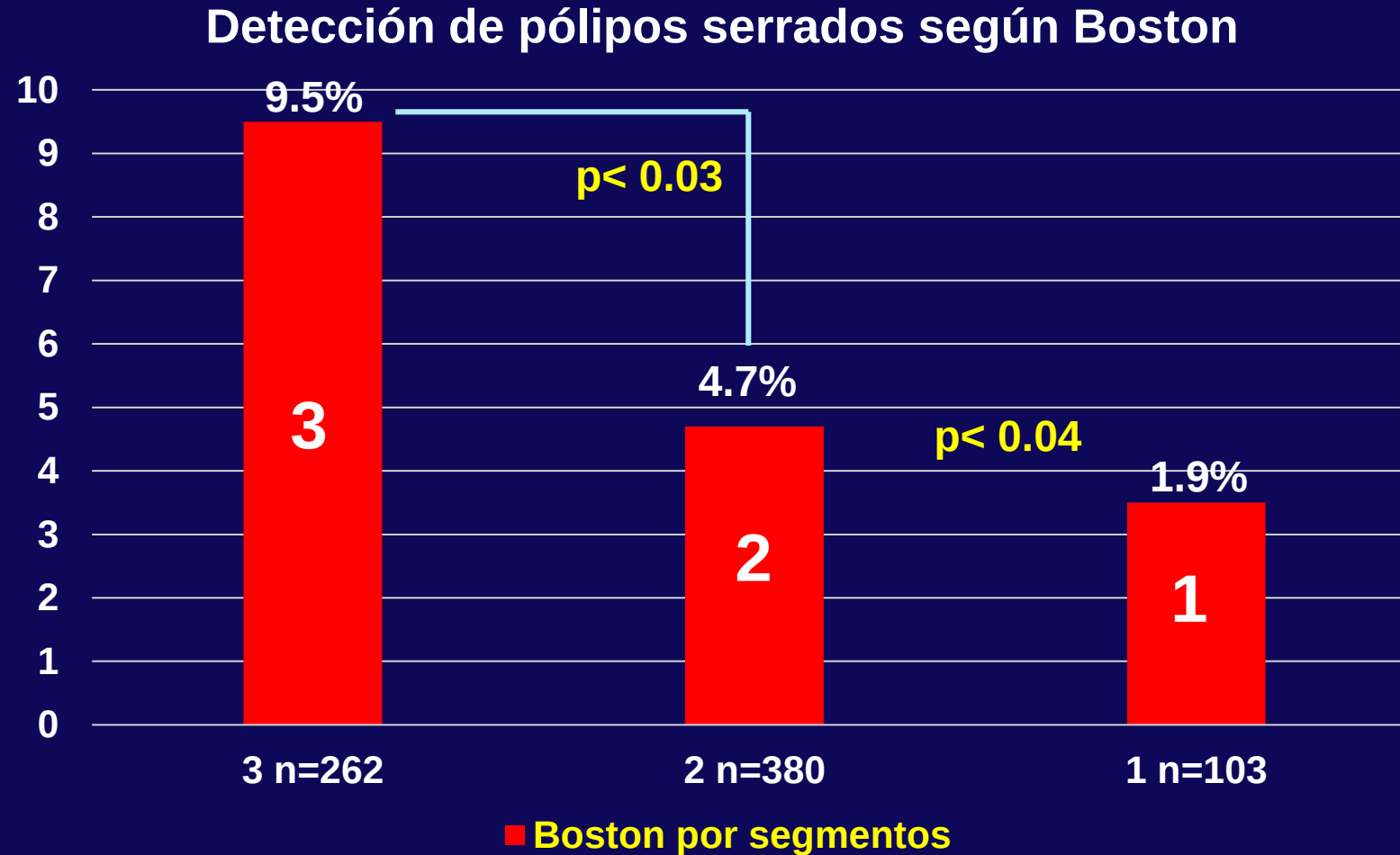


30% Cánceres del colon
30% Cancer de intervalo

East JE, et al. Gut 2017;66:1181–96

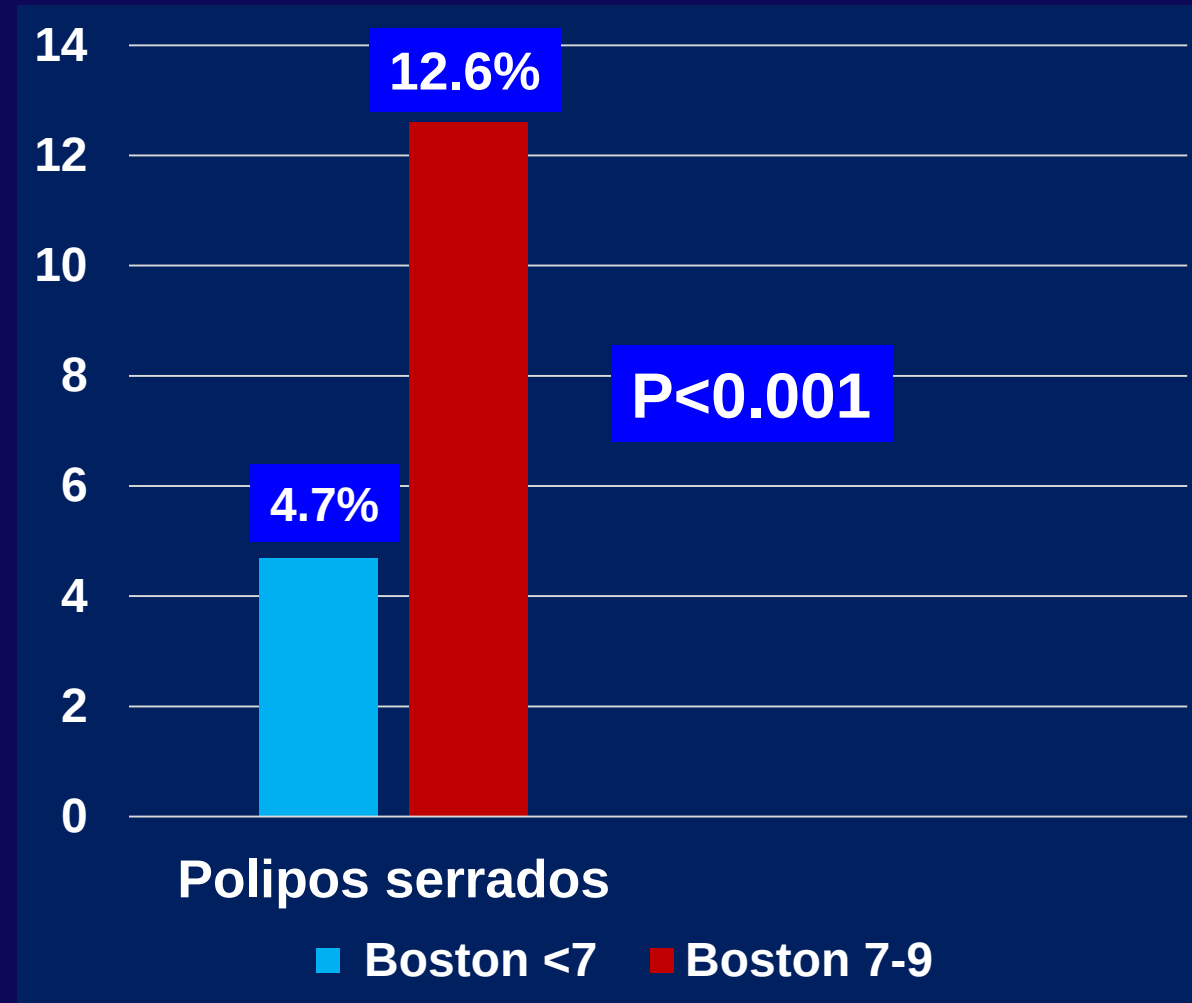
Thorlacius H, Scand J Gastroenterol 2017 ;52:654-66

High-Quality Bowel Preparation Is Required for Detection of Sessile Serrated Polyps



High-Quality Bowel Preparation Is Required for Detection of Sessile Serrated Polyps

Boston total



Preparación del colon



Mal preparados 20-40%



Tasa de error: 35-42%

*Rex D. Clin Gastroenterol Hepatol 2014;12:458-62
Lebwohl B, Gastrointest Endos 2011;73:1207-14
Frohlich F, Gastrointest Endosc 2005;61:378-84*

Predictores de mala preparación

```
graph TD; A[Predictores de mala preparación] --> B[Médicos]; A --> C[Otros factores]; B --> D[Estreñimiento<br/>Diabetes mellitus<br/>Obesidad<br/>Cirugía de colon<br/>Mala preparación previa<br/>Medicamentos<br/>Opioides<br/>Tricíclicos]; C --> E[Seguro médico<br/>Nivel educativo<br/>Poca motivación<br/>No entender la importancia<br/>Idioma];
```

Médicos

Estreñimiento
Diabetes mellitus
Obesidad
Cirugía de colon
Mala preparación previa
Medicamentos
Opioides
Tricíclicos

Otros factores

Seguro médico
Nivel educativo
Poca motivación
No entender la importancia
Idioma

Sim JS, Clin Endosc 2016;49:346-9

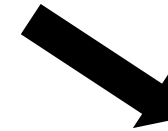
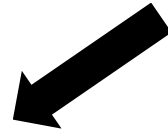
Cohn LB. Gastrointest Endosc Clin N Am 2015; 25:183-97

ASGE 2015

Factores modificables Que mejoran la calidad



Relacionados Producto



Tolerabilidad
Bajo volumen
Adecuado sabor

Dosificación
Dosis divididas

Administración
Última dosis
Terminarla 2-3 h
Antes examen

Conceptos básicos 2023

Instrucciones escritas, verbales, digitales
Terminar dos horas antes del examen
Dosis divididas (“*split*”): PM-AM
Preparación es individualizada

ESGE 2019
ASGE 2015
AGA 2022

Colonoscopia AM: antes 12 del día



***Individualizar preparación
Según la hora del examen***



Colonoscopia PM

Hora de la colonoscopia

Antes de 12 M



**1era dosis: Noche anterior al examen
2da dosis: 4-6 horas antes del examen
2-3 AM: sin inconvenientes**

Toda la dosis la Noche anterior

Quimo del ID

Adecuada preparación
Split 85% Vs 63%
ADR
Split 45% vs 36%

**Se acumula
En el colon**

**Impide ver la
Mucosa**

Jonhnsn DA, Gastroenterology 2014;147:903-24
Saltzman JR, ASGE GIE 2015;4:781-93
Kilgore TW, Gastrointest Endosc 2011;73:1240-5
Bucci C, Gastrointest Endosc 2014;80:56-63

Momento de la preparación

Terminar la Preparación



**Dos horas antes del
Procedimiento
“Runway time”**

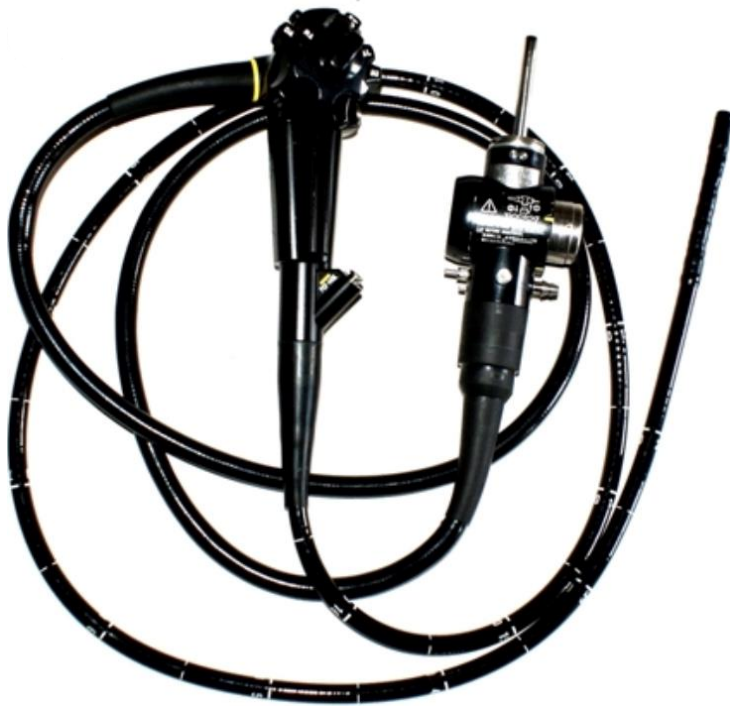


**Por cada hora antes
Del examen
10% mal preparados**

Siddiqui AA, Gastrointest Endosc 2009;69:700-6
AAA. Anesthesiology 2011;114:495-11
ESGE 2019

Hora de la colonoscopia

Por la tarde



**Preparación
por la mañana**



**Dosis única
No “*split*”**

ASGE, ESGE, Expertos

Dieta

Preparación de colon Para colonoscopia

**Dieta líquida el día anterior
Seguido por laxantes**

Modelo tradicional

***Incómoda, náuseas, vómito
Dolor abdominal alteración electrolitos***



Low-residue versus clear liquid diet before colonoscopy

An updated meta-analysis of randomized, controlled trials

Engeng Chen, MD^a , Li Chen, MD^a, Fei Wang, MD^a, Wei Zhang, MD^a, Xianlei Cai, MD^b, Gaoyang Cao, MD^{a,*} 

Colidos de la preparación similar

Bowel preparation for colonoscopy: European Society of Gastrointestinal Endoscopy (ESGE) Guideline – Update 2019



Hassan C, Endoscopy 2019;51:775-94.

Authors

Cesare Hassan¹, James East², Franco Radaelli³, Cristiano Spada⁴, Robert Benamouzig⁵, Raf Bisschops⁶, Michael Bretthauer⁷, E. Dekker⁸, Mario Dinis-Ribeiro⁹, Monika Ferlitsch¹⁰, Lorenzo Fuccio¹¹, Halim Awadie¹², Ian Gralnek¹², Rodrigo Jover¹³, Michal F. Kaminski¹⁴, Maria Pellisé¹⁵, Konstantinos Triantafyllou¹⁶, Giuseppe Vanella¹⁷, Carolina Mangas-Sanjuan¹³, Leonardo Frazzoni¹¹, Jeanin E. Van Hooft⁸, Jean-Marc Dumonceau¹⁸

Chen E, Medicine 2020; 99:49

Preparaciones aprobadas FDA 2023

Table 1. Available FDA-approved PEG-based bowel preparation agents

Generic name		Volume	
PEG-ELS ^{a,b}	G	onate, de	4 L
SF-PEG-ELS ^{c,d}	M	um	4 L
Low-volume PEG-ELS with ascorbic acid ^e	M	oride, d	2 L 16 oz of clear liquids with each dose (500 mL)
Low-volume PEG-3350 ^f	F	odium	1 L 16 oz of clear liquids with each dose (500 mL)
Oral sodium sulfate ^g	S	nd	12 oz; 2.5 L of water
Oral sodium sulfate ^h		nd	24 tablets; 2 L of water
Sodium picosulfate, magnesium oxide, and anhydrous citric acid ⁱ	C	and	10 oz; 2 L of water
Sodium phosphate tablets ^j	OsmoPrep	Monobasic and dibasic sodium phosphate	32 tablets; 2 L of water



PEG SO4(Na, Mg).

Suflave®.

2L Junio 23

Fosfato de sodio

Edad >55 años
IECA
Enfermedad Renal
Falla cardíaca
Enfermedad hepática
Diuréticos

Lesión renal
Por fosfatos

Oral sodium phosphate (OSP)

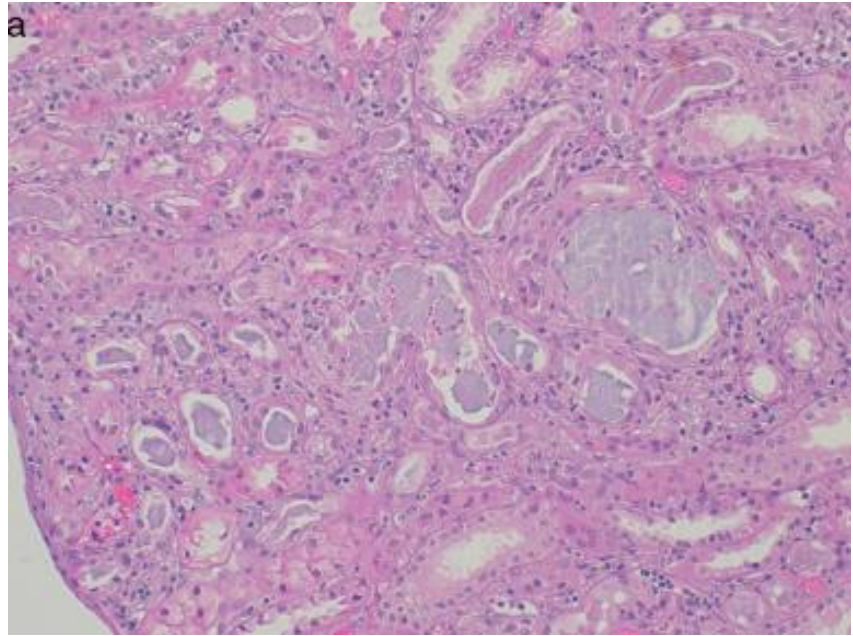
ESGE 2019

RECOMMENDATION

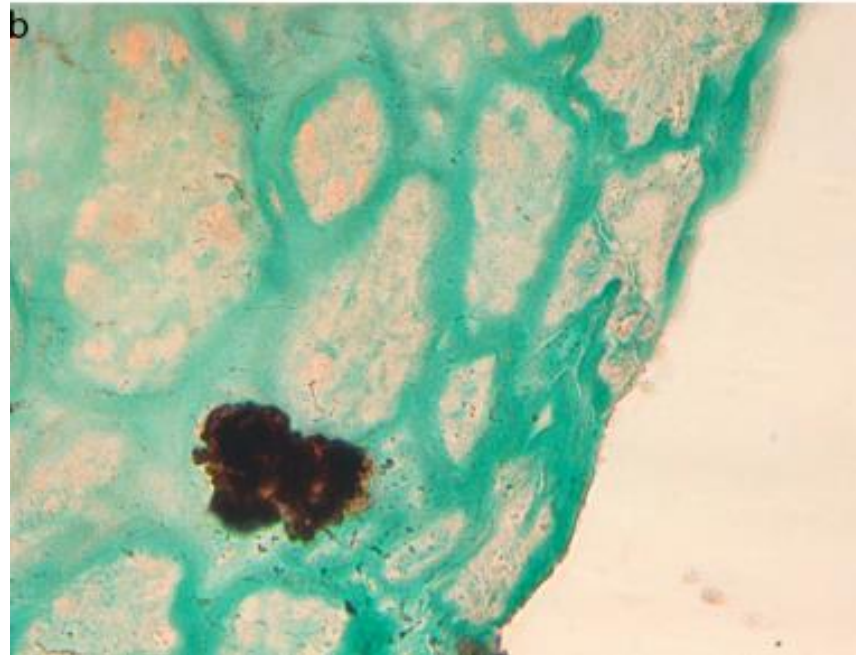
ESGE recommends against the routine use of oral sodium phosphate for bowel preparation.

Strong recommendation, low quality evidence.

ASGE . Gastrointest Endosc 2015;81:781-93



Lesión Renal por Fosfato de Sodio



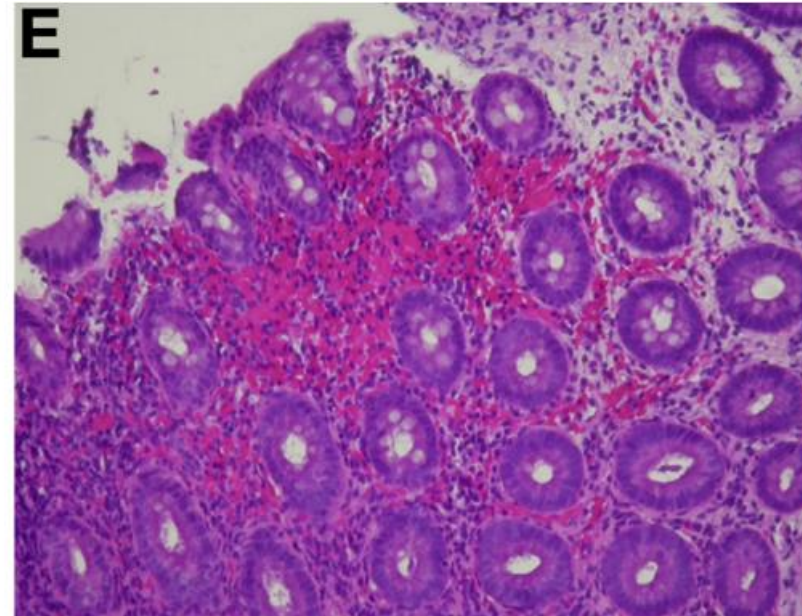
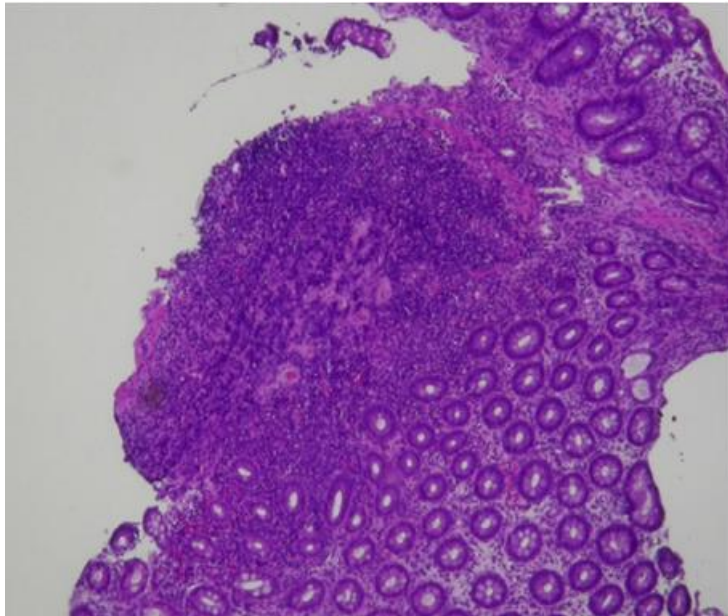
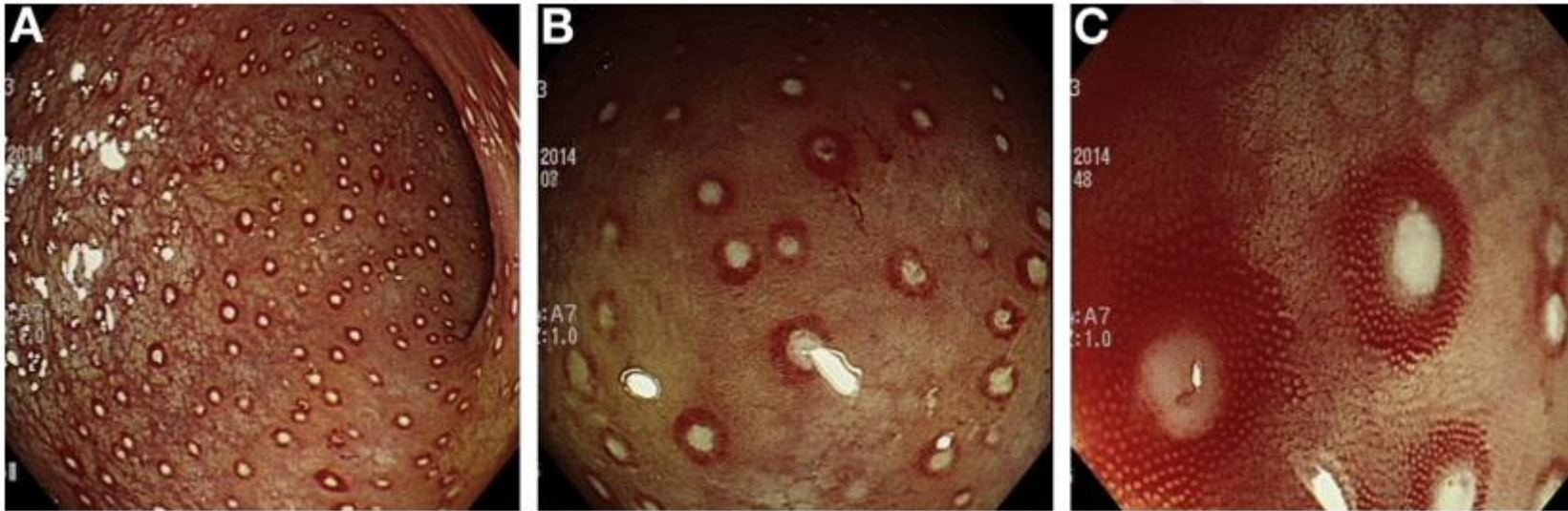
Kidney injury after sodium phosphate solution beyond the acute renal failure

Gema Fernández-Juárez^{a,*}, Leticia Parejo^a, Javier Villacorta^a, Ana Tato^a, Ramiro Cazar^a, Carmen Guerrero^b, Isabel Martinez Marin^a, Javier Ocaña^a, Angel Mendez-Abreu^a, Katia López^a, Enrique Gruss^a, Eduardo Gallego^a

Table 1 – Baseline clinical characteristics of 12 patients with phosphate nephropathy.

	Age (years)	Gender	eGFR (ml/min/1.73 m ²) [©]	Hypertension	Diabetes mellitus	ACEi-ARB	Diuretics	Renal biopsy	Course
Case 1	61	Man	63.6	No	No	No	No	Yes	Acute
Case 2	85	Female	41.3	Yes	Yes	No	Yes	–	Chronic
Case 3	71	Man	70.7	Yes	Yes	Yes	Yes	Yes	Acute
Case 4	73	Female	73.2	Yes	Yes	Yes	Yes	–	Chronic
Case 5	84	Man	59.6	Yes	No	Yes	Yes	–	Chronic
Case 6	59	Female	137.9	Yes	No	Yes	Yes	–	Chronic
Case 7	70	Female	95.6	Yes	Yes	Yes	Yes	Yes	Chronic
Case 8	72	Man	54.5	Yes	No	Yes	Yes	–	Chronic
Case 9	72	Man	54.5	Yes	No	Yes	Yes	–	Acute
Case 10	73	Female	65.6	Yes	No	Yes	No	Yes	Chronic
Case 11	75	Man	54.0	Yes	No	Yes	No	–	Chronic
Case 12	92	Man	35.2	Yes	No	Yes	No	–	Chronic

Lesiones aftoides en recto por fosfato de sodio



Fosfosoda



**Ha sido virtualmente
Abandonado en USA**

Rex DK, Nat Rev Gastroenterol Hepatol 2014;11:419-25.

PEG "Gold standard" Comparador

ASGE . Gastrointest Endosc 2015;81:781-93

PEG con electrolitos (90-110 gr)

Insuficiencia cardíaca
Insuficiencia renal avanzada
<30 ml/min/1.73m²
Cirrosis con ascitis
EII activa
> 65 años
Diarrea crónica
Embarazadas

NO 17 gr
Estreñimiento

Estàndar

Rex D K, Clin Gastroenterol Hepatol 2014;12:458-62
A-Rahim YI, Up To date 2023



Invasivo



Preparación



Sabor/volumen

Náuseas

Preparación incompleta

McLachlan SA, et al. Patient Educ Couns 2012;86:137-46.
Sharara AI, et al. United European Gastroenterol J 2016;4:314-18

**10-25% no la terminan
por el gran volumen**

ASGE . Gastrointest Endosc 2015;81:781-93



Muy Horrible!!!!



McLachlan SA, Patient Educ Couns 2012;86:137-46
Rex D, Nat Rev Gastroenterol Hepatol 2014;11:419-25



Comparison of a Novel, Flavor-optimized, Polyethylene Glycol and Sulfate Bowel Preparation With Oral Sulfate Solution in Adults Undergoing Colonoscopy

Raj Bhandari, MD, Michael Goldstein, MD,† Daniel S. Mishkin, MD,‡
John McGowan, MPH,§ Mark vB. Cleveland, PhD,§
and Jack A. Di Palma, MD, MACG§||*

TABLE 6. Additional Secondary Endpoints

Endpoint	FPSS; n (%)	OSS; n (%)	P*
Preparation adequacy	224 (99.1)	217 (96.9)	0.097
Cecal intubation rate	224 (99.1)	220 (98.2)	0.366
ADR	78 (34.7)	87 (39.2)	0.261
Procedure duration (min); mean (SD)	15.5 (7.0)	15.2 (6.9)	0.552
Intraprocedural water (mL); mean (SD)	121.7 (173.9)	122.8 (216.1)	0.771

TABLE 9. Preference Questionnaire*

	FPSS (n = 227)	OSS (n = 226)	P†
Experience consuming prep	(n %)	(n %)	0.017
Very easy	41 (18.1)	31 (13.7)	
Easy	53 (23.3)	36 (15.9)	
Tolerable	103 (45.4)	101 (44.7)	
Difficult	23 (10.1)	40 (17.7)	
Very difficult	6 (2.6)	14 (6.2)	
Very easy + easy + tolerable	197 (86.8)	168 (74.3)	0.009
Overall experience			0.016
Excellent	48 (21.1)	41 (18.1)	
Good	120 (52.9)	91 (40.3)	
Fair	44 (19.4)	70 (31.0)	
Poor	9 (4.0)	9 (4.0)	
Bad	5 (2.2)	11 (4.9)	
Excellent + good	168 (74.0)	132 (58.4)	<0.001
Comparison to prior prep			0.228
Better	82 (57.3)	68 (46.6)	
Same	39 (27.3)	55 (37.7)	
Worse	22 (15.4)	23 (15.8)	
Not applicable	83	76	
Would you request again?			0.015
Yes	182 (80.2)	158 (69.9)	
No	43 (18.9)	64 (28.3)	

TABLE 9. Preference Questionnaire*

	FPSS (n = 227)	OSS (n = 226)	P†
Would you refuse?			0.042
Yes	25 (11.0)	40 (17.7)	
No	200 (88.1)	182 (80.5)	
After-taste of preparation			<0.001
Very pleasant	24 (10.6)	12 (5.3)	
Quite pleasant	49 (21.6)	37 (16.4)	
Neither pleasant nor unpleasant	106 (46.7)	70 (31.0)	
Quite unpleasant	40 (17.6)	63 (27.9)	
Very unpleasant	7 (3.1)	40 (17.7)	
Pleasant after-taste of preparation			<0.001
Very or Quite Unpleasant	47 (20.7)	103 (45.6)	
Tastes like a sports-drink‡			< 0.001
Agree	130 (57.3)	80 (35.4)	
Neither agree nor disagree	24 (10.6)	20 (8.8)	
Disagree	72 (31.7)	121 (53.5)	

Eficacia y seguridad de tres esquemas para la preparación del colon para colonoscopia (polietilenglicol (PEG) 4 litros (4 L) (dosis única) vs. PEG 4 L dividido (2 L + 2 L) vs. PEG 2 L dividido de volumen bajo (1 L + 1 L): ensayo clínico controlado aleatorizado

A randomized controlled clinical trial of the efficacy and safety of colonoscopy preparation using a single four liter dose of polyethylene glycol (PEG) vs. two 2 liter doses of PEG vs. two low volume (1L + 1L) doses of PEG

Germán Carvajal P.,^{1*} Diego Aponte M.,¹ Milcíades Ibáñez P.,³ Carlos Castañeda-Orjuela,² Carlos González S.,¹ Javier Preciado A.,¹ Carlos Sánchez L.,¹ Nicolas Rocha R.,¹ Robin Prieto O.,¹ Gustavo Reyes M.,¹ Juan Romero G.,¹ Diana Echeverry A.,⁵ Luis Sabbagh S.⁴

	Preparación 4 L dividida (2 L + 2 L)	Preparación de bajo volumen dividido (1 L + 1 L)	Preparación 4 L	Valor de <i>p</i>
Colon derecho				
Excelente	55 (74,3)	44 (59,5)	45 (60,8)	0,050
Buena	14 (18,9)	25 (33,8)	17 (23,0)	
Mala	5 (6,8)	5 (6,8)	9 (12,2)	
Inadecuada	0	0	3 (4,1)	
Colon Transverso				
Excelente	61 (82,4)	58 (78,4)	46 (62,2)	0,019
Buena	12 (16,2)	11 (14,9)	21 (28,4)	
Mala	1 (1,4)	5 (6,8)	4 (5,4)	
Inadecuada	0	0	3 (4,1)	
Colon izquierdo				
Excelente	64 (86,5)	57 (77,0)	50 (67,6)	0,019
Buena	9 (12,2)	10 (13,5)	16 (21,6)	
Mala	1 (1,4)	7 (9,5)	5 (6,8)	
Inadecuada	0	0	3 (4,1)	
Puntaje global BBPS promedio ± DE	8,3 ± 1,2 (9)	7,9 ± 1,7 (9)	7,4 ± 2,3 (9)	0,036
Preparación excelente (BBPS ≥8), n (%)	59 (79,7)	56 (75,7)	47 (63,5)	0,069
Preparación excelente o buena (BBPS ≥6), n (%)	72 (97,3)	67 (90,5)	62 (83,8)	0,019
Tasa de detección de pólipos (adenomas), n (%)	10 (13,5)	18 (24,3)	7 (9,5)	0,037

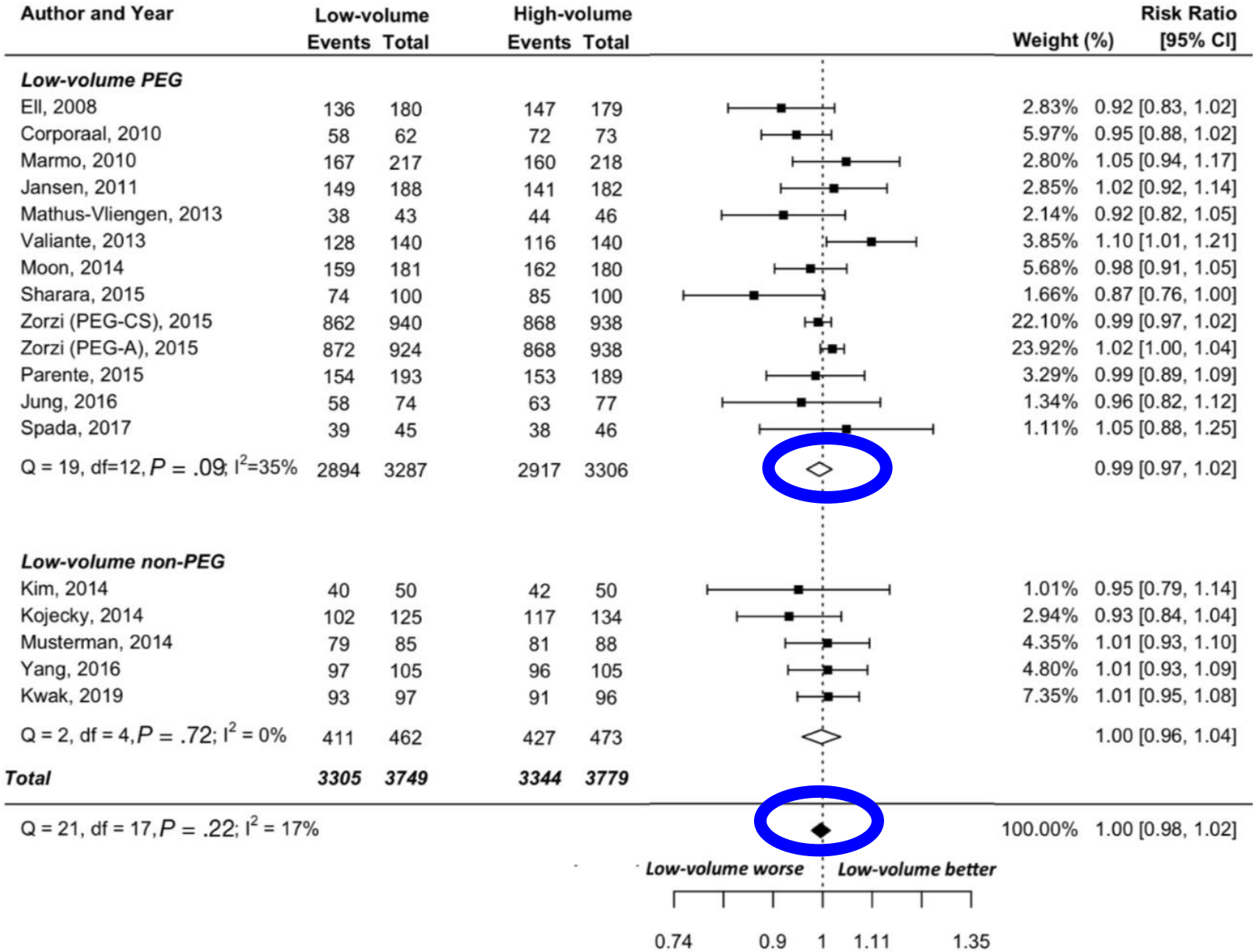


Efficacy and Tolerability of High- vs Low-Volume Split-Dose Bowel Cleansing Regimens for Colonoscopy: A Systematic Review and Meta-analysis

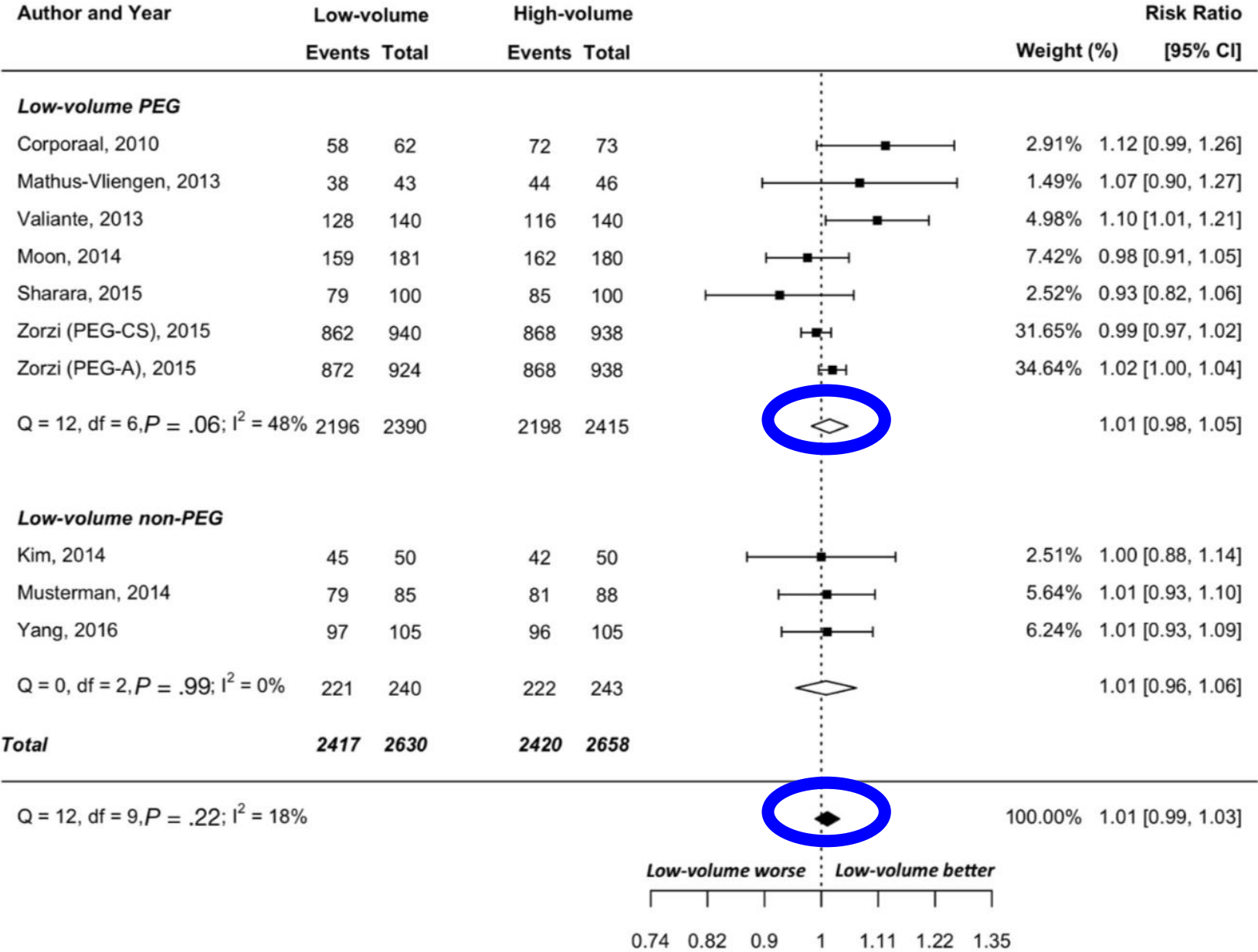
Marco Spadaccini,^{*,a} Leonardo Frazzoni,^{‡,a} Giuseppe Vanella,[§] James East,^{||}
Franco Radaelli,[¶] Cristiano Spada,[#] Lorenzo Fuccio,[‡] Robert Benamouzig,^{**}
Raf Bisschops,^{‡‡} Michael Bretthauer,^{‡‡,§§,a} Evelien Dekker,^{|||}
Mario Dinis-Ribeiro,^{¶¶} Monika Ferlitsch,^{##} Ian Gralnek,^{***} Rodrigo Jover,^{‡‡‡,§§§}
Michal F. Kaminski,^{||||} Maria Pellisé,^{¶¶¶} Konstantinos Triantafyllou,^{###}
Jeanin E. Van Hooft,^{|||} Jean-Marc Dumonceau,^{****} Clelia Marmo,^{‡‡‡‡}
Sergio Alfieri,^{§§§§} Viveksandeep Thoguluva Chandrasekar,^{||||||} Prateek Sharma,^{|||||||}
Doug K. Rex,^{¶¶¶¶} Alessandro Repici,^{*,b} and Cesare Hassan^{####,b}

Spadaccini M, Clin Gastroenterol Hepatol 2020;18:1454-65

Adecuada Limpieza
Global Coon



Limpieza
Colon derecho



Efficacy and Tolerability of High- vs Low-Volume Split-Dose Bowel Cleansing Regimens for Colonoscopy: A Systematic Review and Meta-analysis

Marco Spadaccini,^{*,a} Leonardo Frazzoni,^{‡,a} Giuseppe Vanella,[§] James East,^{||} Franco Radaelli,[¶] Cristiano Spada,[#] Lorenzo Fuccio,[‡] Robert Benamouzig,^{**} Raf Bisschops,^{‡‡} Michael Bretthauer,^{‡‡,§§,a} Evelien Dekker,^{|||} Mario Dinis-Ribeiro,^{¶¶} Monika Ferlitsch,^{##} Ian Gralnek,^{***} Rodrigo Jover,^{‡‡‡,§§§} Michal F. Kaminski,^{||||} Maria Pellisé,^{¶¶¶} Konstantinos Triantafyllou,^{###} Jeanin E. Van Hooft,^{|||} Jean-Marc Dumonceau,^{****} Clelia Marmo,^{‡‡‡‡} Sergio Alfieri,^{§§§§} Viveksandeep Thoguluva Chandrasekar,^{|||||} Prateek Sharma,^{|||||} Doug K. Rex,^{¶¶¶¶} Alessandro Repici,^{*,b} and Cesare Hassan^{####,b}

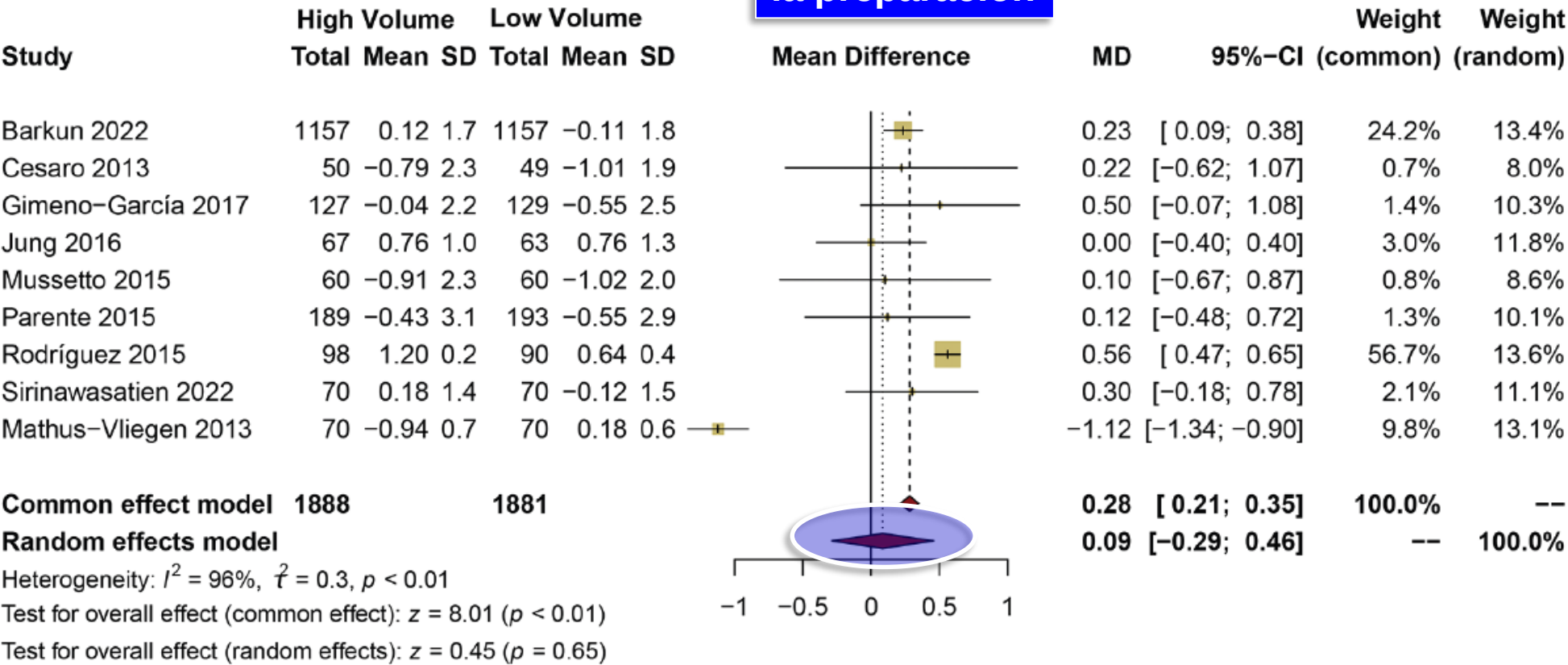
CONCLUSIONS:

Based on a systematic review of 17 randomized controlled trials, low-volume, split-dose regimens appear to be as effective as high-volume, split-dose regimens in bowel cleansing and are better tolerated, with superior compliance.

The safety and effects of high- and low-volume polyethylene glycol bowel preparation methods before colonoscopy on bowel cleanliness: a systematic review and meta-analysis

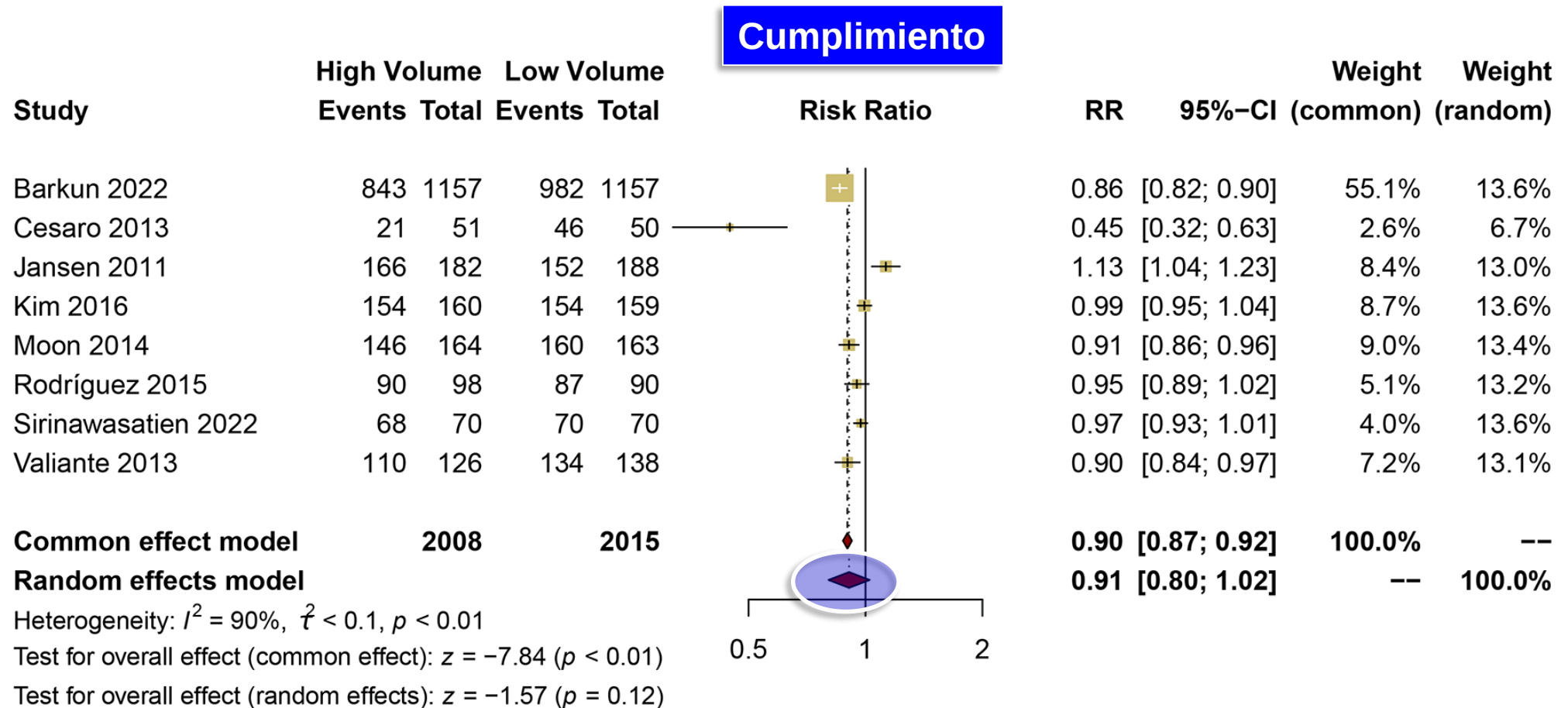
Guangting Ma, Xiaojuan Fang

Calidad de la preparación



The safety and effects of high- and low-volume polyethylene glycol bowel preparation methods before colonoscopy on bowel cleanliness: a systematic review and meta-analysis

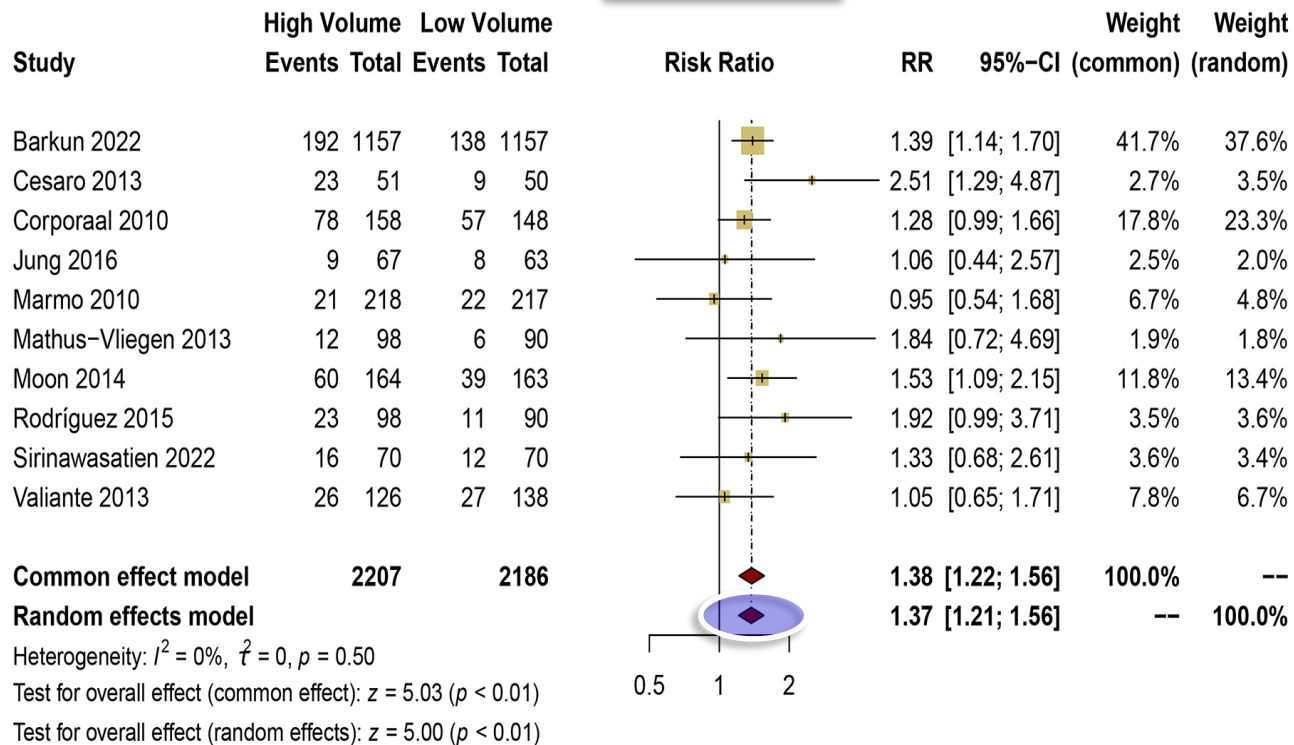
Guangting Ma, Xiaojuan Fang



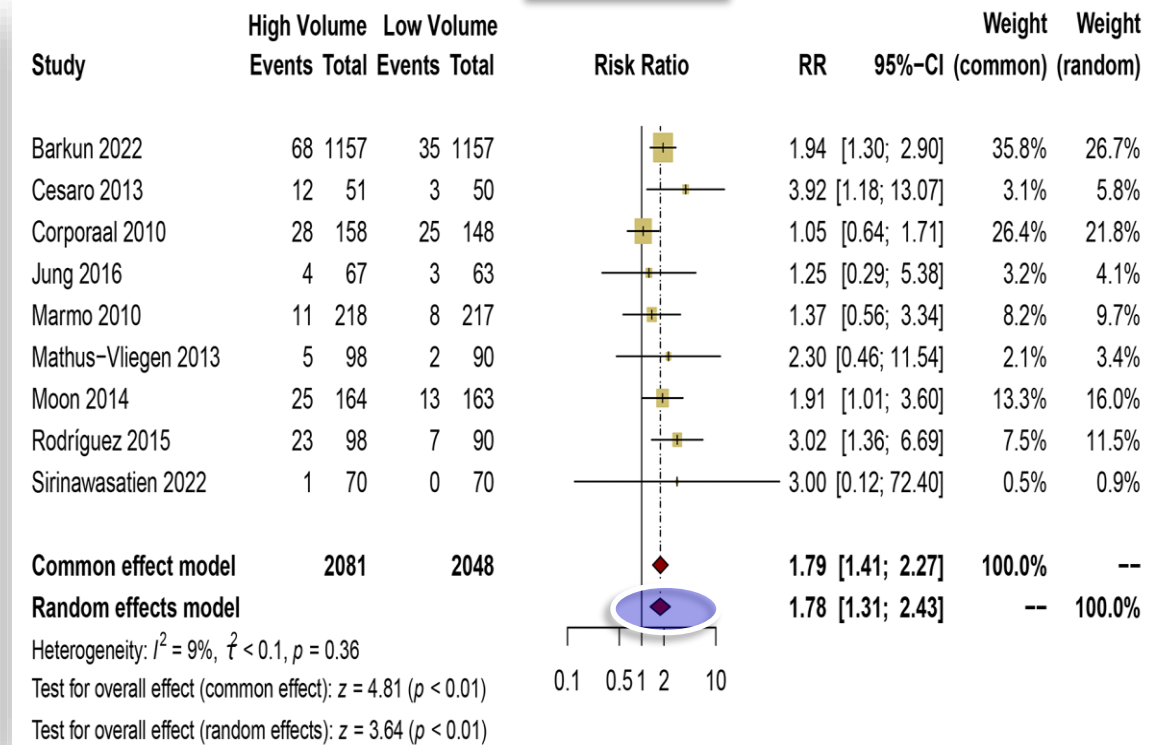
The safety and effects of high- and low-volume polyethylene glycol bowel preparation methods before colonoscopy on bowel cleanliness: a systematic review and meta-analysis

Guangting Ma, Xiaojuan Fang

Náuseas



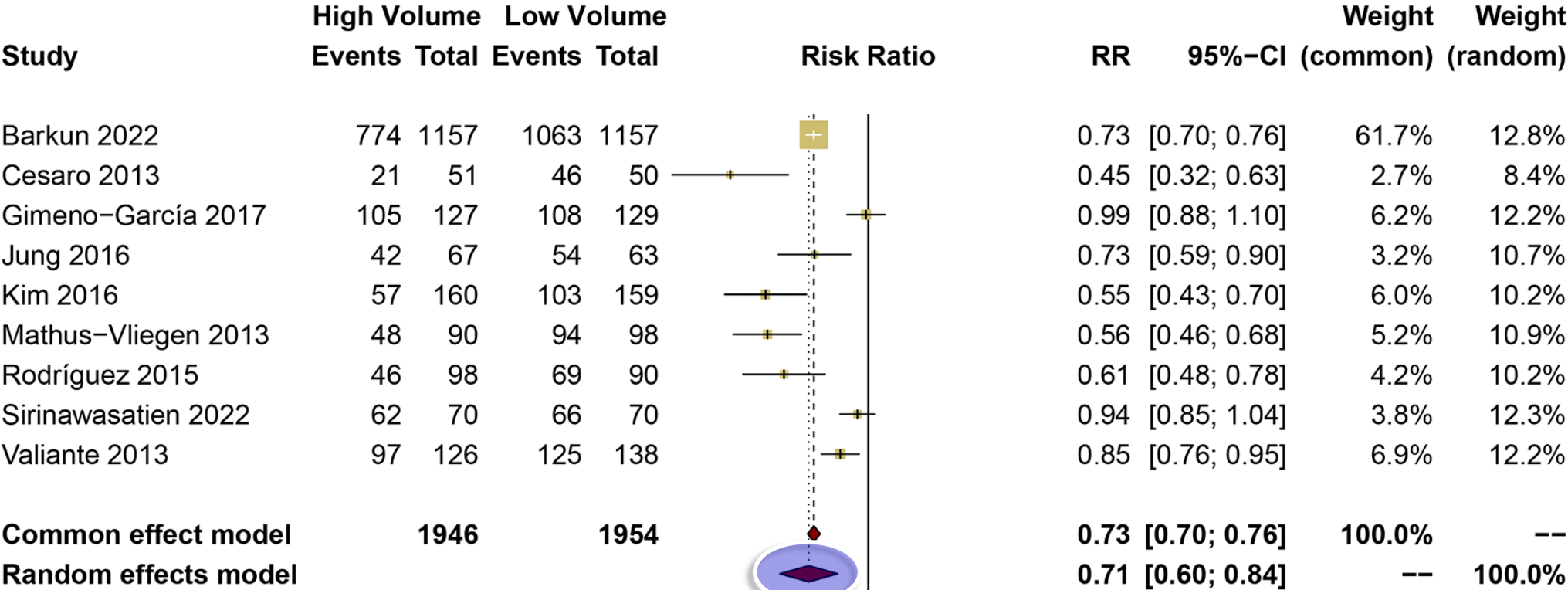
Vómito



The safety and effects of high- and low-volume polyethylene glycol bowel preparation methods before colonoscopy on bowel cleanliness: a systematic review and meta-analysis

Guangting Ma, Xiaojuan Fang

Disposición de repetirlo



Heterogeneity: $I^2 = 89\%$, $\tau^2 < 0.1$, $p < 0.01$

Test for overall effect (common effect): $z = -17.18$ ($p < 0.01$)

Test for overall effect (random effects): $z = -4.06$ ($p < 0.01$)

Mensajes para la casa

Calidad en colonoscopia inicia con el colon limpio
Por cada hora de atraso 10% mal preparados
Colonoscopia AM: dosis divididas
Colonoscopias PM: preparación por la mañana
Instrucciones verbales y escritas
PEG es seguro y eficaz

PEG altos volúmenes



PEG Bajos volúmenes



Ma G, J Gastrointest Oncol 2023;14:1759-69

Bhandari R, et. Al. J Clin Gastroenterol 2023;57:920-2

Muchas gracias!

