

Preparación para colonoscopia en el 2021?

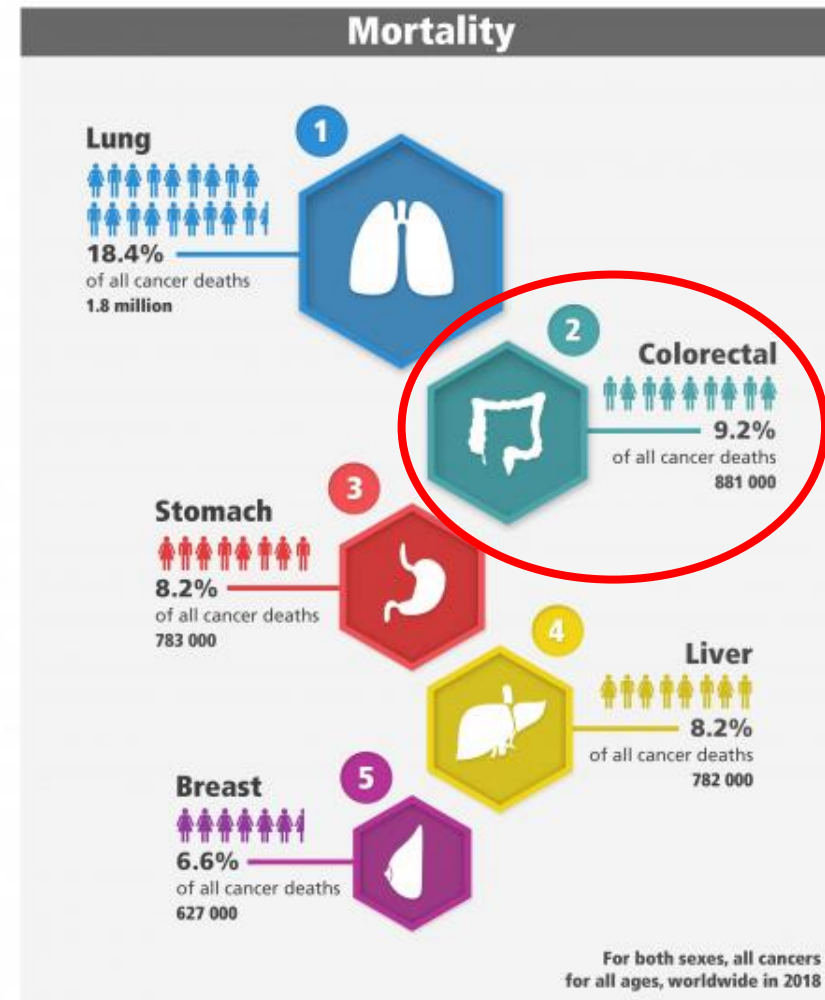
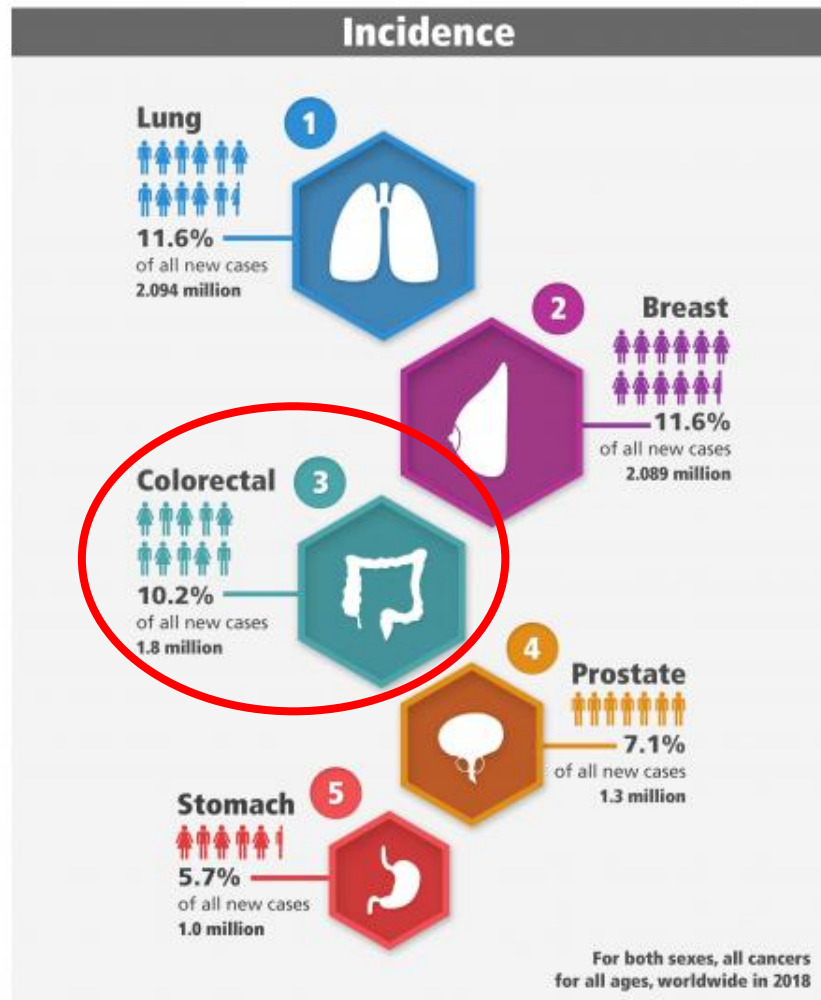
William Otero R MD, FAGA, FACP
Profesor Titular de Medicina
Universidad Nacional de Colombia
Hospital Universitario Nacional de Colombia



CANCER TODAY

The five most commonly diagnosed cancer types

Percentages of new cancer cases and cancer deaths worldwide in 2018

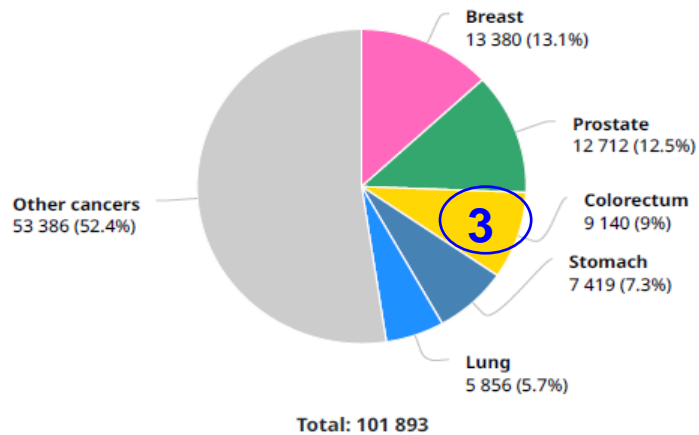


Cáncer colorectal 2018

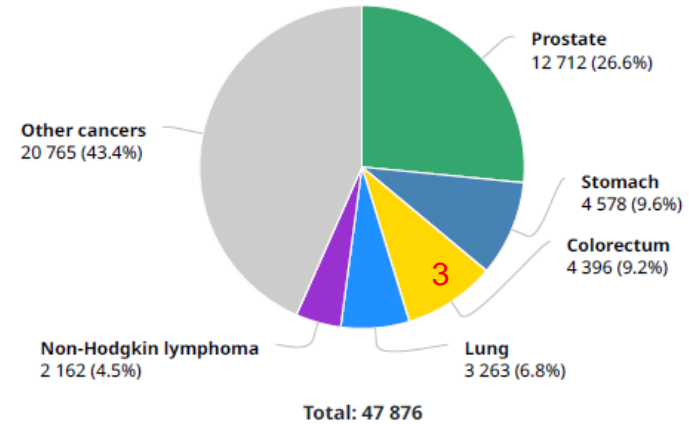
49 464 687



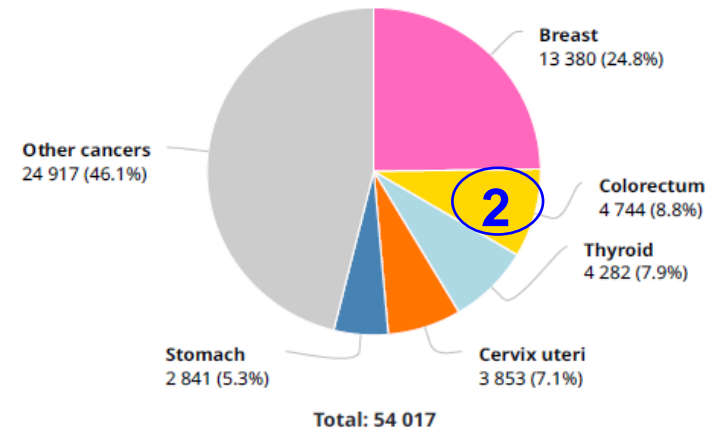
Number of new cases in 2018, both sexes, all ages



Number of new cases in 2018, males, all ages

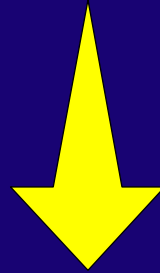


Number of new cases in 2018, females, all ages



<https://gco.iarc.fr/today/data/factsheets/populations/170-colombia-fact-sheets.pdf>

USA 6% población general



Tendrán CCR

Tamización 45 vs 50 años/1000 pacientes tamizados / vida

LYG: Años salvados	SCREENING TEST	LYG	NO. OF CSY	MODEL RECOMMENDABLE
CSY Colonoscopia	CSY every 10 y, 45-75	429	5646	Yes
	CSY every 10 y, 50-75	404	4836	No
CTC Colonografía TAC	CTC every 5 y, 45-75	390	2666	Yes
	CTC every 5 y, 50-75	368	2430	No
FSIG Sigmoidoscopia Flexible	FSIG every 5 y, 45-75	403	3761	Yes
	FSIG every 5 y, 50-75	380	3426	No
FIT Test fecal Inmunoquímico	FIT yearly, 45-75	403	2698	Yes
	FIT yearly, 50-75	377	2402	No
HSgFOBT Guayaco alta Sensibilidad	HSgFOBT yearly, 45-75	403	3364	No
	HSgFOBT yearly, 50-75	377	2956	No
Mt-sDNA Multi blanco DNA fecal	mt-sDNA every 3 y, 45-75	376	2640	No
	mt-sDNA every 3 y, 50-75	350	2331	No

Tamización “Screening”



46-63% de muertes
por CCR se relacionan
No “escreening”

Colonoscopia

No es un examen de rutina

No es un trabajo

Es una pasión!

W. Otero

***Conocer la
Historia clínica***

***Conocer la
indicación***

***Colonoscopia
Exitosa***

***Familiarizado
Colonoscopio***

***Adecuada
Preparación***

***Familiarizado
Con enfermeras***

***Familiarizado
Anestesiólogo***



***Todo el personal
mirando la pantalla***



Bourke M. Endoscopy Handbook. Gastroenterological Society of Australia, 2016

Enfermera: fundamental!!!

**Conocer los accesorios y usos
Correcta posición etc etc**

***Participa activamente y ayuda
A identificar lesiones !!!!***

Nurse Observation During Colonoscopy Increases Polyp Detection: A Prospective Study

Harry R. Aslanian, MD¹, Frederick K. Shiell,
Priya A. Jamidar, MD¹ and Uzma D. Siddiqui

OBJECTIVES: To determine whether

METHODS: Consecutive patients undergoing colonoscopy or ph

RESULTS: Of 502 patients, 20% had adenoma detection during nurse observation. With nurse observation, there was a 2.03 fold increase in the adenoma detection rate with nurse observation.

CONCLUSIONS: Nurse observation during colonoscopy was associated with an increase in the number of polyps found per colonoscopy.



Uzma D. Siddiqui, MD, MPH², Jason N. Rogart, MD¹,
Harry R. Aslanian, MD¹

OBJECTIVES: To determine whether

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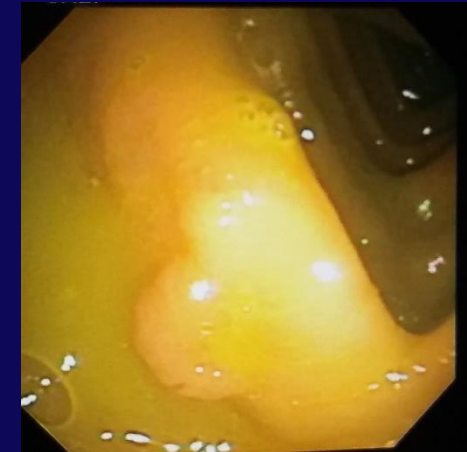
**Con el ojo de la enfermera
20-30% más!!!**

RESULTS: Of 502 patients, 20% had adenoma detection during nurse observation. With nurse observation, there was a 2.03 fold increase in the adenoma detection rate with nurse observation.

CONCLUSIONS: Nurse observation during colonoscopy was associated with an increase in the number of polyps found per colonoscopy.

Gastroenterology 2013;108:166–172;

Enfermeras entrenadas concentradas y atentas



Valor mínimo aceptable

Tasa adecuada
Preparación del
colon

85-90%

ADR

20% Global

30% Hombres

25% Mujeres

Tasa intubación
Del ciego

95 %

0 20 40 60 80 100

Tiempo de retirada

6 min

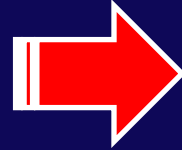
9 minutos

ASGE/AGA 2015
ESGE 2019



Rees CJ, et al. Gut 2016;65:1923–1929
Kaminski MF, ueg Journal 2017;5:309-34
EDGE 2019

**Colon mal
Preparado**



“Catástrofe”

**Impacta negativamente
los principales
Indicadores de calidad**

< Tasa intubación cecal

> Más cáncer de intervalo

> Tiempo de retirada

> Colonoscopias

Más costos

**< Tasa de detección
de adenomas, ADR**

0

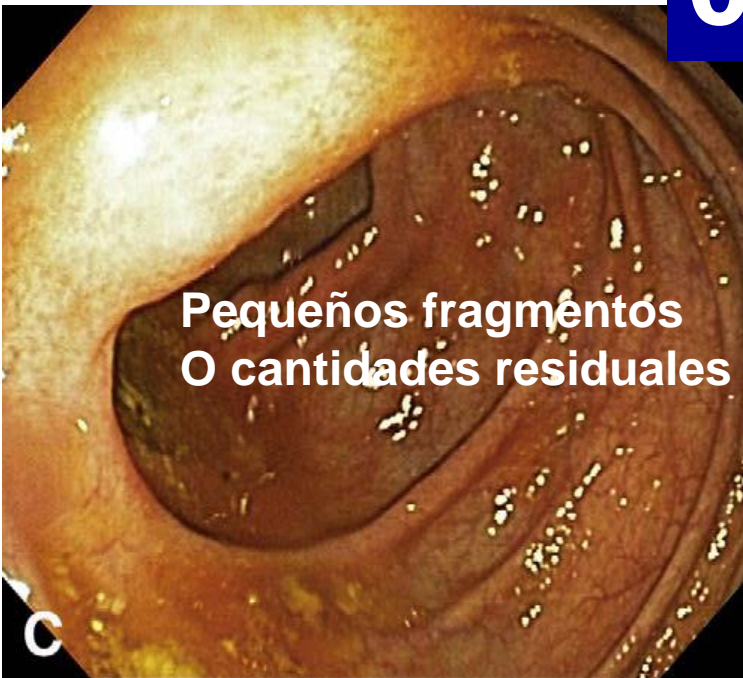


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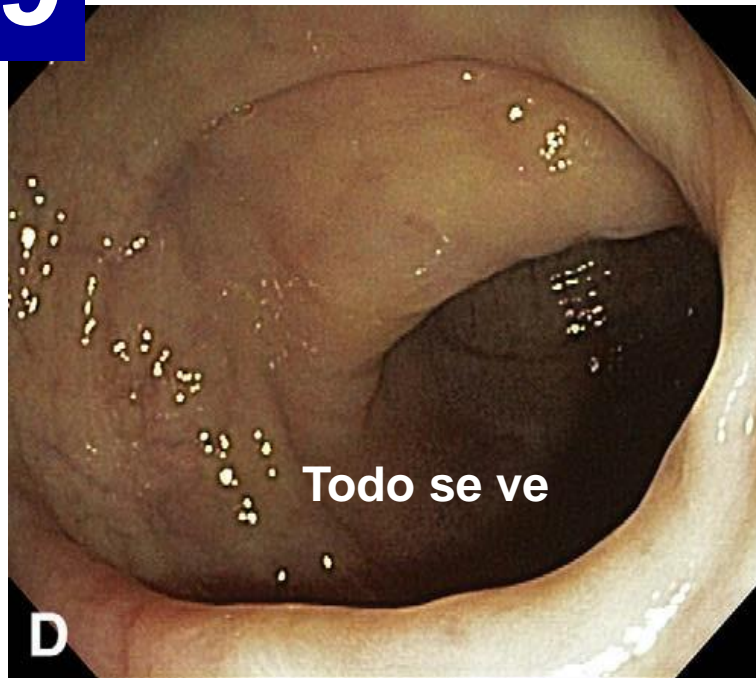


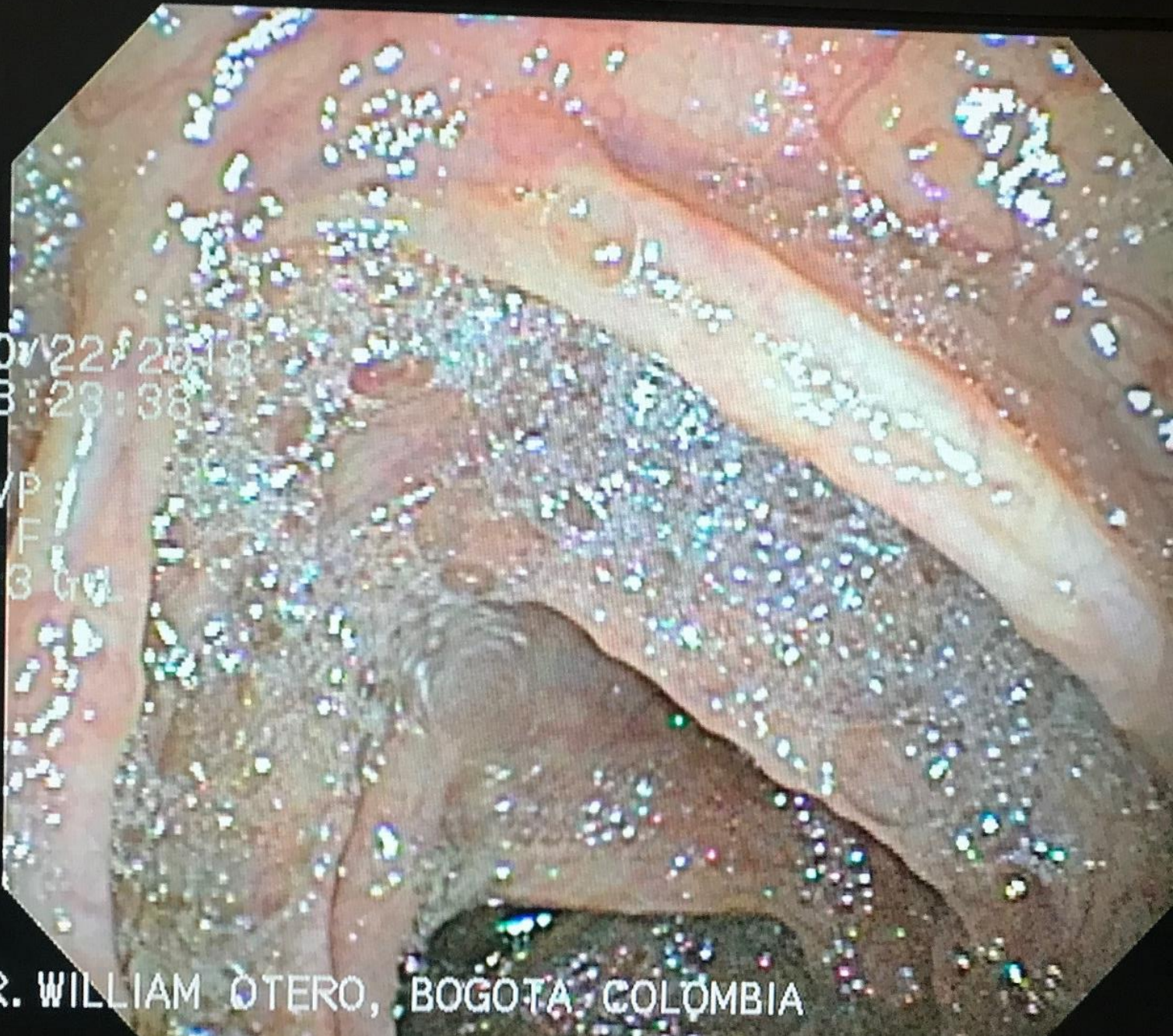
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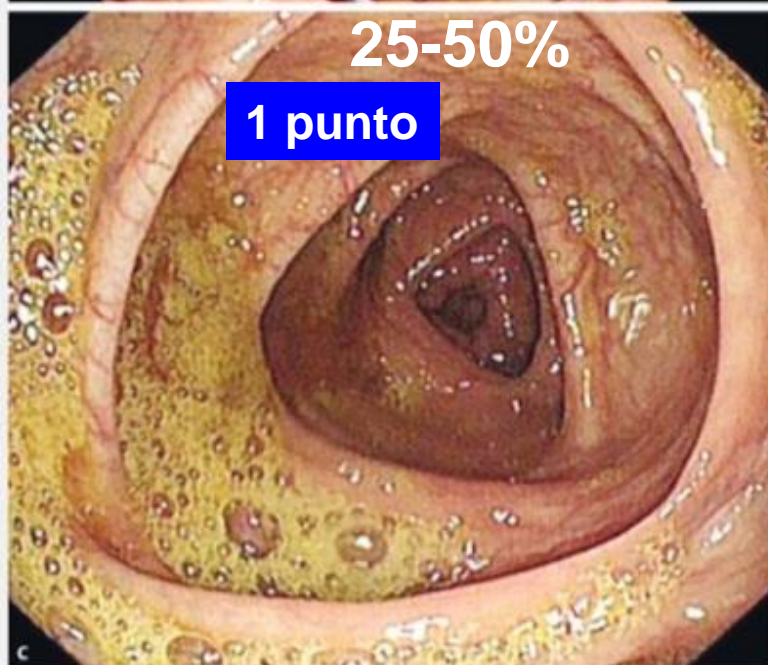
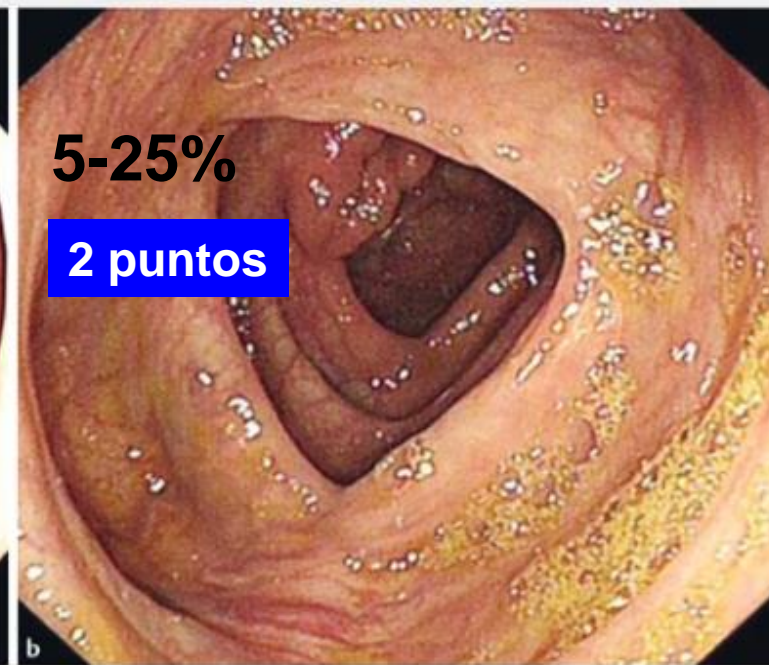
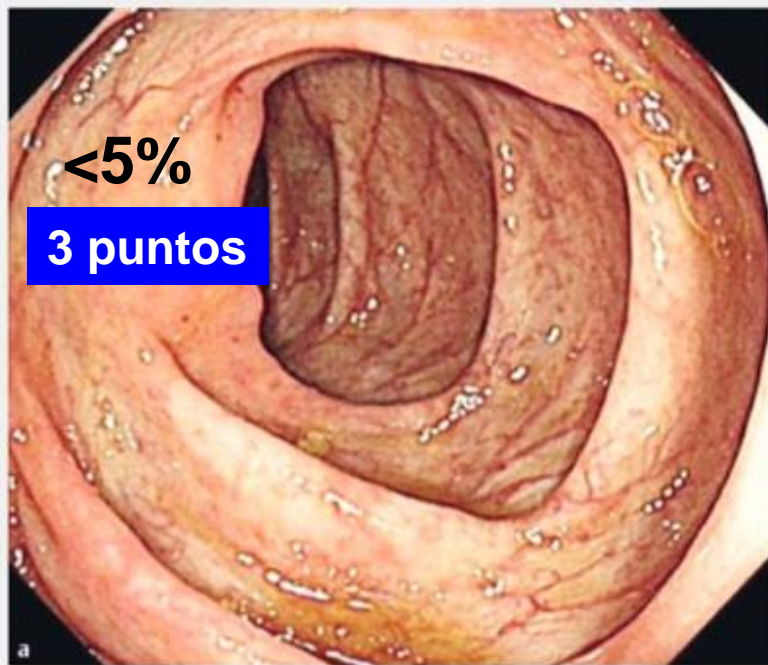




10/22/2018
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D. F.
Et: 3 Gr

DR. WILLIAM OTERO, BOGOTA, COLOMBIA

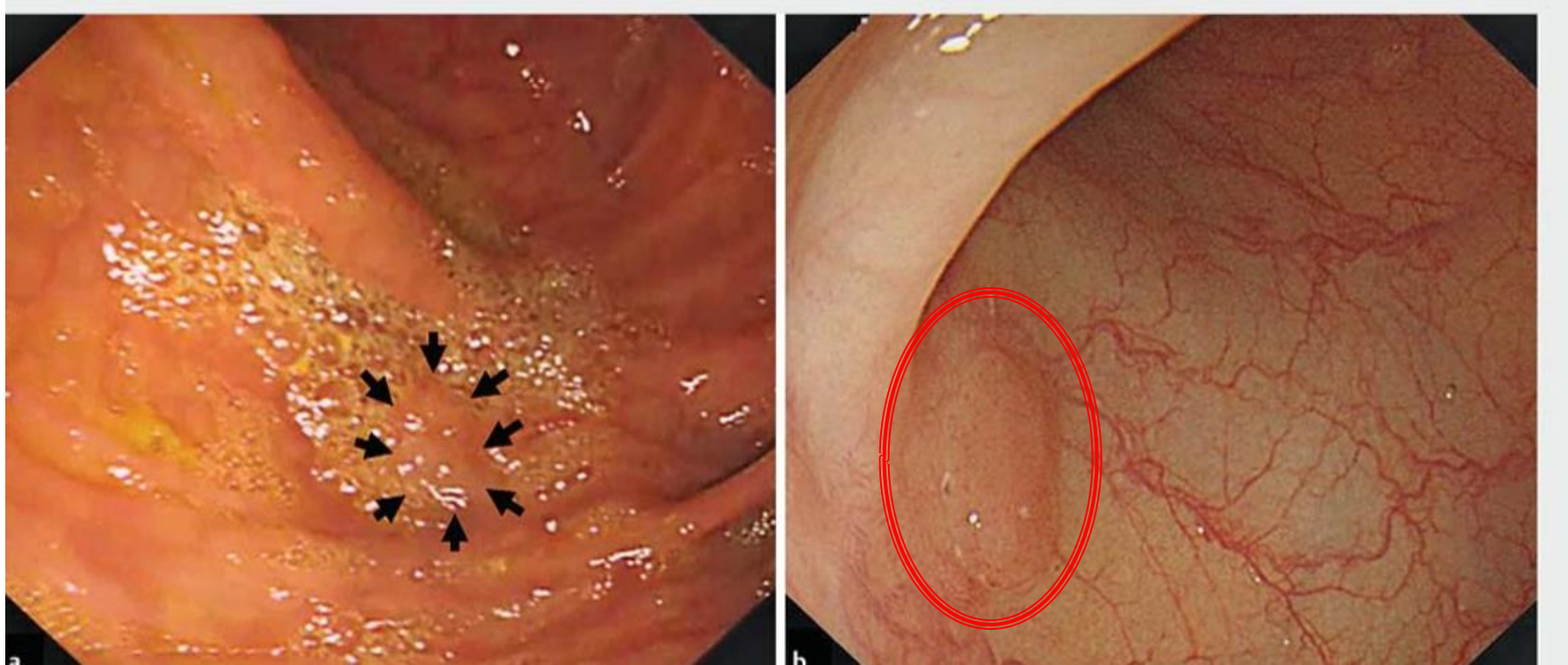


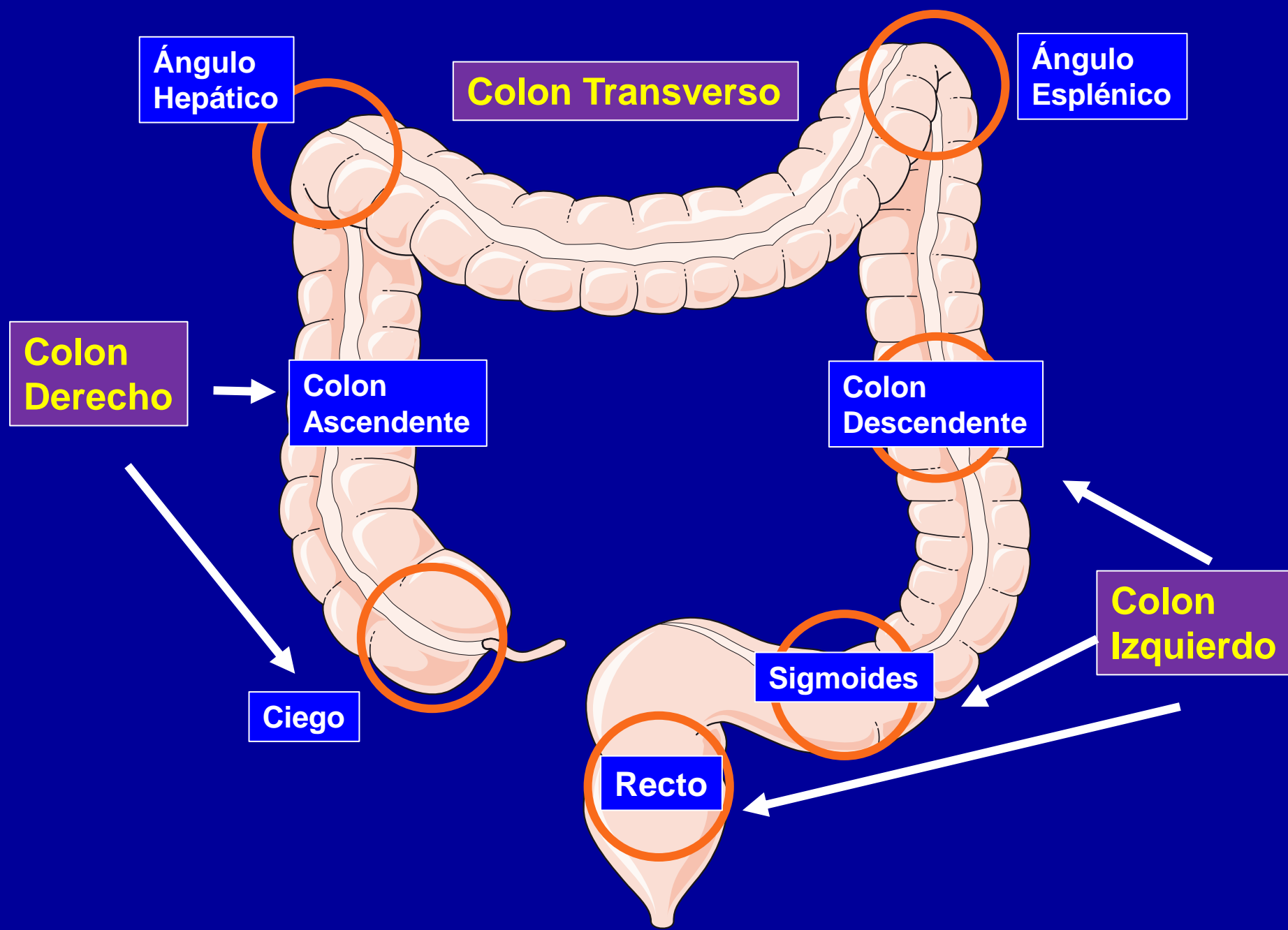
Zhang S, et al. Endoscopy 2018;50:412-422.

Impact of preprocedure simethicone on adenoma detection rate during colonoscopy: a multicenter, endoscopist-blinded randomized controlled trial

Authors

Yu Bai^{1,*}, Jun Fang^{1,2,*}, Sheng-Bing Zhao¹, Dong Wang¹, Yan-Qing Li³, Rui-Hua Shi⁴, Zi-Qin Sun⁵, Ming-Jun Sun⁶, Feng Ji⁷, Jian-Min Si⁸, Zhao-Shen Li¹





Preparación del colon



**Mal preparados
20-40%**



Tasa de error: 35-42%

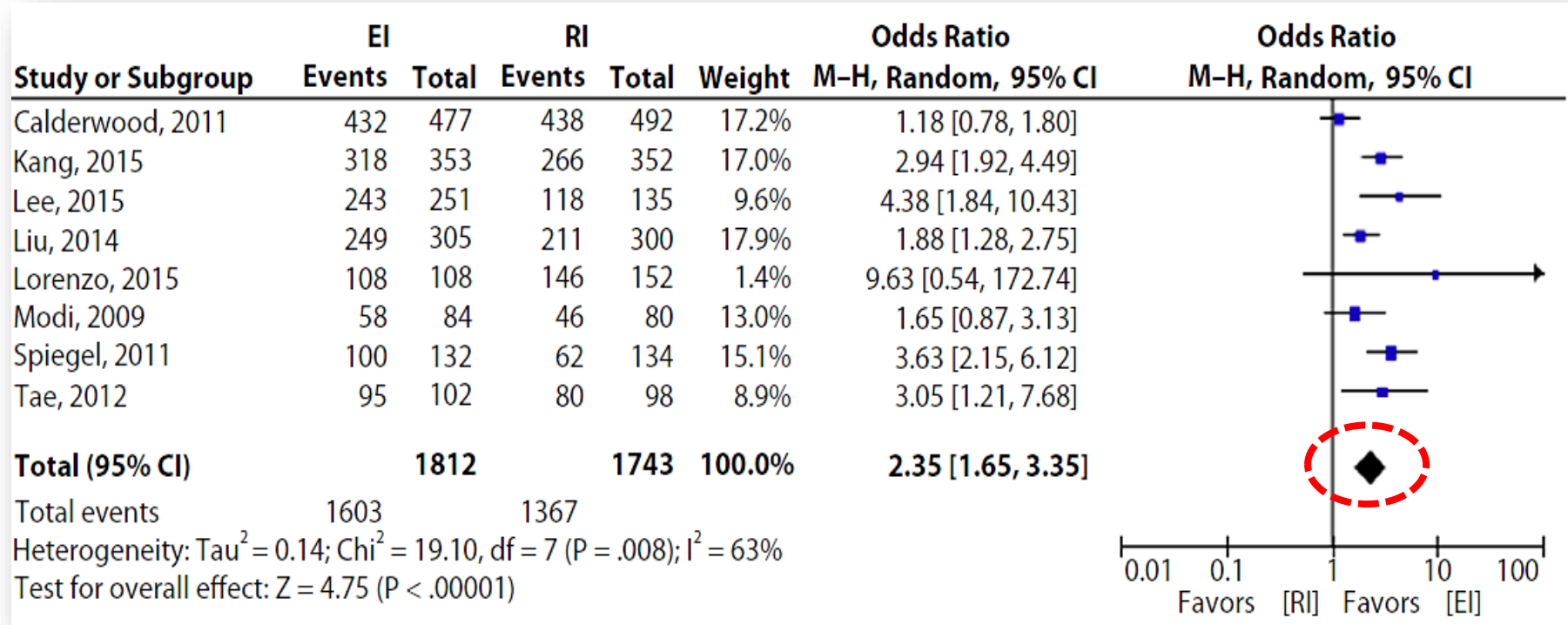
Rex D. Clin Gastroenterol Hepatol 2014;12:458-62
Lebwohl B, Gastrointest Endos 2011;73:1207-14
Frohlich F, Gastrointest Endosc 2005;61:378-84

Estrategias para mejorar la preparación

Enhanced instructions improve the quality of bowel preparation for colonoscopy: a meta-analysis of randomized controlled trials

Xiaoyang Guo, MD,^{1,*} Zhiping Yang, MD,^{1,*} Lina Zhao, MD,^{2,*} Felix Leung, MD,^{3,4} Hui Luo, MD,¹
 Xiaoyu Kang, MD,¹ Xin Li, MD,⁵ Hui Jia, MD,¹ Shengye Yang, MD,¹ Qin Tao, MD,¹ Yanglin Pan, MD,¹
 Xuegang Guo, MD¹

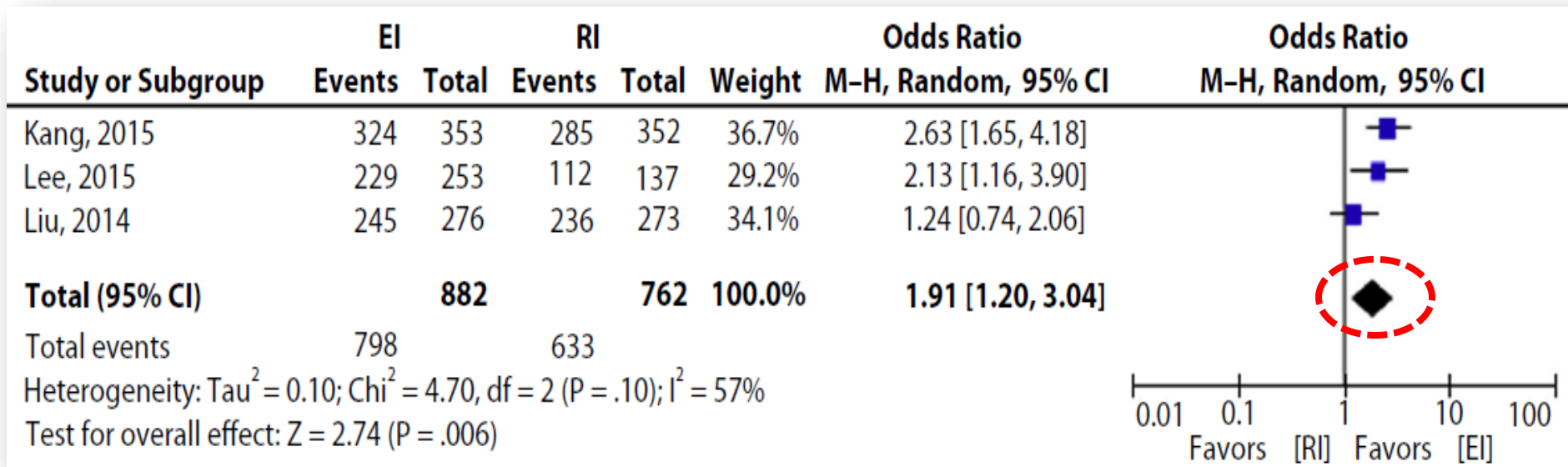
Calidad de la preparación



Enhanced instructions improve the quality of bowel preparation for colonoscopy: a meta-analysis of randomized controlled trials

Xiaoyang Guo, MD,^{1,*} Zhiping Yang, MD,^{1,*} Lina Zhao, MD,^{2,*} Felix Leung, MD,^{3,4} Hui Luo, MD,¹
 Xiaoyu Kang, MD,¹ Xin Li, MD,⁵ Hui Jia, MD,¹ Shengye Yang, MD,¹ Qin Tao, MD,¹ Yanglin Pan, MD,¹
 Xuegang Guo, MD¹

Evitar Repetir la Colonoscopia



Reinforced education improves the quality of bowel preparation for colonoscopy: An updated meta-analysis of randomized controlled trials

Xiaoyang Guo^{1,2}, Xin Li³, Zhiyan Wang³, Junli Zhai³, Qiang Liu¹, Kang Ding¹, Yanglin Pan²*

**Instrucciones
Escritas, verbales
Audiovisual**



Preparación del colon

ESGE y ASGE

**Recomiendan la utilización de ayudas visuales
Digitales (Celulares, Tablets, páginas web)
Para aumentar la eficacia de las preparaciones**

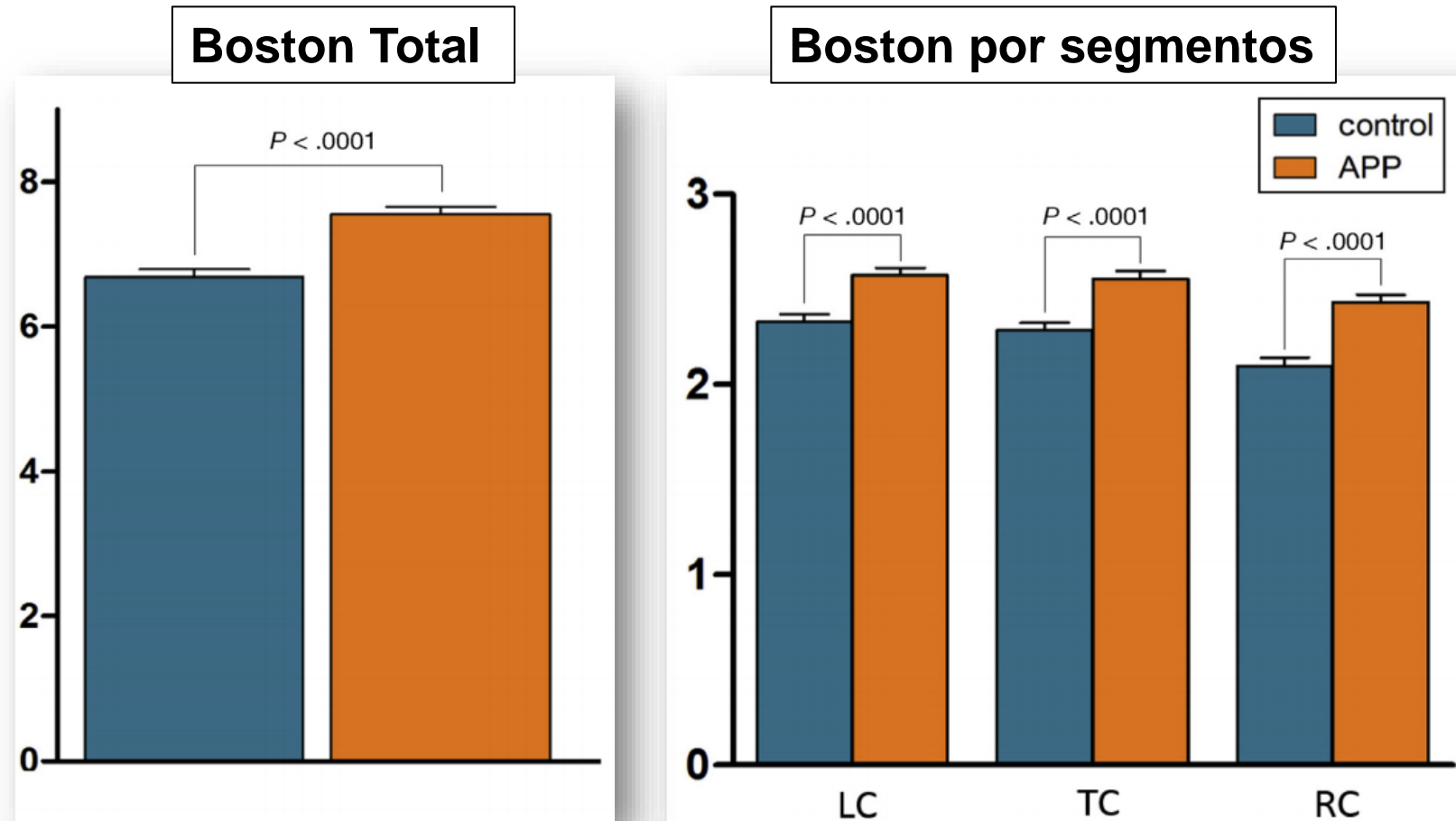
**ESGE 2019
ASGE 2015**

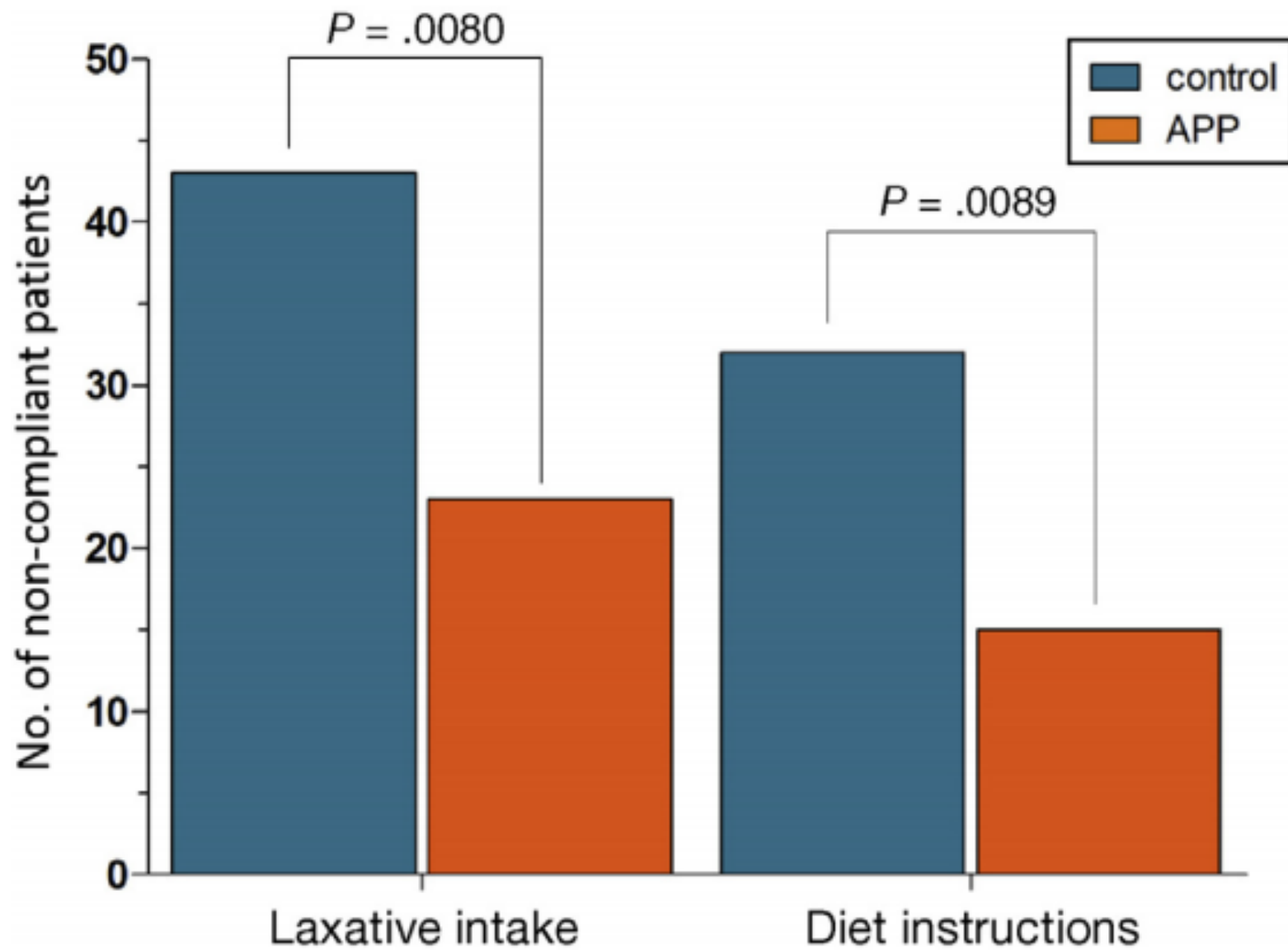


Smartphone Application to Reinforce Education Increases High-Quality Preparation for Colorectal Cancer Screening Colonoscopies in a Randomized Trial

Benjamin Walter,^{*} Rena Frank,^{*} Leopold Ludwig,[‡] Nektarios Dikopoulos,[‡] Martina Mayr,[§] Bruno Neu,[§] Benjamin Mayer,^{||} Alexander Hann,^{||} Benjamin Meier,[#] Karel Caca,[#] Thomas Seufferlein,^{*} and Alexander Meining^{||}

N=500 Instrucciones Orales, Escritas, aleatoriamente APP versus no





Ward nurses-focused educational intervention improves the quality of bowel preparation in inpatients undergoing colonoscopy

A CONSORT-compliant randomized controlled trial

Aihong Liu, PhD^a, Shuhong Yan, MD^a, Huashe Wang, MD^a, Yijia Lin, MD^a, Junkui Wu, PhD^b, Liping Fu, PhD^b, Qining Wu, MD^b, Yi Lu, MD^b, Yanan Liu, MD^{b,*}, Honglei Chen, MD^{c,*}

Comparison of patient's subjective feelings and compliance during bowel preparation.

Characteristics	Educated group (n = 89)	Control group (n = 101)	P-value
Sleep disturbance, No. (%)	17 (19.1)	32 (31.7)	.048
Nausea, No. (%)	16 (18.0)	21 (20.8)	.625
Vomiting No. (%)	10 (11.2)	9 (8.9)	.594
Abdominal pain, No. (%)	13 (14.6)	17 (15.8)	.675
Abdominal bloating, No. (%)	20 (22.5)	29 (27.1)	.456
Compliance to bowel preparation, No. (%)	79 (88.8)	68 (67.3)	<.001

Comparison of bowel preparation quality (n = 190).

Characteristics	Educated group (n = 89)	Control group (n = 101)	P-value
Boston Bowel Preparation Scale scores (mean ± SD)	6.61 ± 1.23	6.01 ± 1.32	.002
Total			
Left colon	2.15 ± 0.51	1.89 ± 0.63	.003
Trans-colon	2.14 ± 0.50	1.95 ± 0.57	.014
Right colon	1.91 ± 0.41	2.03 ± 0.60	.089
Adequate bowel preparation, No. (%)	74 (83.1)	70 (69.3)	.026

Calidad de la preparación



▲
Dark and murky.
NOT OK

▲
Brown and murky.
NOT OK

▲
Dark orange and semi-clear.
NOT OK

▲
Light orange and clear.
ALMOST THERE!

▲
Yellow and clear, like urine.
YOU'RE READY!



Conceptos básicos 2021

Dosis divididas (“split”): PM-AM

Terminar dos horas antes del examen

Instrucciones escritas, verbales, digitales

Preparación es individualizada

ESGE 2019

ASGE 2015

Colonoscopia AM



**Individualizar preparación
Según la hora del examen**



Colonoscopia PM

ASGE, ESGE, ASIA

Momento de la preparación

Terminar la Preparación



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



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

Hora de la colonoscopia

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

Antes de 12 M



Toda la dosis la Noche anterior



Quimo del ID



Se acumula
En el colon

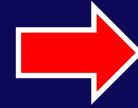


Impide ver la
Mucosa

Jonhson DA, Gastroenterology 2014;147:903-24
Saltzman JR, ASGE GIE 2015;4:781-93

Hora de la colonoscopia

Por la tarde



Preparación
por la mañana



Dosis única
No “*split*”

ASGE, ESGE
Expertos

Preparaciones aprobadas FDA

Iso-osmóticos



PEG
4 litros
2 litros
No dosis
Divididas
NER 1006
(Plenvu®)

Combinados



Citrato Mg con
Pico So4 Na

Hiper-osmóticos



Fosfatos (Travad)
Sulfato (Na-Mg-K)
Suprep-Izinova

2020

Perspectiva del Gastroenterólogo



Fosfato de sodio

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

Lesión renal
Por fosfatos

ASGE . Gastrointest Endosc 2015;81:781-93

Oral sodium phosphate (OSP)

ESGE 2019

RECOMMENDATION

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

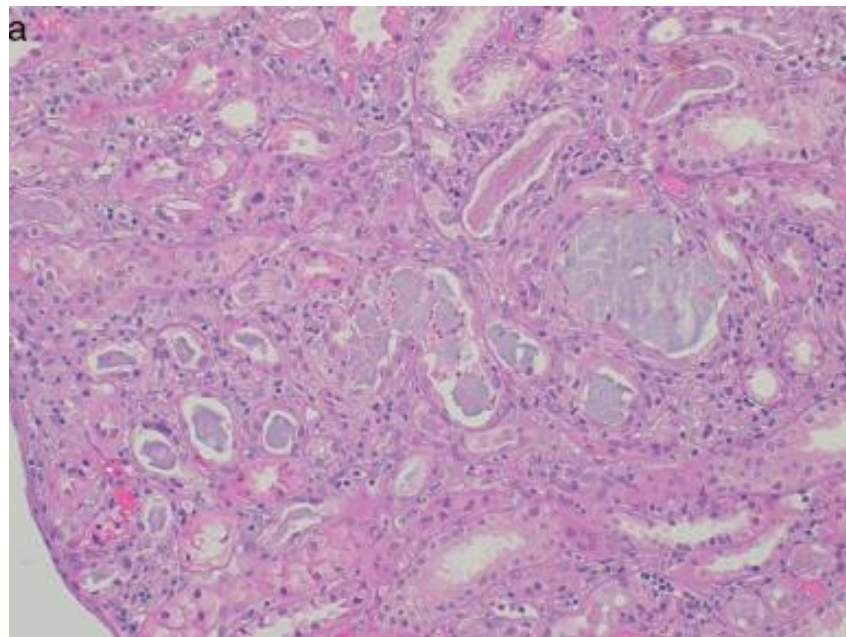
Strong recommendation, low quality evidence.

Fosfosoda

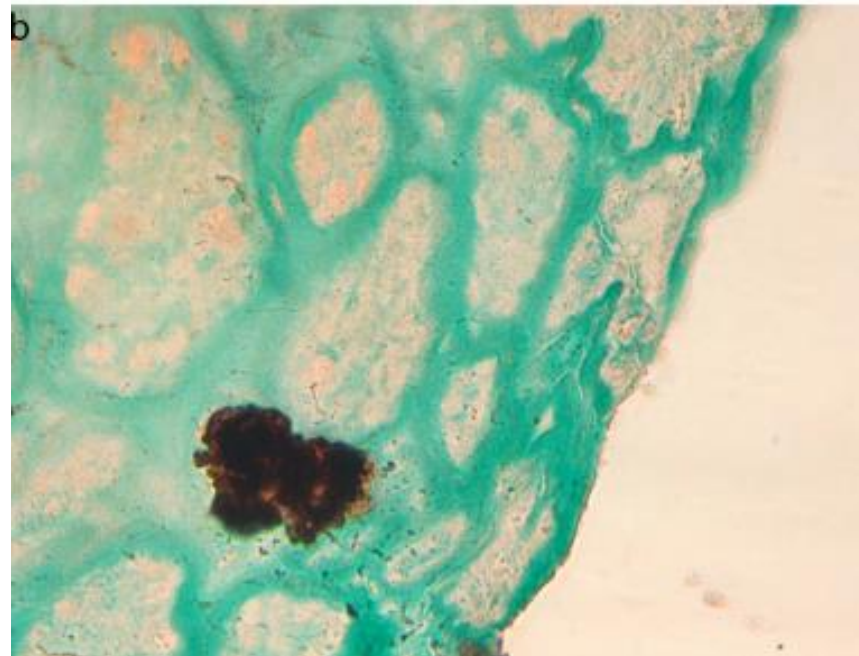


**Ha sido virtualmente
Abandonado en USA**

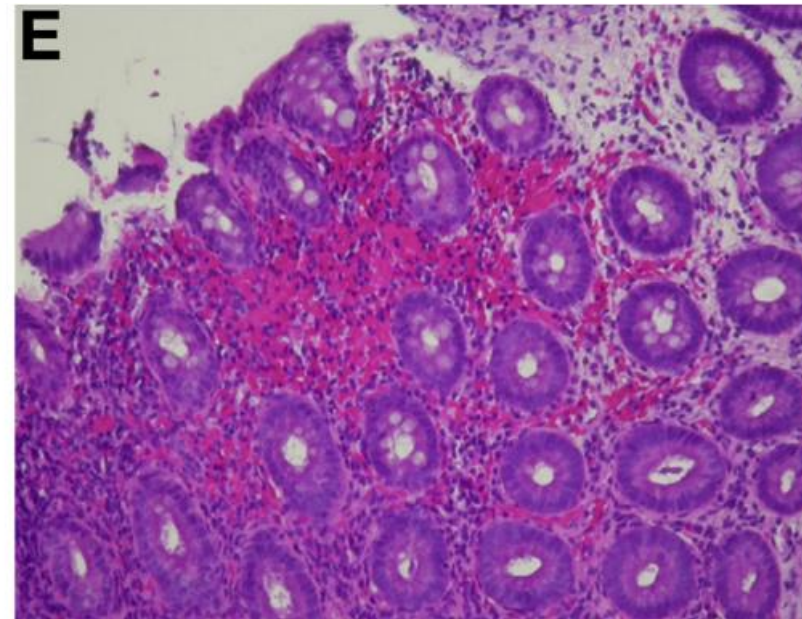
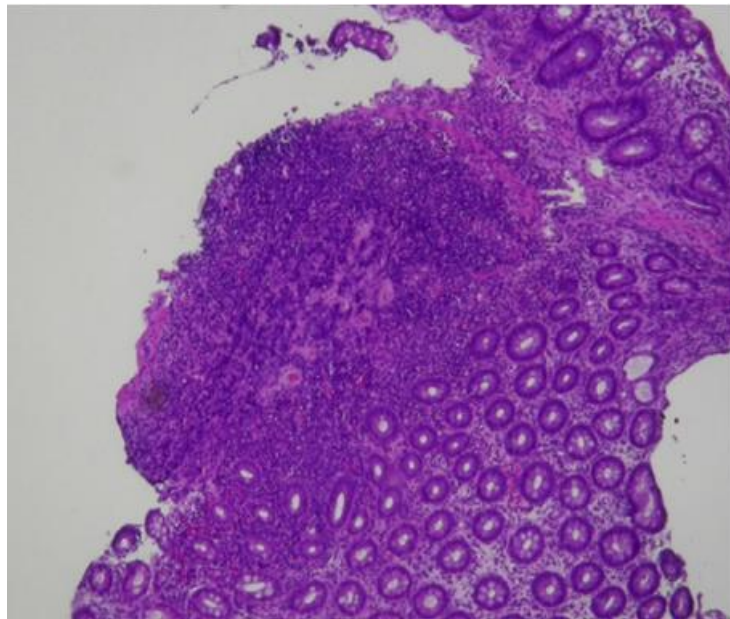
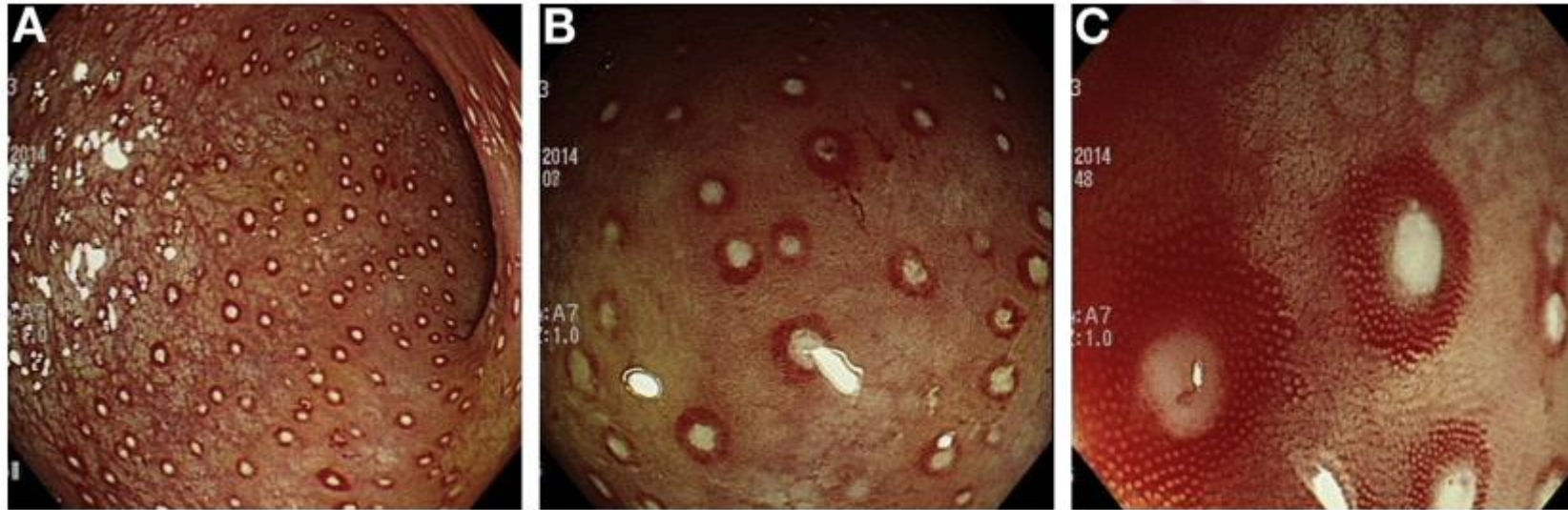
Rex D K, Nat Rev Gastroenterol Hepatol 2014;



Lesión Renal por Fosfato de Sodio



Lesiones aftoides en recto por fosfato de sodio



**La parte más difícil de la Colonoscopia
Es la preparación!!!**

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

ASGE . Gastrointest Endosc 2015;81:781-93



Horrible!!!!



IZINOVA

+



=

500 ml

+

1000 ml



Colonoscopia por la mañana "Split"
Iniciar 1era dosis 6 pm
Repetir por la mañana 5h antes
Terminar 2h antes de la colonoscopia

Colonoscopia por la tarde
Preparación por la mañana
1era dosis Repetir en 2 horas

Agua. Te, café
Gaseosas
Jugos de frutas
Sin pulpa, no rojos
Caldos
NO: leche

Eficacia 98.4%

Safety and Efficacy of Low-Volume Preparation in the Elderly: Oral Sulfate Solution on the Day before and Split-Dose Regimens (SEE SAFE) Study

Min Seob Kwak¹, Jae Myung Cha¹, Hyo-Joon Yang², Dong Il Park², Kyeong Ok Kim³, Jun Lee⁴, Jeong Eun Shin⁵, Young-Eun Joo⁶, Jongha Park⁷, Jeong-Sik Byeon⁸, Hyun Gun Kim⁹, Intestinal Cancer Study Group of the Korean Association for the Study of Intestinal Diseases (KASID)

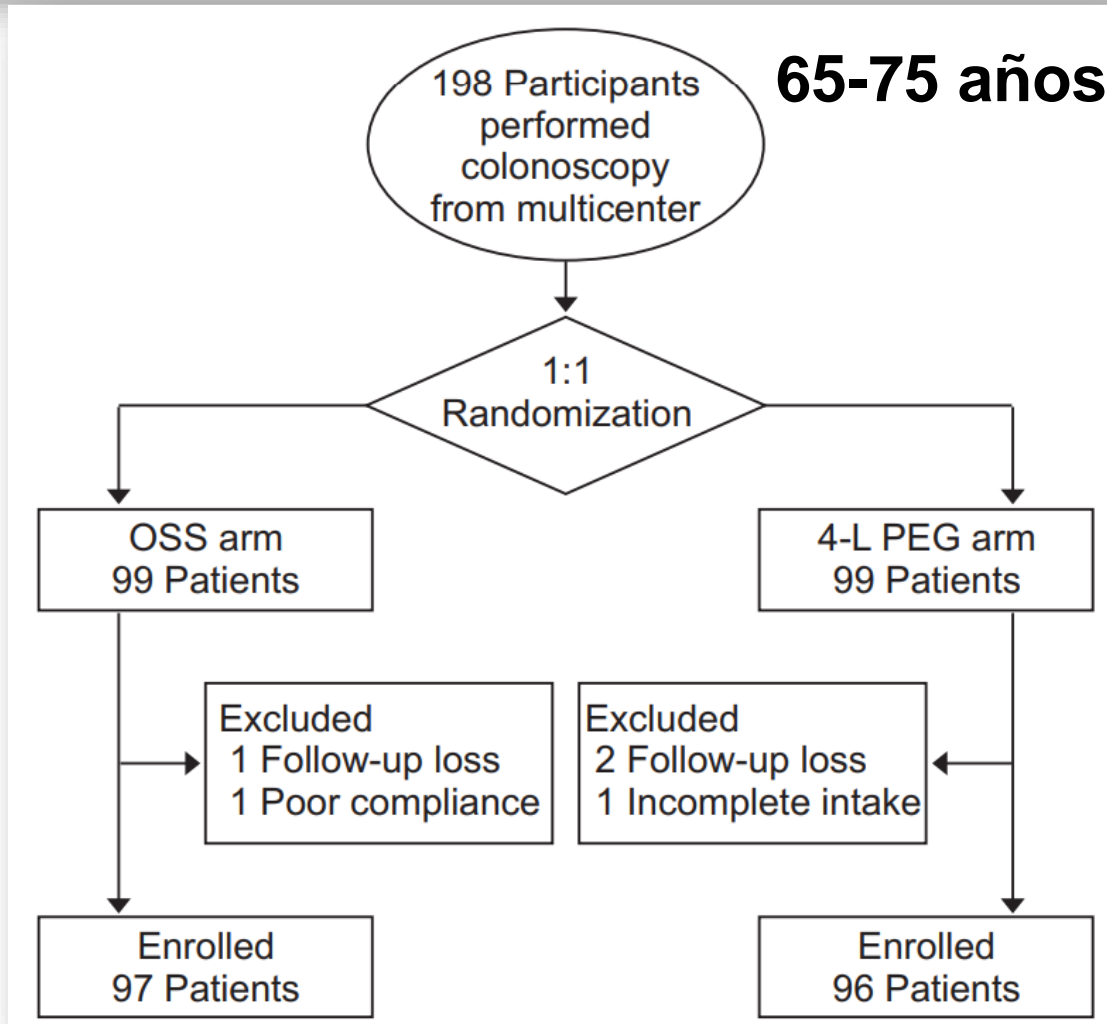


Table 2. Bowel Cleansing Efficacy as Assessed by the Boston Bowel Preparation Scale

Bowel cleansing	OSS	4-L PEG	p-value
Boston Bowel Preparation Scale			
Total	7.9±1.3	7.4±1.3	0.010
Right colon*	2.6±0.5	2.3±0.5	0.001
Transverse colon [†]	2.7±0.5	2.6±0.5	0.177
Left colon [‡]	2.7±0.5	2.6±0.7	0.210
Primary efficacy success			0.747
Adequate	93 (95.9)	91 (94.8)	
Inadequate	4 (4.1)	5 (5.2)	

Table 5. Tolerability and Acceptability of the Preparation Agents

Acceptability	OSS	4-L PEG	p-value
Satisfaction for the preparation			
Taste	6.2±1.9	5.9±2.2	0.328
Amount	7.7±2.1	6.4±2.8	<0.001
Feeling	6.7±2.1	5.8±2.5	0.007
Willingness to repeat same preparation			<0.001
Acceptable	90 (92.8)	65 (67.7)	
Not acceptable	7 (7.2)	31 (32.3)	
Amount of solution actually taken			1.000
Complete	97 (100.0)	96 (100.0)	
Incomplete	0	0	
Overall satisfaction	7.7±1.5	6.8±2.1	0.001

Table 3. Clinical Safety Profiles

Clinical adverse events	OSS	4-L PEG	p-value
Gastrointestinal event			
Nausea	0.8±1.9	0.6±1.7	0.358
Vomiting	0.1±0.8	0.3±1.3	0.170
Abdominal pain	0.7±1.7	0.5±1.7	0.634
Abdominal distension	0.5±1.7	0.5±1.7	0.634
Fecal incontinence	0.0±0.0	0.0±0.0	0.634
Aphthous ulcers	0.0±0.0	0.0±0.0	1.000
Neurologic event			
Sleep disturbance	0.5±1.6	0.6±1.7	0.864
Numbness	0.0±0.1	0.1±0.5	0.434
General weakness	0±0.0	0±0.0	NA
Seizure	0±0.0	0±0.0	NA
Mental change	0±0.0	0±0.0	NA
Thirstiness	0.8±1.9	0.6±1.7	0.358

Similar perfil de seguridad

Table 4. Laboratory Safety Profiles

Variable	OSS			p-value	4-L PEG	
	Before	p-value	After		Before	p-value
Laboratory results						
Renal function profiles						
BUN, mg/dL	16.9±5.9	<0.001	14.5±4.6		14.9±5.0	<0.001
Creatinine, mg/dL	0.9±0.2	0.205	0.9±0.2		0.9±0.3	0.684
MDRD GFR, mL/min	84.4±23.7	0.57	84.4±23.7		84.9±24.8	0.187
AKI						
Electrolyte profiles						
Calcium, mg/dL	9.1±0.5		9.1±0.5		9.1±0.6	0.037
Phosphate, mg/dL	3.5±0.6	0.177	3.5±0.6		3.5±0.5	0.909
Magnesium, mg/dL	2.2±0.2	0.068	2.2±0.2		2.2±0.3	0.490
Sodium, mg/dL	141.3±3.0	0.021	140.4±3.2		140.9±2.4	0.002
Potassium, mmol/L	4.8±4.2	0.829	4.6±3.8		4.7±4.2	0.216
Chloride, mmol/L	105.0±10.4	0.030	102.6±3.4		103.0±10.9	0.285

**Similar : No alteraciones
Importantes**



Solución de Sulfato Menos frecuente preparación inadecuada Más rápida llegada al ciego

Ji Hyung Nam*, Seok Bo Hong*, Yun Jeong Lim, Seongju Lee, Hyoun Woo Kang, Jae Hak Kim and Jin Ho Lee

Department of Internal Medicine, Dongguk University Ilsan Hospital, Goyang, Korea

	Total (n=167)	OSS (n=106)	PEG-AA (n=61)	p-value
Age (yr), mean±SD	55.3±14.2	55.1±13.8	59.1±14.0	0.008
Male, n (%)	86 (51.5)	58 (54.7)	28 (45.9)	0.272
Hospitalization, n (%)	34 (20.4)	14 (13.2)	20 (32.8)	0.002
Morning colonoscopy, n (%)	25 (15.0)	16 (15.1)	9 (14.8)	0.953
Split-dose, n (%)	115 (68.9)	106 (100)	9 (14.8)	<0.001
Inadequate bowel preparation	33 (19.8)	13 (12.3)	20 (32.8)	0.001
Cecal intubation time (min), mean±SD	6.7±5.3	4.9±3.9	9.8±6.0	<0.001
Adenoma detection rate, n (%)	49 (29.3)	30 (28.3)	19 (31.1)	0.697

OSS, oral sulfate solution; PEG-AA, polyethylene glycol plus ascorbic acid; SD, standard deviation.

Inadecuada preparación Sulfato Vs PEG AA

Subgrupos

Variables	Subgroups	n	Inadequate preparation, n (%)		OR (95% CI)	p-value
			OSS	PEG-AA		
Age	<50 yr	57	7/40 (17.5)	2/17 (11.8)	0.96 (0.16–5.70)	0.959
	≥50 yr	110	6/66 (9.1)	18/44 (40.9)	0.13 (0.04–0.41)	0.001
Sex	Male	86	11/58 (19.0)	9/28 (32.1)	0.58 (0.19–1.79)	0.339
	Female	81	2/48 (4.2)	11/33 (33.3)	0.06 (0.01–0.34)	0.002
Colonoscopy timing	Morning	25	0/16 (0)	1/9 (11.1)	N/A	
	Afternoon	142	13/90 (14.4)	9/52 (36.5)	0.28 (0.11–0.70)	0.006
Hospitalization	Outpatient	133	12/92 (13.0)	2/41 (29.3)	0.30 (0.11–0.77)	0.013
	Inpatient	34	1/14 (7.1)	8/20 (40.0)	0.14 (0.01–1.97)	0.145

Superior a PEG AA

**Mayores de 50 años, Mujeres, Ambulatorios
Colonoscopia por la tarde**

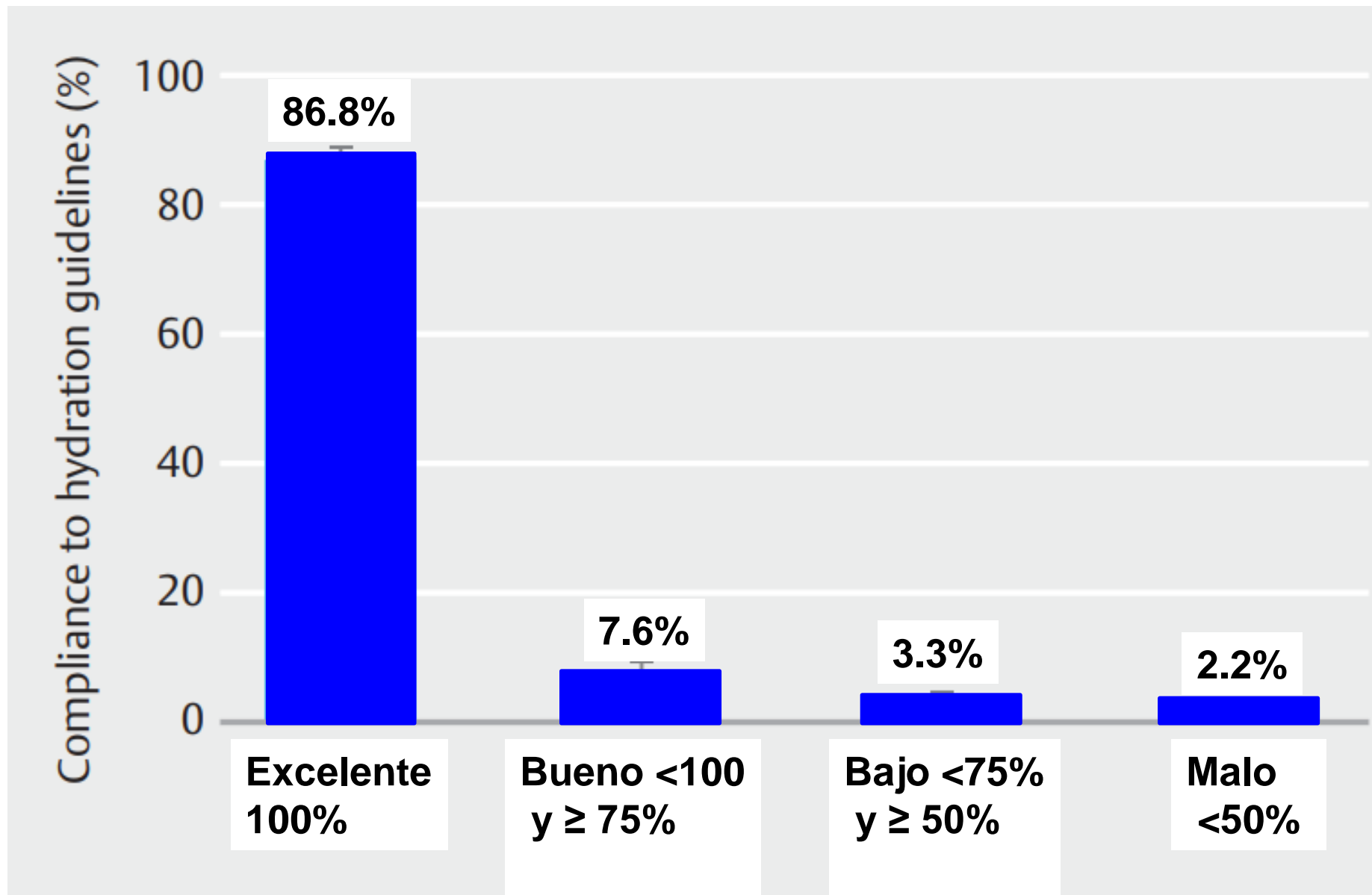
A European, multicentre, observational, post-authorisation safety study of oral sulphate solution: compliance and safety



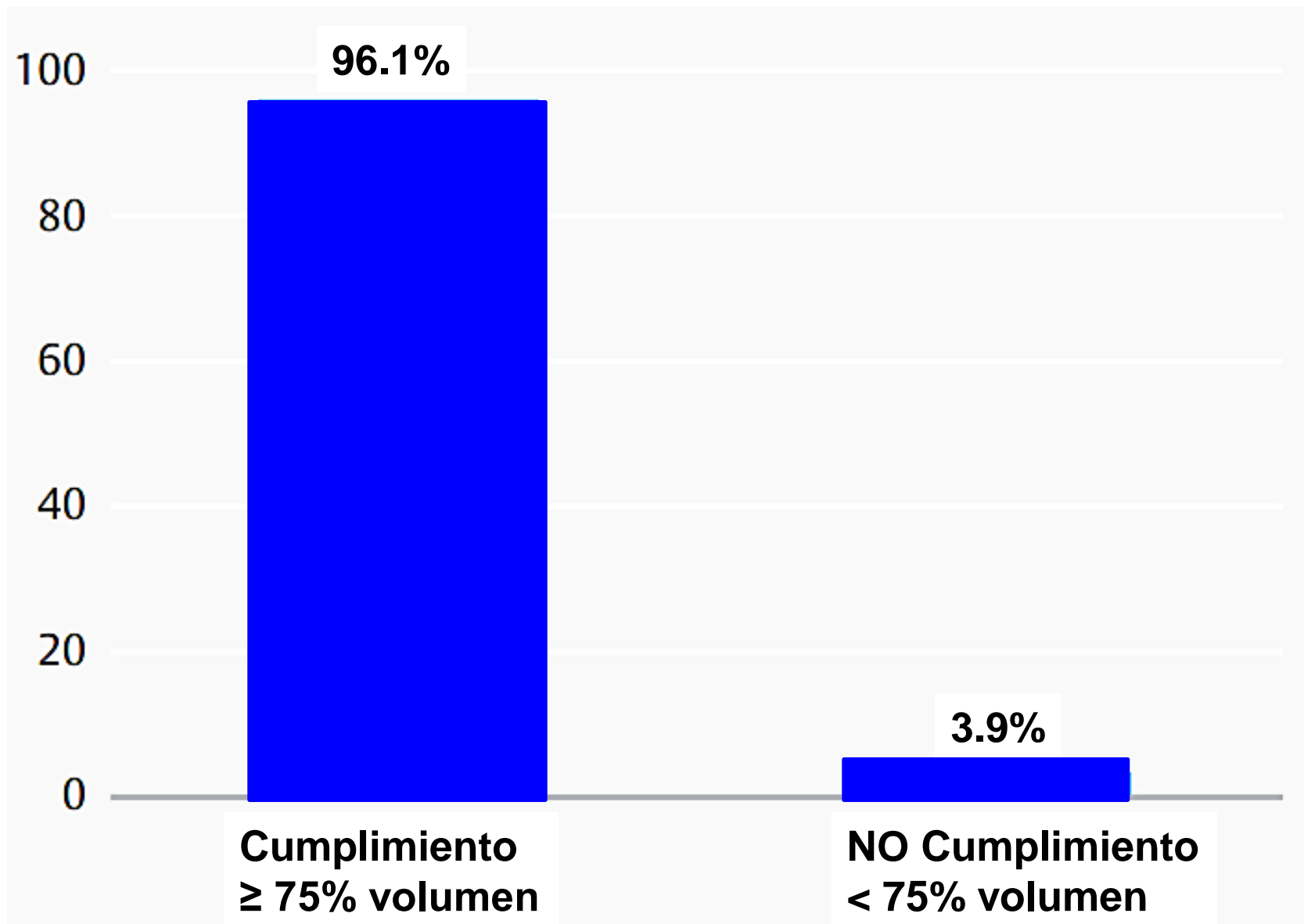
Authors

Jaroslav Regula¹, Manon C.W. Spaander², Stepan Suchanek³, Anne Kornowski⁴, Valerie Perrot⁴, Wolfgang Fischbach⁵, the DUS investigators

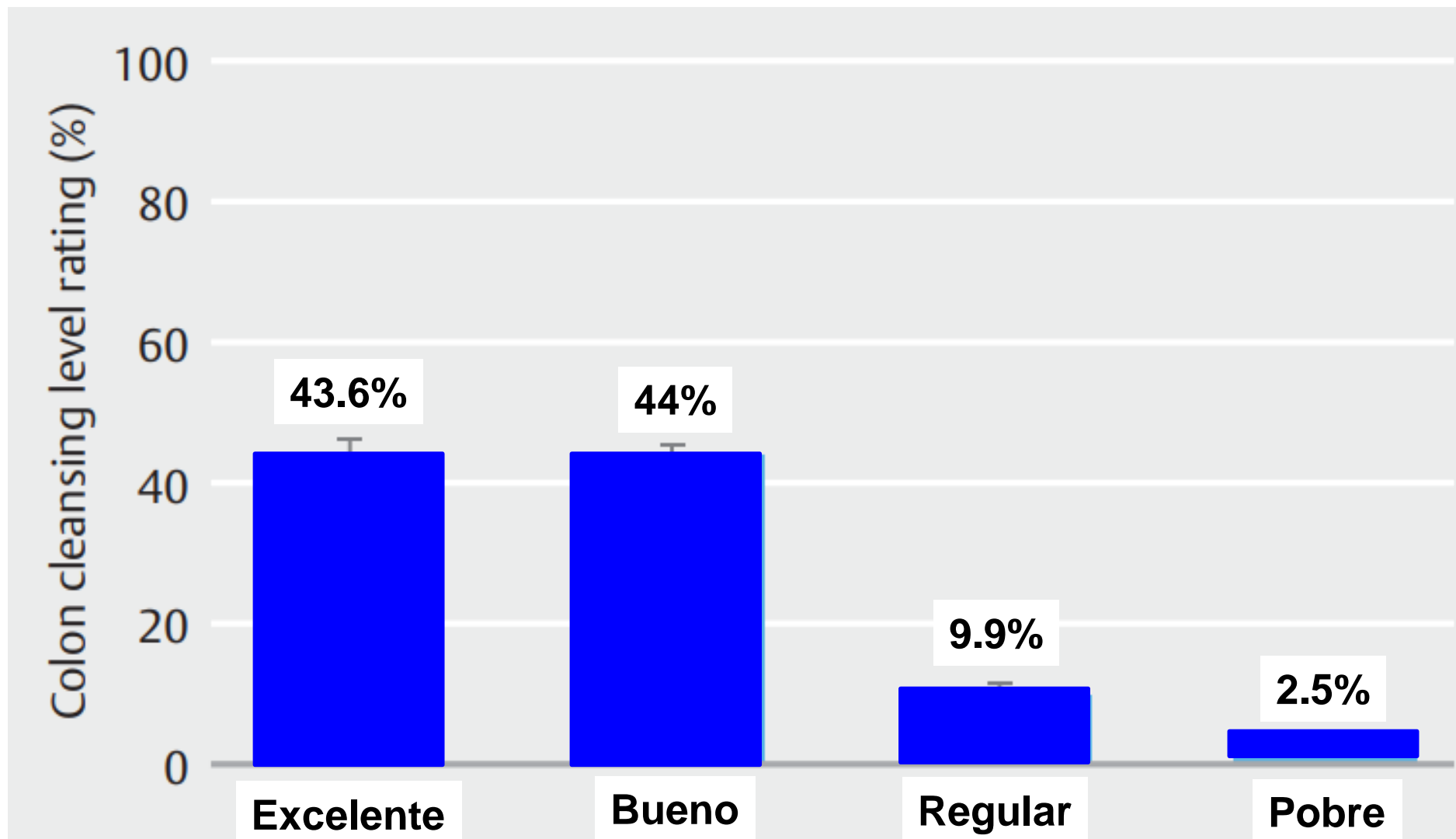
Regula J, Endosc Int Open 2020;8:247–56



Soluciones de sulfato, Cumplimiento



Calidad de la limpieza evaluada por el médico



RESEARCH ARTICLE

Impact of bowel preparation type on the quality of colonoscopy: a multicenter community-based study

Daniel Martin, MD¹, Saqib Walayat, MD¹, Zohair Ahmad, MD²,
Sonu Dhillon, MD¹, Carl V. Asche, PhD^{2,3,4}, Srinivas Puli, MD¹ and
Jinma Ren, PhD^{2,3*}

28 780. colonoscopias /Screening, vigilancia, Illinois

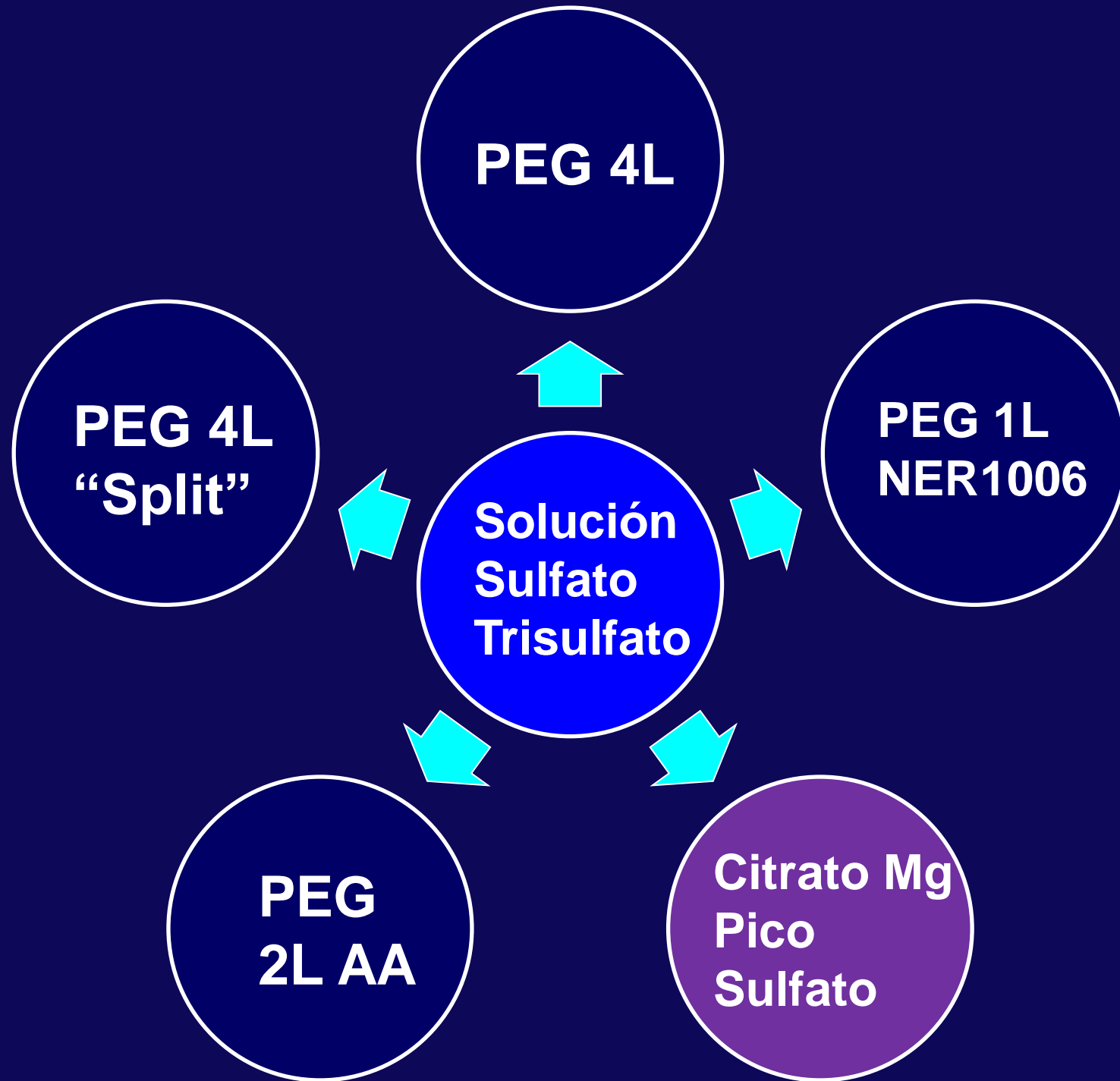
J Comm Hosp Intern Med Persp 2016;6: 31074sww

Table 2. Influence of bowel preparations type on the quality of preparations

Bowel preparations type	N	Bowel prep assessment (%)			
		Excellent	Good	Fair	Poor
PEG-based preparations	19,912	14.5	71.4	12.1	1.9
Magnesium-based preparations	107	11.2	65.4	21.5	1.9
Sodium phosphate-based preparations	707	31.8	58.1	8.1	2.0
Sodium sulfate-based preparations	6,081	55.8	37.4	5.4	1.4
Other preparations	322	26.7	52.2	17.1	4.0
Not recorded	1,257	33.2	50.0	13.3	3.5

Conclusión:

“Siempre que sea posible utilizar solución de sulfato”



PEG con electrolitos

Insuficiencia cardíaca

Insuficiencia renal avanzada

Dep Cr <30 ml/min

Cirrosis con ascitis

Colitis ulcerativa activa

Rex D K, Clin Gastroenterol Hepatol 2014;12:458-62

Instrucciones
De acuerdo a la
hora Colonoscopia
Y si es AM o PM



www.izical.com.co

Usuario: izinova

Contraseña: abbott

Mensajes para la casa

Enfermera fundamental Colonoscopia

Calidad en colonoscopia empieza colon limpio

Por cada hora de atraso 10% mal preparados

Colonoscopia AM: dosis divididas

Colonoscopias PM: preparación por la mañana

Instrucciones verbales y escritas

Solución de sulfato excelente tolerancia eficacia 98%

Muchas gracias!