



Inteligencia Artificial (IA) y Avances en Endoscopia digestiva alta y Colonoscopia

Carlos Rueda- Gastroenterólogo
INCANCER- CLINICA ALEMANA
Julio-2024-Santiago

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MAY 18-21, 2024 | WASHINGTON, D.C.

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Conflicto de intereses

- Gastroenterología Latinoamericana
- Órgano que difunde nuestro quehacer diario y científico, hace más de 30 años
- Editor

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DDW 2024- WASHINGTON D.C –USA

“TODO SE TRATA DE TU CAMINO”

- Asistentes 25.000 a 30.000
5 días de congreso, 1 de ellos es para temas especiales , 4 generales
- 408 sesiones, de 1 a 2 horas cada una, 4 a 6 conferencias por sesión
- e-Posters todos los días
- Simposios de AGA , todo un día o de ASGE
- Desayunos con el profesor
- Logística impresionante

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Modalidad online logística

- Inscribirse
- Escoger los tópicos a los que quieres participar
- Estar atento a las horas, que se presenta, mismo huso horario que Chile
- Largas jornadas frente al computador o a la App , mañana y tarde por 5 días
- Cuando liberan todas las presentaciones... ahí empieza lo entretenido

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Sat, May 18

Incorporating GI Cancer Screening Guidelines Into Practice - Moving Beyond Endoscopy and

8:00am-9:30am
151A - Walter E. Washington

Artificial Intelligence in GI Cancer Screening an

10:00am-11:30am
152AB - Walter E. Washington

Sp174: AI & MACHINE LEARNING PRIMER GI CANCER

Dennis Shung
10:00am-10:20am
152AB - Walter E. Washington

Sp175: AI IN ENDOSCOPY FOR AND SURVEILLANCE

Prateek Sharma
10:20am-10:40am
152AB - Walter E. Washington

Sp176: MACHINE LEARNING FOR GI CANCER...

10:40am-11:00am

152AB - Walter E. Washington

Sat, May 18

90: MACHINE LEARNING ANALYSIS OF ULTRASONOGRAPHY...
Venkata Sandeep Akshintala
11:00am-11:10am

152AB - Walter E. Washington

91: A CIRC RNA BASED-LIQUID BIOPSY NONINVASIVE AND EARLY...
Yuan Li
11:10am-11:20am

152AB - Walter E. Washington

92: USE OF DEEP LEARNING TO TUMOR MORPHOLOGICAL...
Bahar Saberzadeh Ardestani
11:20am-11:30am

152AB - Walter E. Washington

ASGE AI Institute for Gastroenterology Presents: to Use AI in Your Practice; ADD THE...

12:45pm-1:30pm
ASGE Learning Center, Hall C - Walter

Reducing CRC Incidence Through Screening an
Washington Convention Center
2:00pm-3:30pm

152AB - Walter E. Washington

Sat, May 18

Early-onset GI cancers: Risk Factors, Screening Disparities

4:00pm-5:30pm
151B - Walter E. Washington

Center

225: MODELING THE TUMOR OF EARLY AND...
David Cohen
4:00pm-4:15pm

151B - Walter E. Washington

226: CATCHING CANCERS EARLY? AGE STAGE AT DIAGNOSIS OF...
Jill Timmouth
4:15pm-4:30pm

151B - Walter E. Washington

230: GLOBAL BURDEN OF YOUNG-ONSET CANCER: A SYSTEMATIC...
Yunhao Li
5:15pm-5:30pm

151B - Walter E. Washington



227: EARLY-ONSET COLORECTAL CHARACTERISTICS AND...
Young-Rock Hong
4:30pm-4:45pm

151B - Walter E. Washington

228: RISK FACTORS ASSOCIATED WITH ADENOMAS IN...
Divya Dasani
4:45pm-5:00pm

151B - Walter E. Washington

Sat, May 18

229: TO SCREEN OR NOT TO SCREEN: YOUNG PEOPLE CHOOSE TO...
Rebecca Ekeanvanwu
5:00pm-5:15pm

151B - Walter E. Washington

230: GLOBAL BURDEN OF YOUNG-ONSET CANCER: A SYSTEMATIC...
Yunhao Li
5:15pm-5:30pm

151B - Walter E. Washington

Sun, May 19

High Risk Colon Cancer: The ABCs Of Genetic \$\$\$
6:30am-7:45am

102AB - Walter E. Washington

Immuno-Oncology for the Gastroenterologist: Advances and Implications for

8:00am-9:30am
103AB - Walter E. Washington

Center

Sp409: IMMUNO-ONCOLOGY PRIMER FOR GASTROENTEROLOGIST
Frank A. Sinicrope
8:00am-8:15am

103AB - Walter E. Washington

Sp410: IMMUNOTHERAPY MANAGEMENT MMRD RECTAL CANCER
Guillermo Argiles
8:15am-8:30am

103AB - Walter E. Washington

311: THE PI3K/AKT/MTOR SIGNALING THE SURVIVAL AND...
Rui LIAO
8:30am-8:45am

103AB - Walter E. Washington

Sun, May 19

312: LOW DOSE DOUBLE EPIGENETIC IMPROVES IMMUNOTHERAPY...



Sp471: AGA GUIDELINE: ARTIFICIAL FOR COLORECTAL...

Charles Kahi, Theodore R. Levin
10:30am-10:35am
146AB - Walter E. Washington

Colorectal Cancer Screening and Surveillance: Risk Populations, Including Hereditary...

Charles Kahi, Theodore R. Levin
10:00am-11:30am
Ballroom A - Walter E. Washington

Center
395: FAECAL IMMUNOCHEMICAL TEST TO COLORECTAL NEOPLASIA IN...
Elsa van Liere
10:30am-10:45am

Ballroom A - Walter E. Washington

Center
396: ADENOMA DETECTION RATES ON AND SURVEILLANCE...
Aws Alameri
10:45am-11:00am

Ballroom A - Walter E. Washington

Center
397: TRENDS IN THE ASSOCIATION OF HISTORY OF COLORECTAL...

Zoe Matticks
11:00am-11:15am

Ballroom A - Walter E. Washington

Sun, May 19

398: THE ASSOCIATION BETWEEN THE DEFINITION OF METABOLIC...
Wei-Yuan Chang
11:15am-11:30am

Ballroom A - Walter E. Washington

AI for Cancer Screening

2:00pm-3:30pm
145A - Walter E. Washington

The Current Insights in Bariatric Endoscopy

2:00pm-3:30pm
209ABC - Walter E. Washington

Center
513: MULTICENTER PILOT RANDOMIZED TRIAL EVALUATING THE...
Barham K. Abu Dayyeh
2:02pm-2:09pm

209ABC - Walter E. Washington

514: CLINICAL OUTCOME OF THREE TECHNIQUES OF...
Milutin M Bulajic
2:12pm-2:19pm

209ABC - Walter E. Washington

515: DUODENAL RECELLULARIZATION ELECTROPORATION IN POORLY...
Adrian Sartoretto
2:22pm-2:29pm

209ABC - Walter E. Washington

Sun, May 19

516: ENDOSCOPIC ABLATION OF THE FUNDUS IN ADULTS WITH...
Christopher McGowan
2:32pm-2:39pm

209ABC - Walter E. Washington

517: EFFECT OF ENDOSCOPIC GASTRIC ON HISTOLOGIC...
Pichamol Jirapinvo
2:42pm-2:49pm

209ABC - Walter E. Washington

Center
2:52pm-2:59pm



518: AI-ENABLED ELUCIDATION OF PATHOPHYSIOLOGY IN TYPE...
Farah Abdul Razzak

Advances in Generative AI/NLP in

4:00pm-5:30pm
Sp631: STATE-OF-THE ART THE FUTURE OF...
Christopher C. Thompson
3:12pm-3:27pm

209ABC - Walter E. Washington

Center
152AB - Walter E. Washington

Center

Contenido a tratar

- IA o AI , relevancia dentro de nuestra practica en la Gastroenterología
- Tips en Endoscopia alta y colonoscopia
- Eposters
- Mensaje a casa

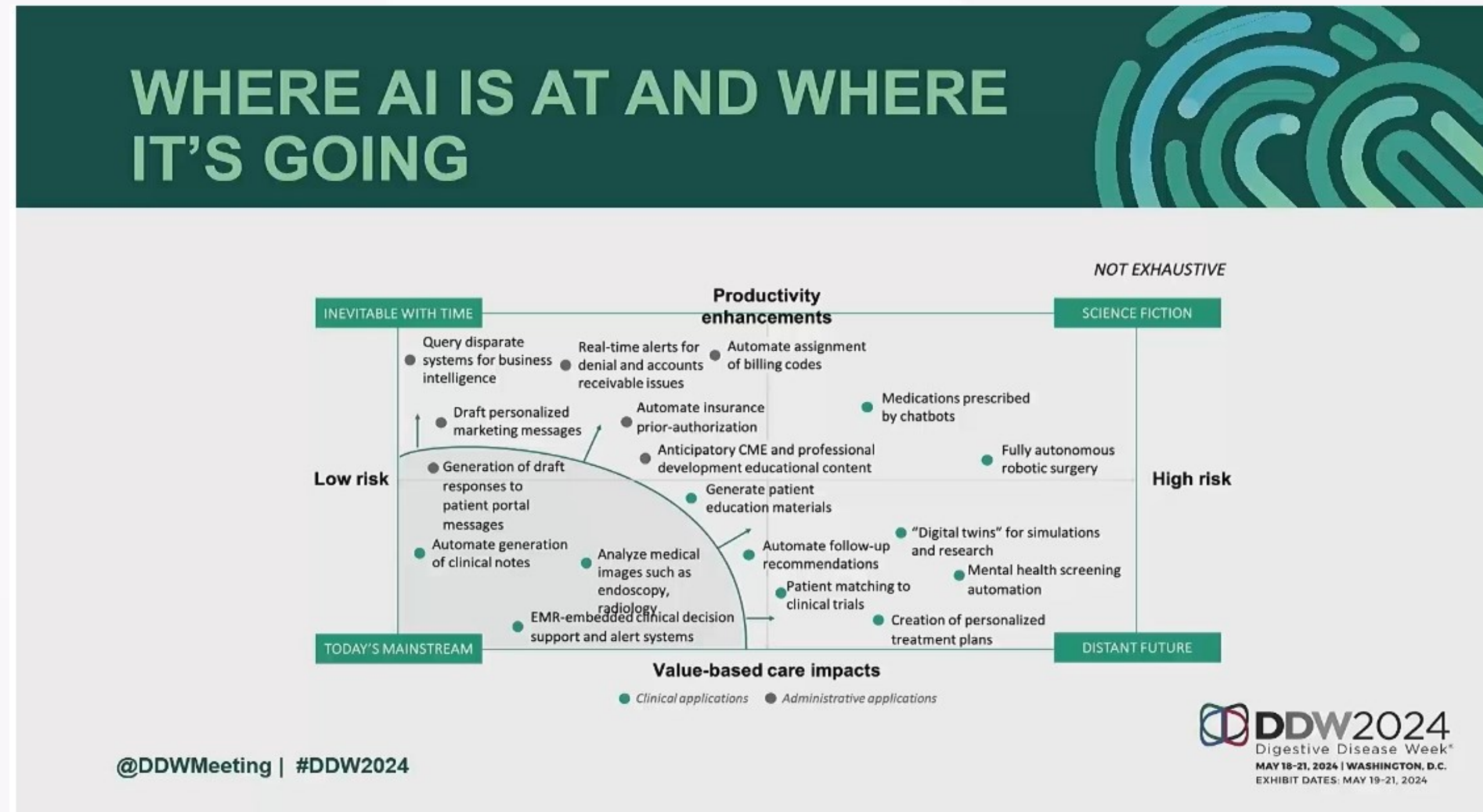
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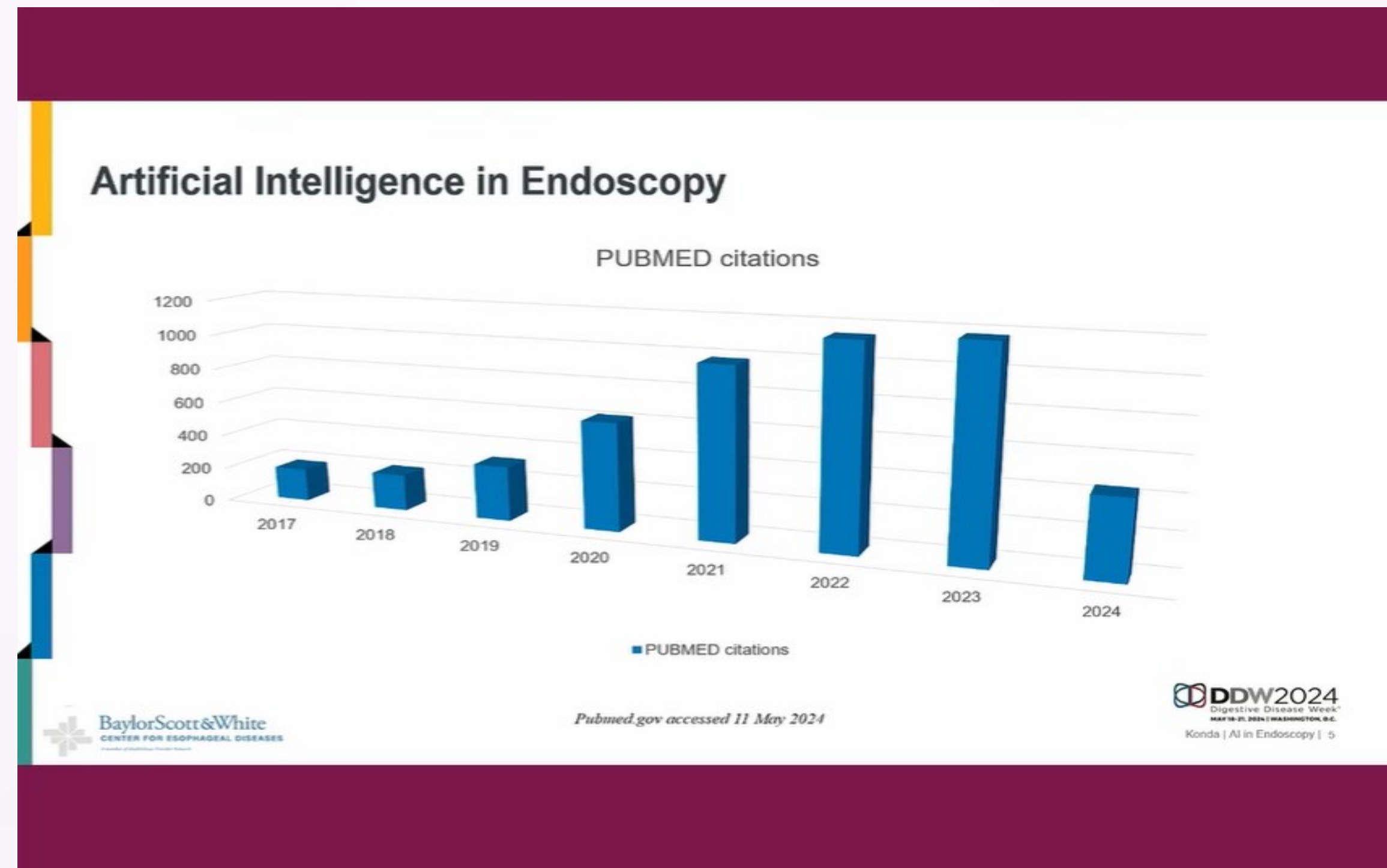
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- Ante todo lo que se ha dado en los últimos 5 años, no podemos ocultar el sol con las manos
- Hoy en día se introduce en el plan de formación de los becados de Gastroenterología
- Hay que aprender a conversar con el ChatGPT (Generative Pretrained Transformer) o lo que se llama LLM (Large Language Models), interactuar debidamente para obtener provecho
- Los mas alegres son los administradores... se abre un océano....

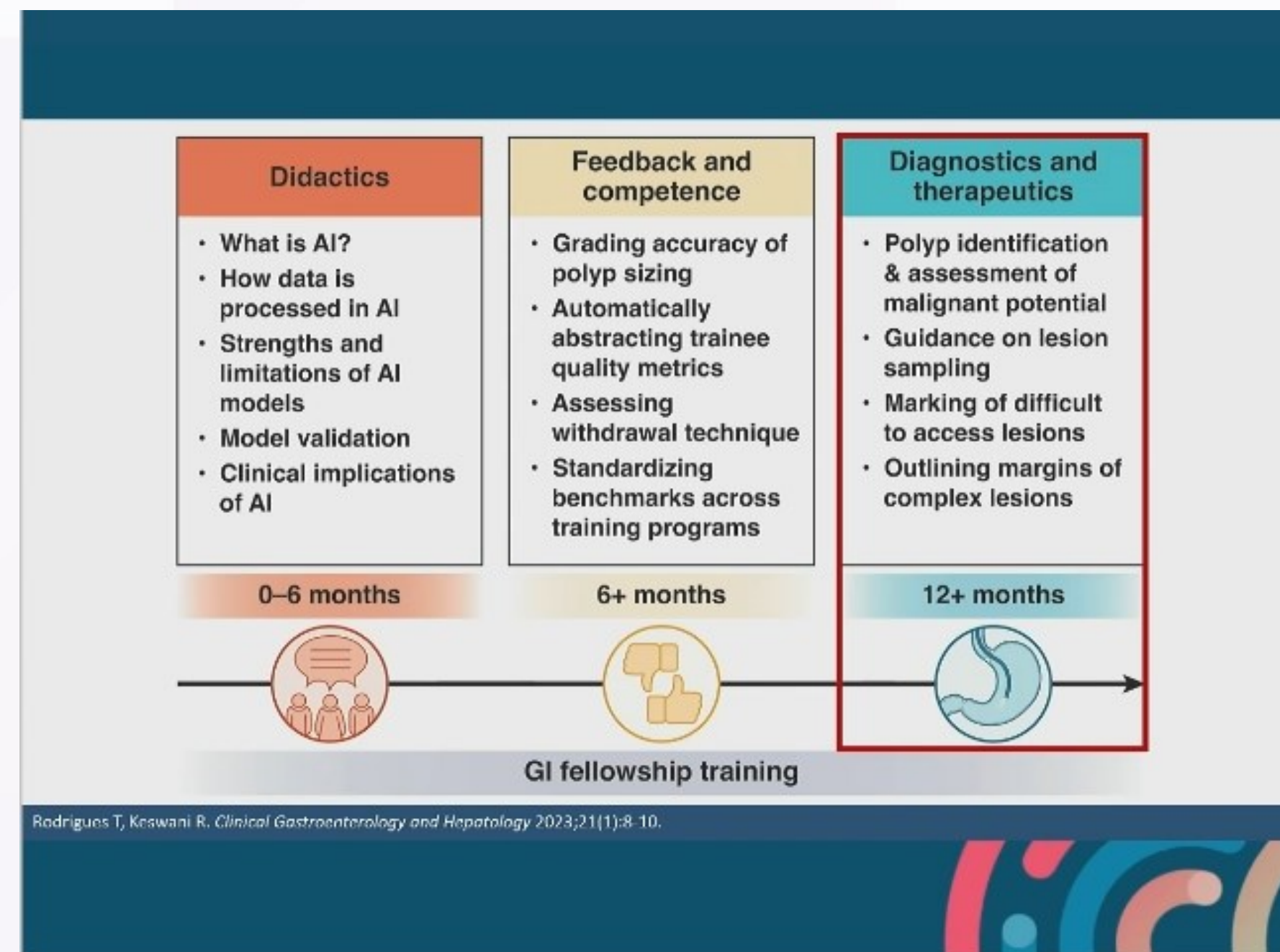
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AI IS THE NEW ELECTRICITY



“Just as electricity transformed almost everything 100 years ago, today I actually have a hard time thinking of an industry that I don’t think AI will transform in the next several years.”

— Andrew Ng 

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IA o AI , relevancia dentro de nuestra practica en la Gastroenterología

- ChatGPT– origen es Open AI, de Google, información hasta 2021
- Bing Chat de Microsoft , está conectada a la web, podría ser mas exacta
- Recomendación final... debemos usarla día a día, nuestros pacientes ya lo están haciendo
- En USA, se dan las agendas por este método, se dan indicaciones d preparación de procedimientos y se manejan los post procedimientos

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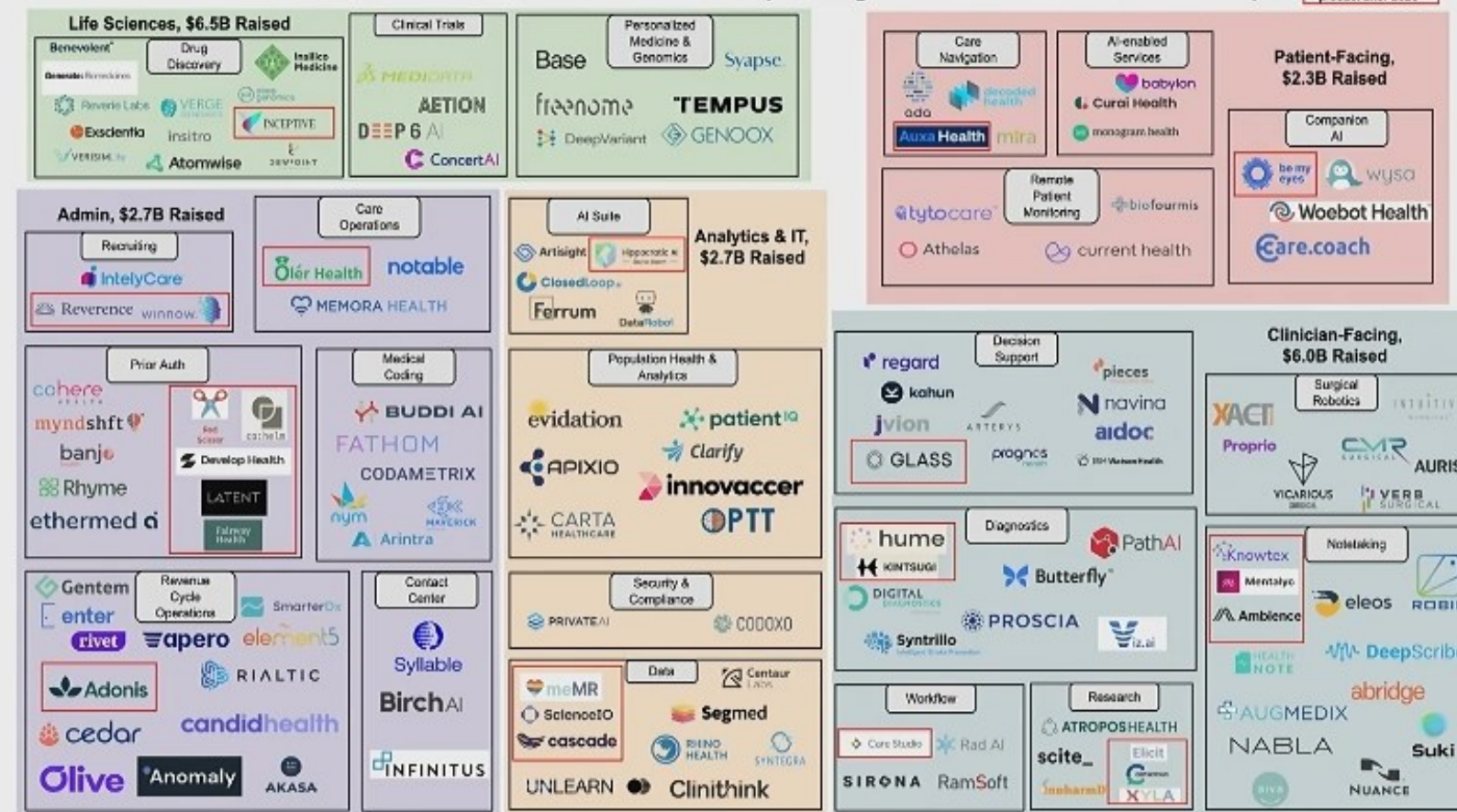
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El hoy y el mañana

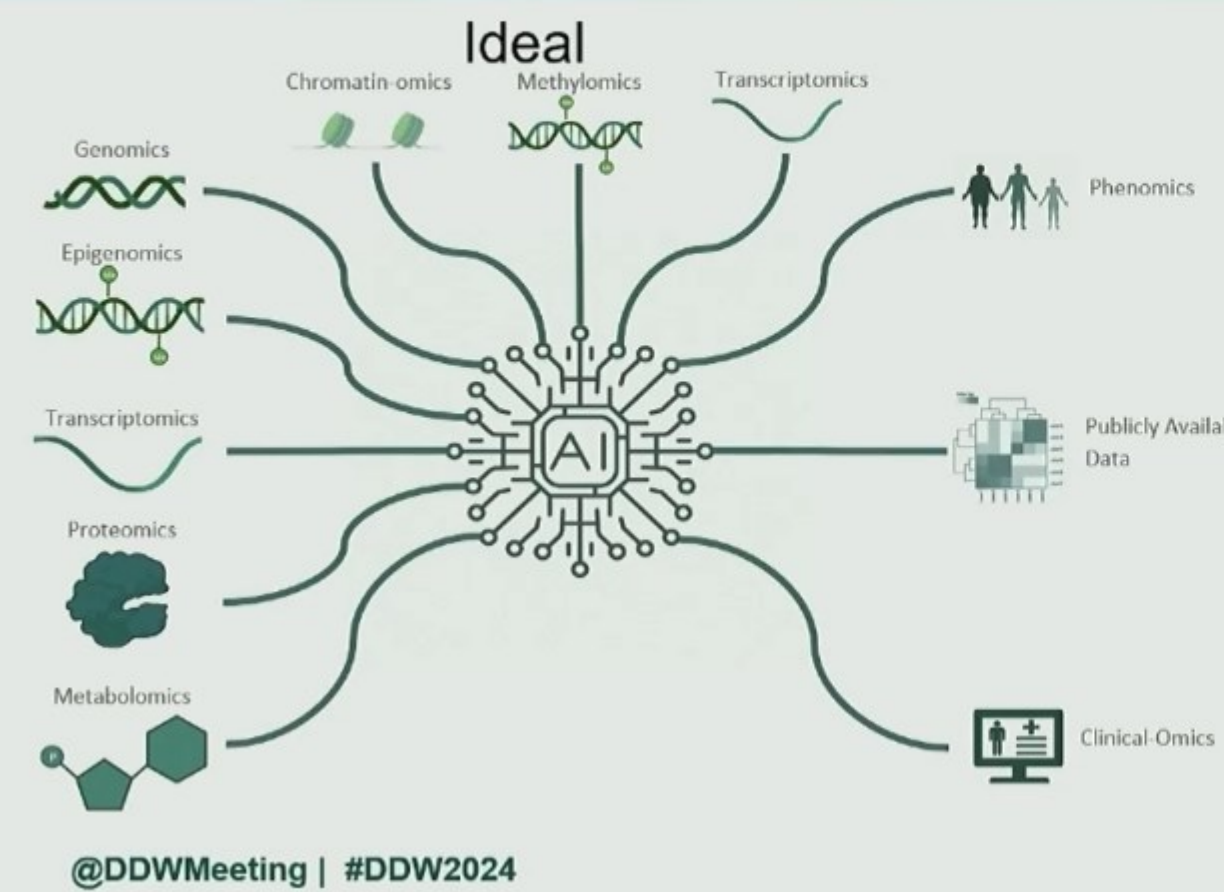
Health technology enthusiasm continues...

Where Generative AI Meets Healthcare: Updating The Healthcare AI Landscape



Credit: Justin Norden, Jon Wang, Ambar Bhattacharyya;
<https://aicheckup.substack.com/p/where-generative-ai-meets-healthcare>

THE FUTURE: MULTIMODAL LARGE LANGUAGE MODELS (MLLM)



Reality



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Endoscopia digestiva alta y colonoscopia, algunos tópicos

- Entre 1300 presentaciones , hay muchas dedicadas a este campo
- Llama la atención que la AI o IA, y su uso se impone en el día a día,. Como ayuda, no solo en lo diagnostico, sino en lo terapéutico, como un asistente, en una ESD o resección difícil, usando inclusive Robot tipo Davinci
- Por tanto se dividen por órganos digestivos
- Escogí 2 de Colon y una de Endoscopia alta

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- Una de colonoscopia es sobre el manejo de Divertículo colónico sangrante, donde se enfatiza cuál es su manejo correcto, desde el punto de vista terapéutico, sale muy bien evaluado la ligadura elástica en el colon izquierdo y en el derecho el manejo con clips hemostático
- Sin embargo, deben tenerse pasos endoscópicos , claves como aspiración del divertículo, con cup instalado , clips dentro del cup, uso de un clip como marca para poder llegar después con el ligador
- Uso de la energía bipolar solo si el vaso está en el cuello del divertículo

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Endoscopia digestiva alta y colonoscopia, algunos tópicos



EVERT DIVERTICULUM

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Diverticular Disease
When to Watch, When to Treat, and When to Cut

BOWEL PREP PER GUIDELINES

- 4-6 L polyethylene glycol (ACG Guidelines)
 - CURE Hemostasis Group used 6-8 L
 - Optional via NGT
 - Optional - 10mg IV Metoclopramide or 250 mg IV Erythromycin
- Unprepped colonoscopy or enema only NOT recommended.
 - Cannot see stigmata (visible vessel, adherent clots, red spots) w/o cleansed colon.
 - Asia – most R sided diverticular bleeding. West – L sided diverticular bleeding.

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DIRECT CLIPPING METHOD

Technically challenging:

- Clip opening span is greater than the diameter of the diverticulum.
- Diverticula is convex inward
- Tissue tolerance from trauma is low (perforation)

Tips:

- Use 11mm clip and clear cap.
- Invert TIC with suction
- Open clip inside the channel or cap. As you push out the clip, it will open incrementally in controlled fashion.

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STUDIES OF ENDOSCOPIC THERAPY FOR DEFINITIVE DIVERTICULAR HEMORRHAGE

Results from studies reporting rates of both early rebleeding (occurring within 30 days) and late rebleeding (occurring after 30 days) are listed.

Study	Design	Treatment modality	N	Hemostasis achieved	Early rebleeding (less than 30 days)	Late rebleeding (greater than 30 days)
Prakash et al. (1999) ²³	Retrospective	Epinephrine injection and/or thermal coagulation	5	5 (100%)	0	0
Jensen et al. (2000) ²	Prospective	Epinephrine injection and/or bipolar coagulation	10	10 (100%)	0	0
Yen et al. (2008) ²²	Retrospective	Hemodclip	11	11 (100%)	0	2 (18.2%)
Kaltenbach et al. (2012) ¹¹	Retrospective	Epinephrine injection and/or hemodclip	24	21 (88%)	0	5 (21%)
Ishii et al. (2012) ³³	Retrospective	Band ligation	31	27 (87%)	3 (10%)	0
Nakano et al. (2015) ³⁴	Retrospective	Hemodclip	39	39 (100%)	15 (38%)	7 (28%)
Nakano et al. (2015) ³⁴	Retrospective	Band ligation	61	61 (100%)	9 (15%)	12 (20%)
Jeroski (2018) ⁴	Prospective	Hemodclip or multipolar electrocoagulation	81	81 (100%)	4 (5%)	Not available
Nagata et al. (2018) ³¹	Prospective	Hemodclip	47	47 (100%)	10 (21%)	8 (17%)
Nagata et al. (2018) ³¹	Prospective	Band ligation	61	61 (100%)	6 (10%)	4 (7%)
Kaltenbach et al. (2020) ²⁶	Retrospective	OTSC	7	7 (100%)	0	0
Wongpongsuane et al. (2020) ²⁶	Prospective	Hemodclip or MPEC	74	74 (100%)	6 (8.1%)	23 (31.1%)

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TAKE HOME POINTS

- Endoscopic hemostasis is more durable than spontaneous hemostasis, so we should aim to identify and treat diverticular bleeding.
- Band Ligation appears superior to clipping.
- Direct clipping appears superior to indirect clipping, but may be technically difficult.
- Bipolar cautery should be reserved for vessels at the "neck"
- Prep is important and can maximize visualization of high-risk stigmata.
- Use a clear cap, generous water irrigation, and epinephrine/gel to maximize intraprocedural hemostasis.
- Consider repeating colonoscopy when the patient rebleeds.
- Prior to d/c, review indications for anti-thrombotics and stop NSAIDs if possible.

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AFTER R0 ER OF HIGH-RISK T1 EAC: INTERNATIONAL RETROSPECTIVE COHORT STUDY (SU1269)

•106 HR-T1 patients

•Treated with ER in 11 international centers between 2008-2019

Chan M.W.¹, Haidry R.^{2,3}, Norton B.^{2,3}, Di Pietro M.⁴, Hadjinicolaou A.V.⁴, Barret M.⁵, Doumbe-Mandengue P.⁵, Seewald S.⁶,

Bisschops R.⁷, Nafteux P.⁸, Bourke M.J.⁹, Gupta S.⁹,Mundre P.¹⁰, Lemmers A.¹¹, Vuckovic C.¹¹, Pech O.¹², Leclercq P.¹³, Coron E.¹⁴, Meijer S.L.¹⁵, Bergman J.J.G.H.M.¹, Pouw R.E

ENDOSCOPIC RESECTION WITH CLOSE SURVEILLANCE FOR T1B DISEASE

Roos Pouw, MD, PhD

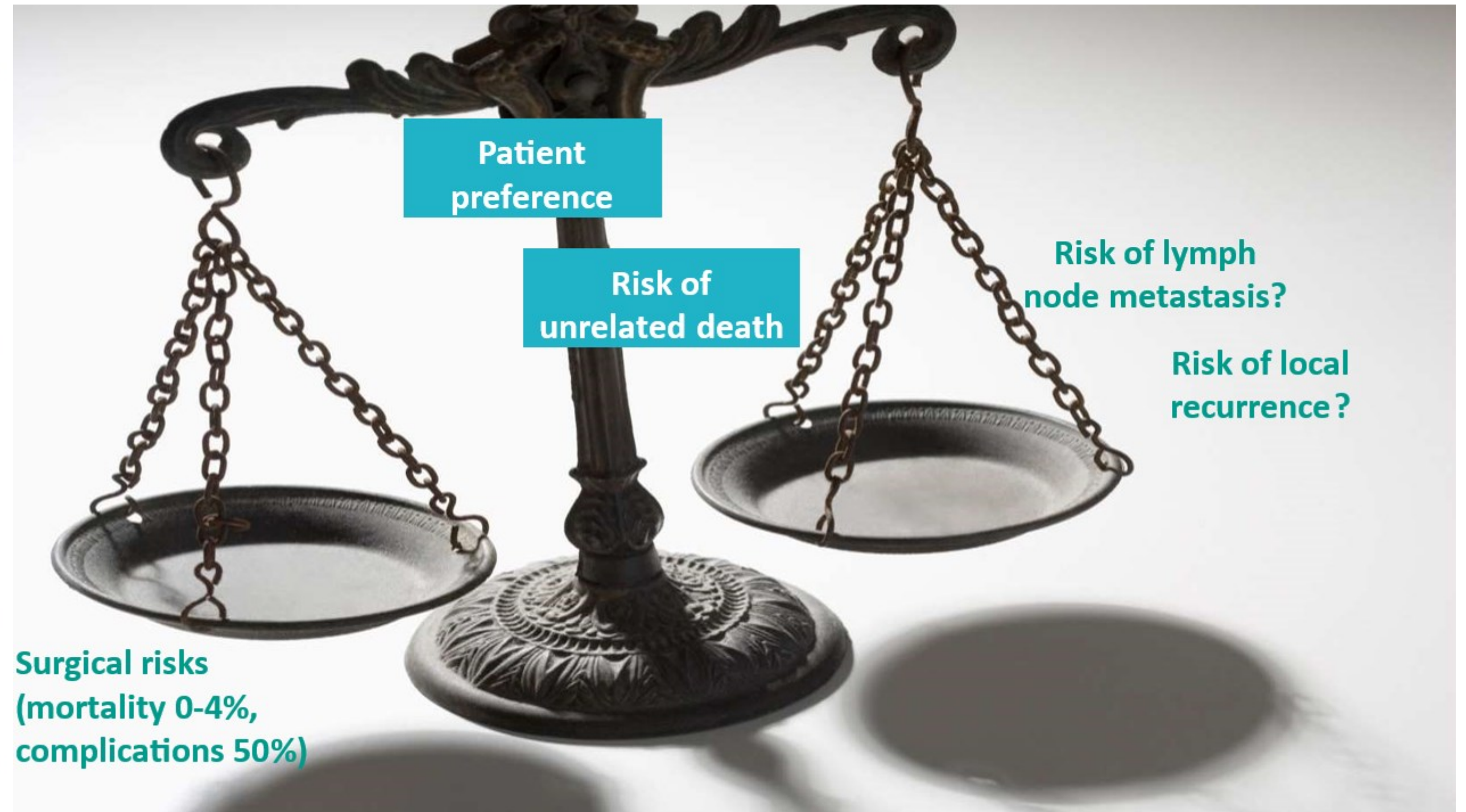
Gastroenterologist

Amsterdam UMC, The Netherlands

DISCLOSURES



• 43 HR-T1a	(m3 with LVI a/o poor differentiation)
• 27 LR-T1b	(sm1, no LVI, well/moderately differentiated)
• 36 HR-T1b	(sm2/3, a/o LVI, a/o poor differentiation)



ROLE OF SURGERY?

- Surgery used to be the standard curative treatment option for this indication, *before* EMR/ESD made it possible to remove T1b lesions radically
- But, just because it used to be the standard, does this mean surgery is the best treatment?
- mortality: 0-4%
- anastomotic leakage: \pm 10%
- anastomotic stricture: 10-43%
- long-term, possibly life-long, symptoms related to the digestive tract

Westerterp, *Virchows Arch* 2005 (PMID 15838647)
 Van Heijl, *Ann Surg* 2010 (PMID 20485137)
 Schandl, *J Cancer Surviv* 2022 (PMID 36219375)

NEW INSIGHTS

- Risk of N+ in T1b EAC appears to be much lower than reported (< 26%)
- The vast majority of patients in whom the tumor was already endoscopically removed, undergo *unnecessary* invasive surgery
- Surgery is not a guarantee for cure!

Scholvinck, *Surg Endosc* 2016 (PMID 27357927)
 Manner, *Am J Gastroenterol* 2008 (PMID 18785950)
 Alvarez Herrero, *Endoscopy* 2010 (20960392)



METHODS



18 international centers



> 141 patients



5 year follow-up



Outcomes

Primary:

1. 5-year disease-specific survival
2. Overall survival

Secondary:

1. Lymph node metastasis
2. Local recurrence not eligible to endoscopic therapy
3. Distant metastasis
4. Quality of life

PRELIMINARY RESULTS

103
High-risk T1b

Median FU
21 mo (IQR12-36)

3 Distant Met (3%)
 7 LNM (7%)
 5 Recurrence* (5%) } 4 Death** (4%)

7 Unrelated death (7%)
 7 Completed 5-yr FU

54
Low-risk T1b

Median FU
22 mo (IQR11-42)

0 Distant Met
 2 LNM (4%)
 2 Recurrence* (4%)

3 Unrelated death (6%)
 4 Completed 5-yr FU

*i.e. intraluminal tumor recurrent ineligible for re-ER
 ** 1 primary lung ca, 1 metastasized NET, 1 wished no further treatment



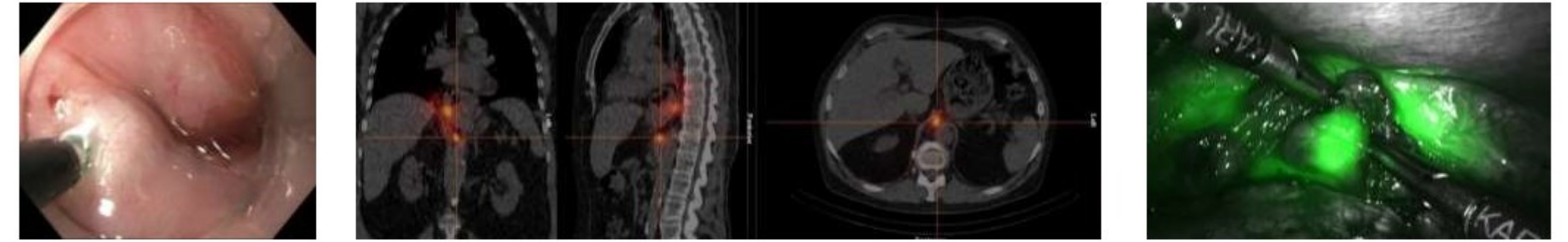
MALE, 58YO (ASA2)

- During follow-up: EUS-FNA suspicious lymph node at 24cm: **positive**
- PET-CT: no other signs of metastasis
- Policy MDT: **selective surgical LN resection**
- ⑦ endoscopic surveillance: 3-monthly EGD, EUS and PET-CT
- **no signs of further metastasis, now 30 months after the lymph node resection**
- Day before surgery:



SENTINEL NODE NAVIGATED SURGERY

- Injection of a tracer+indocyanin green around the ER-scar
- SPECT/CT



- Day of surgery:
- Identification with gammaprobe and near infra-read camera + resection of sentinel nodes

Frederiks, Ann Surg Onc 2023 (PMID: 36959491)

WHAT BOUNDARIES ARE GOING TO GET PUSHED?

- High-risk T1 EAC (sm-invasion, LV-invasion, poor differentiation):
 - Endoscopic follow-up in expert centers, in selected cases, instead of referring all patients for surgery
- After histological R1v resection of EAC:
 - Expert histology review
 - Endoscopic re-assessment first, and surgery only for those patients with residual neoplasia

CONCLUSIONS

As therapeutic modality for N+ disease?

- Indications for endoscopic and surgical treatment of T1b EAC are shifting due to technical advancements.
- For T1b EAC, strict endoscopic follow-up in selected patients, instead of surgery, appears feasible and safe.
- Better risk stratification will allow for more patient-tailored treatment, with additional treatment (surgery, chemotherapy, a/o radiotherapy) only if necessary.

Contenido a tratar

E-Posters

DUODENAL RECELLULARIZACION VIA ELECTROPORACION EN POORLY CONTROLLED TYPE 2 DIABETES

Presentation Number: 515

[View Presentation](#)

AuthorBlock: Adrian Sartoretto¹, David O'Neal⁴, Bronte A. Holt², Georgie Cameron², Rhys Vaughan³, Arti Rattan¹, Kostas Brooks¹, Ronen Ben Jacob¹, George Marinou¹, Eilif Ekinci³, Georgina Manos², Barham K. Abu Dayyeh⁵

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¹The BMI Clinic, Rosebery, New South Wales, Australia; ²St Vincent's Hospital Melbourne Pty Ltd, Fitzroy, Victoria, Australia; ³Austin Health, Heidelberg, Victoria, Australia; ⁴The University of Melbourne Department of Medicine and Radiology, Melbourne, Victoria, Australia; ⁵Mayo Clinic Minnesota, Rochester, Minnesota, United States;

Abstract Body
Background
 In the evolving treatment landscape for T2D, the duodenum, a key site for nutrient sensing and glucose metabolism regulation, presents a compelling target for new therapeutic approaches that seek to improve insulin sensitivity and glucose homeostasis. One promising technology involves the endoscopic application of pulsed electric fields to induce duodenal cell regeneration. Duodenal recellularization via electroporation (ReCET™, Endogenex Inc.) is a non-thermal, non-pharmacologic intervention that selectively targets mucosal and submucosal cells inducing irreversible electroporation of the duodenal surface with the intent of improving glucose metabolism. This first-in-human study evaluates the safety, feasibility and preliminary efficacy of ReCET in T2D patients inadequately controlled on glucose lowering medications.

Method
 This is an ongoing multicenter, open-label, treatment-only study. Key eligibility criteria are 18-70 years of age, history of T2D for ≤10 years, HbA1c of 7.5%-11.0%, BMI of 24 – 40 kg/m², C-peptide ≥ 333 pmol/l, and on 1-4 non-insulin GLMs. The primary endpoint is the incidence of device- or procedure-related serious adverse events (SAEs) at 12 wks. Secondary endpoints include technical success and changes in glycemic control at 24 wks. Patients are followed for 48 wks, with endoscopic follow up at 4 wks. The GLMs are maintained stable for

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 This is an ongoing multicenter, open-label, treatment-only study. Key eligibility criteria are 18-70 years of age, history of T2D for ≤10 years, HbA1c of 7.5%-11.0%, BMI of 24 – 40 kg/m², C-peptide ≥ 333 pmol/l, and on 1-4 non-insulin GLMs. The primary endpoint is the incidence of device- or procedure-related serious adverse events (SAEs) at 12 wks. Secondary endpoints include technical success and changes in glycemic control at 24 wks. Patients are followed for 48 wks, with endoscopic follow up at 4 wks. The GLMs are maintained stable for ≥12 wks before and ≥24 wks after the procedure.

Results
 Fifty-one patients have been enrolled and treated with two versions of catheters (Table 1). Technical success was 100%, with a mean treated length of 11.2 ± 2.7 cm, and median procedure time of 68 min (IQR 46 – 88). No device/procedure-related SAEs occurred. Incidence of device/procedure-related adverse events (AEs) were less frequent with the Gen 2 vs. Gen 1 device (10/21 vs 23/30, p<0.05). The most reported AEs were sore throat 49% (25/51) and transient diarrhea 22% (11/51). AEs were mild (76%) or moderate (24%) in severity. At 4 wks, the treated areas showed complete healing, were mostly unidentifiable endoscopically with no signs of stricture, ulceration, or other significant findings. Glycemic control was significantly improved post-procedure from baseline with a trend towards greater effectiveness with double Tx and with the Gen 2 device (Figure 1). Mean change in HbA1c was -1.7% at 24 wks from baseline with the Gen 2 device. Follow up in the

effectiveness with double Tx and with the Gen 2 device (Figure 1). Mean change in HbA1c was -1.7% at 24 wks from baseline with the Gen 2 device. Follow up in the Gen 2 treated group is ongoing. In patients treated with the Gen 1 device, improvement in glycemic effect was maintained at 48 wks in the double Tx group.

Conclusions
 Endoscopic therapy using the ReCET system is safe and has demonstrated a clinically meaningful improvement in glycemic control in T2D patients uncontrolled on medications in this feasibility study.

	Gen 1 Device		Gen 2 Device		Total
	Single Tx	Double Tx	Single Tx	Double Tx	
N	32	18	21	31	51
Age (yrs)	58.2 ± 9.1	58.3 ± 8.8	58.4 ± 5.2	52.8 ± 7.8	
Male (%)	66.7%	77.8%	76.2%	74.2%	
Time (min)	58.1 ± 4.8	52.2 ± 3.0	51.4 ± 3.1	51.4 ± 3.1	
Treated (%)	88 ± 9.9	87 ± 11.9	88 ± 9.9	88 ± 9.9	
FFPG (mmol/L)	91 ± 13	93 ± 13	93 ± 13	91 ± 13	
HOMA-IR	2.8 ± 1.3	3.3 ± 1.7	2.3 ± 1.4	2.7 ± 1.3	
T2D duration	11 ± 3.8	13 ± 2.8	14 ± 2.2	14 ± 2.3	
Background GLMs (n, %)					
Sulfonylurea	12 (38%)	14 (39%)	11 (52%)	49 (96%)	
Metformin	4 (13%)	5 (14%)	6 (29%)	15 (30%)	
GLP-1a	4 (13%)	11 (31%)	11 (52%)	26 (51%)	
GLP-1a	1 (3%)	1 (3%)	1 (5%)	3 (6%)	
Others	1 (3%)	1 (3%)	4 (19%)	14 (28%)	
% of Background GLMs					
1	1 (3%)	1 (3%)	1 (5%)	1 (2%)	
2	4 (13%)	4 (11%)	4 (19%)	16 (31%)	
3	1 (3%)	4 (11%)	4 (19%)	13 (26%)	
4	2 (6%)	1 (3%)	6 (29%)	9 (18%)	

Figure 1. Improvement in HbA1c (A) and FFPG (B) post-procedure. Mean baseline showed an average decrease response. (C) Mean Time-on-Range by CGM at baseline and at follow-up. (D) Mean Time-on-Range by CGM at baseline and at follow-up for the Gen 2 catheter (right) and Gen 1 catheter (left). Improvement in glycemic control was maintained at 48 wks in the double Tx group using the Gen 1 device.

Contenido a tratar

Mensaje a casa

- No dejemos de evaluar los ePosters, muestra la cresta de la ola, datos super valiosos
- La IA o AI, llego para quedarse, debemos implementarla en nuestros servicios, conversar con ingeniero
- Mirar como NEJM hace dos años un NEJM AI , y también BMJ AI
- Aprender el LLM, dialogar con los diferentes bot, se convierte en Pub Med si lo sabemos usar
- El Futuro llego, esta aquí..... disfrutémoloslo

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El Futuro es ahora no lo dejemos pasar

