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IUS 2025: What is new in IUS in CD?

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Disclosure

KB Gecse has received grants from Pfizer Inc, Celltrion, AbbVie and Galapagos; consultancy fees from AbbVie, Eli Lilly, Janssen Pharmaceuticals, Pfizer Inc., and Takeda and speaker's honoraria from Celltrion, Eli Lilly, Ferring, Janssen Pharmaceuticals, Pfizer Inc, Takeda and Tillotts

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Predictive Value of IUS in Early CD

Prospective population-based cohort of newly diagnosed adult Crohn's patients: 201 patients were followed up with symptoms, biochemical parameters, IUS and endoscopy.

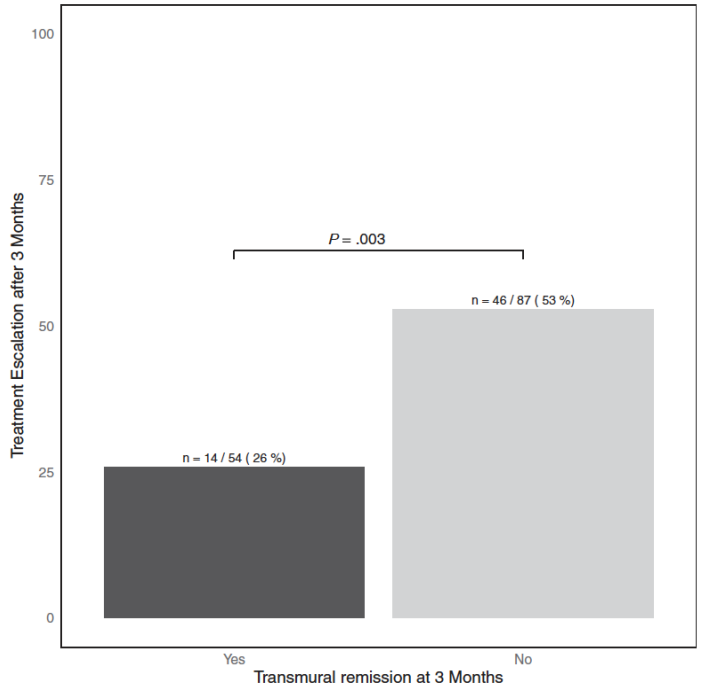

Figure 3. Treatment escalation after 3 months stratified by transmural remission.

TMR at 3M was achieved in 38% of patients

- associated with CSFR at all follow-ups within the first year
- **lower risk of treatment escalation during follow-up until 12 months** (26% vs 53%; P=0.003)

TMR at 12M was achieved in 41% of patients

IBUS-SAS in the terminal ileum at diagnosis was the **best predictor of ICR** during the first year, with an optimal **threshold of 63** (area under the curve [AUC], 0.92; sensitivity, 100%; specificity, 73%).

Madsen GR *et al. Clin Gastroenterol Hepatol* 2025

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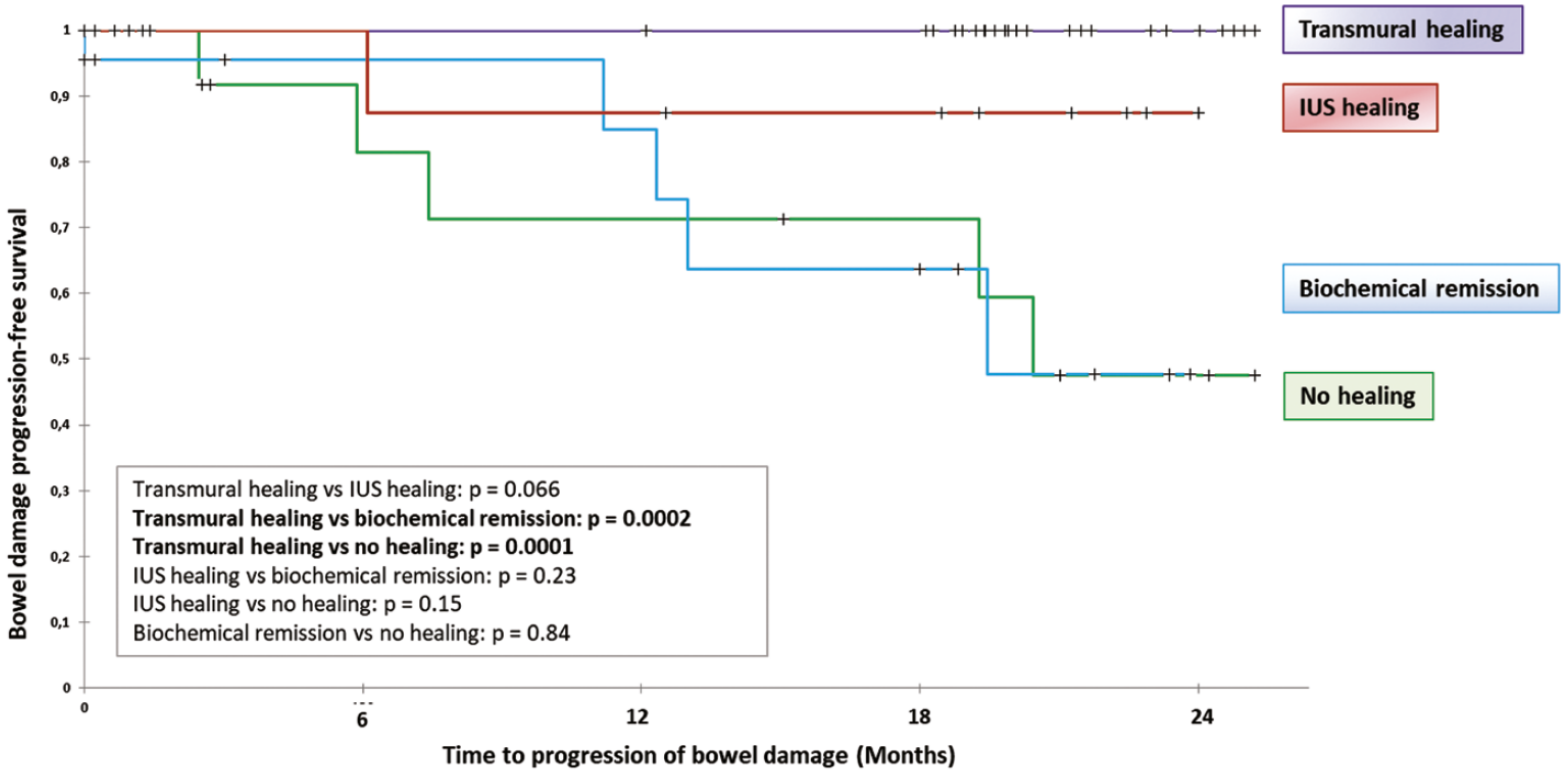
Transmural Healing is Associated with Reduced Bowel Damage

Prospective study of consecutive Crohn's patients with concomitant IUS and FCal testing: 112 patients were divided into one of four groups and were followed up.



Huet J *et al. Inflamm Bowel Dis* 2025

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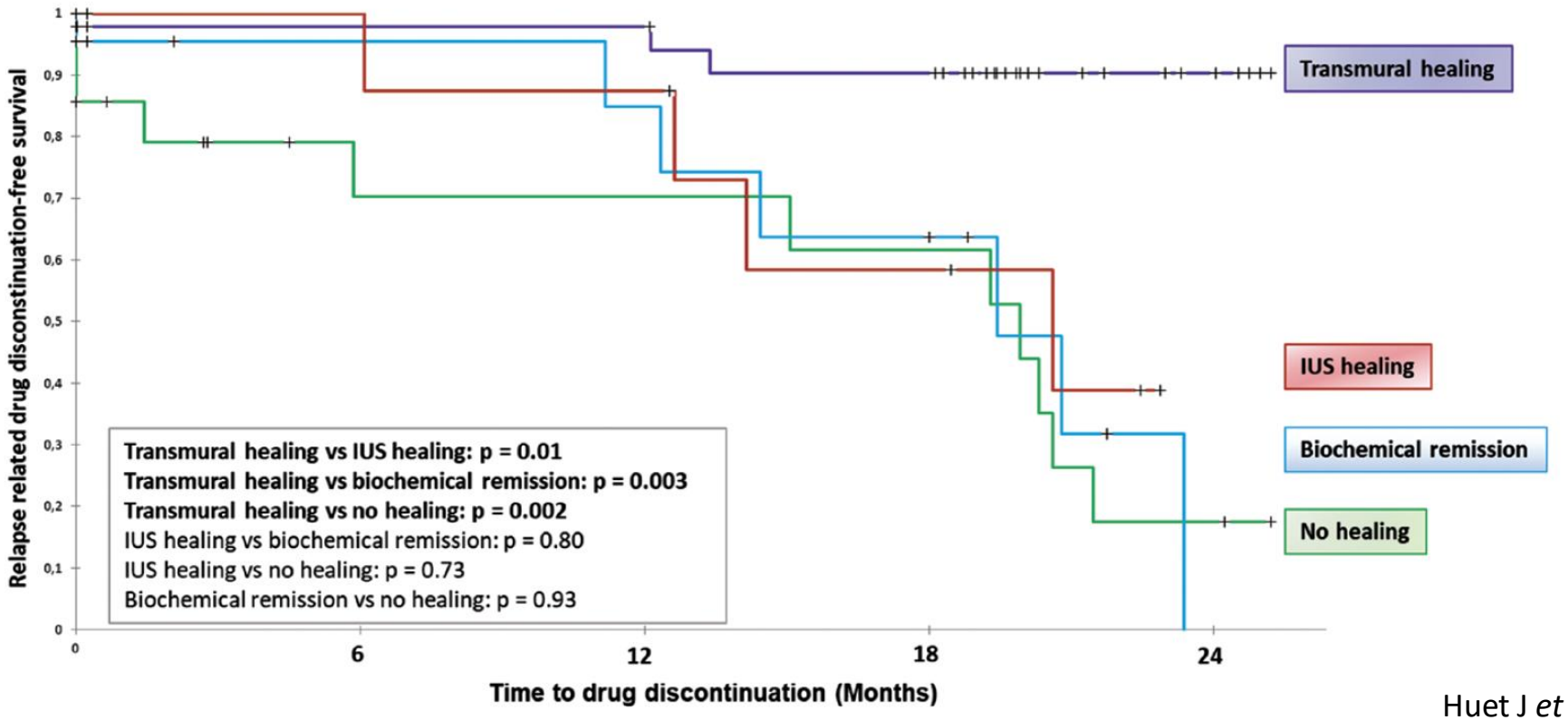
Transmural Healing is Associated with Reduced Rate of Drug Discontinuation

Prospective study of consecutive Crohn's patients with concomitant IUS and FCal testing: 112 patients were divided into one of four groups and were followed up.



Huet J *et al. Inflamm Bowel Dis* 2025

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Active IBD on IUS is associated with Adverse Pregnancy Outcomes: PICCOLO-X study

Prospective multicentric study: 377 participants (198 with Crohn's disease, 62% underwent IUS and 87% FCal) underwent clinical assessment and Fcal testing in all trimesters (T1-T3) and 6 weeks postpartum. IUS was performed in T1/T2.

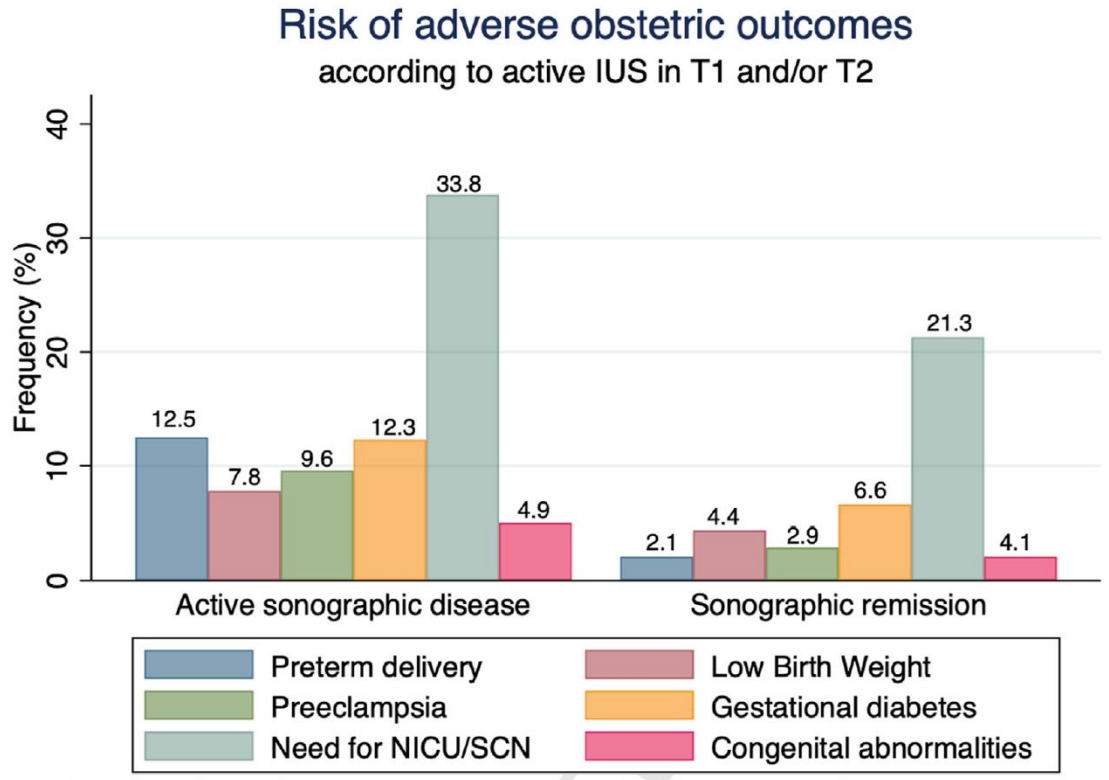

Figure 2. Risk of adverse obstetric outcomes in those with active disease on IUS vs those in remission.

BWT >6 mm in T2 was associated with

- **4-fold increased risk** of **prematurity** (RR: 4.01; 95% confidence interval [CI], 1.26–12.72; P=0.018)
- **2-fold increased risk of low-birth-weight** (RR: 2.19; 95% CI 1.01–4.72; P=0.046)

Hyperemia in T2 was associated with:

- **3-fold increase in preeclampsia risk** (RR, 3.46; 95% CI, 1.03–11.12; P=0.046)

Each 1-mm increase in BWT in T2 was estimated to

- increase the risk of **gestational diabetes** (RR, 1.08; 95% CI, 1.088–1.089; P < .001)

Prentice RE *et al. Gastroenterology* 2025

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Reliablity of IUS in CD

24 CD patients and 6 gastroenterologists participated in a 2-day workshop where each participant underwent 6 IUS scans in total, IUS disease activity were blindly assessed by the 6 local readers and 4 central readers.

IUS parameter	Segment	Local readers (n = 6)		Central readers (n = 4)	
		Inter-rater ICC (95% CI)	Intra-rater ICC (95% CI)	Inter-rater ICC (95% CI)	Intra-rater ICC (95% CI)
BWT, mm	Terminal ileum	0.67 (0.40–0.85)	0.75 (0.55–0.89)	0.94 (0.91–0.96)	0.97 (0.95–0.99)
	Ascending colon	0.76 (0.29–0.87)	0.76 (0.32–0.89)	0.84 (0.36–0.91)	0.88 (0.44–0.96)
	Traverse colon	0.46 (0.04–0.66)	0.50 (0.14–0.67)	0.82 (0.30–0.91)	0.89 (0.43–0.95)
	Descending colon	0.60 (0.17–0.72)	0.83 (0.55–0.92)	0.88 (0.54–0.95)	0.93 (0.67–0.97)
	Sigmoid colon	0.72 (0.30–0.82)	0.74 (0.37–0.85)	0.80 (0.57–0.88)	0.91 (0.79–0.96)
	Worst affected segment	0.62 (0.34–0.79)	0.75 (0.57–0.86)	0.82 (0.68–0.90)	0.89 (0.78–0.95)
BWS (normal or abnormal)	Terminal ileum	0.65 (0.33–0.85)	0.84 (0.71–0.95)	0.32 (0.10–0.53)	0.63 (0.46–0.77)
	Ascending colon	0.47 (0.00–0.84)	0.63 (0.12–0.93)	0.37 (0.00–0.62)	0.63 (0.13–0.78)
	Traverse colon	0.60 (0.00–0.92)	0.64 (0.09–0.94)	0.83 (0.00–1.00)	0.86 (0.00–1.00)
	Descending colon	0.72 (0.00–1.00)	0.79 (0.19–1.00)	0.50 (0.00–0.63)	0.58 (0.05–0.69)
	Sigmoid colon	0.47 (0.00–0.85)	0.58 (0.04–0.92)	0.20 (0.00–0.37)	0.42 (0.09–0.58)
	Worst affected segment	0.35 (0.11–0.52)	0.58 (0.42–0.73)	0.33 (0.16–0.49)	0.61 (0.48–0.71)
CDS (0 = none; 1 = short stretches; 2 = long stretches; 3 = reaching into the mesentary[a])	Terminal ileum	0.61 (0.35–0.74)	0.71 (0.53–0.83)	0.72 (0.56–0.81)	0.89 (0.81–0.94)
	Ascending colon	0.65 (0.00–0.79)	0.65 (0.22–0.81)	0.79 (0.44–0.87)	0.83 (0.48–0.90)
	Traverse colon	0.82 (0.00–0.87)	0.89 (0.00–0.94)	0.77 (0.00–0.85)	0.78 (0.01–0.85)
	Descending colon	0.55 (0.00–0.63)	0.66 (0.05–1.00)	0.73 (0.00–0.83)	0.80 (0.02–0.90)
	Sigmoid colon	0.75 (0.00–0.93)	0.87 (0.42–1.00)	0.68 (0.26–0.81)	0.74 (0.38–0.85)
	Worst affected segment	0.58 (0.33–0.71)	0.66 (0.51–0.80)	0.53 (0.30–0.68)	0.76 (0.62–0.86)
i-fat (absent or present)	Terminal ileum	0.53 (0.26–0.74)	0.66 (0.44–0.84)	0.62 (0.42–0.77)	0.78 (0.66–0.88)
	Ascending colon	0.68 (0.00–0.90)	0.69 (0.34–1.00)	0.65 (0.00–0.83)	0.70 (0.01–0.84)
	Traverse colon	0.61 (0.16–0.80)	0.61 (0.19–0.80)	0.71 (0.00–0.91)	0.72 (0.00–0.91)
	Descending colon	0.76 (0.00–1.00)	0.93 (0.49–1.00)	0.75 (0.31–0.95)	0.75 (0.35–0.95)
	Sigmoid colon	0.89 (0.59–1.00)	0.89 (0.59–1.00)	0.55 (0.14–0.77)	0.67 (0.28–0.85)
	Worst affected segment	0.46 (0.17–0.66)	0.59 (0.33–0.78)	0.46 (0.25–0.63)	0.65 (0.46–0.79)

- Five IUS parameters demonstrated at least moderate (ICC ‡0.41) inter- and intra-rater reliability (BWT, CDS, i-fat, submucosal prominence, and affected segment length)
- Reliability was generally better with central reading
- IUS parameters are most reliable when evaluated in the worst affected segment

Goodsall T et al. Clin Gastroenterol Hepatol 2024

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International Consensus on Defining and Monitoring Strictures in CD

Descriptor
Bowel wall thickness measured at the maximally thickened area (mean of 2 cross-sectional, 2 longitudinal) • BWT<3mm: absent • BWT 3.1-5mm: mild • BWT 5.1-8mm: moderate • BWT >8mm: severe
Luminal narrowing measured at the narrowest area • present if >50% relative to a normal adjacent bowel loop OR • <1cm luminal diameter
Pre-stenotic dilation • an unequivocal increase in luminal diameter relative to a normal adjacent bowel loop with BWT <3mm OR • >50% increase in bowel diameter (at the maximally dilated area) OR • bowel diameter of >2.5cm for naïve and anastomotic strictures

Lu C *et al. Lancet Gastroenterol Hepatol* 2024

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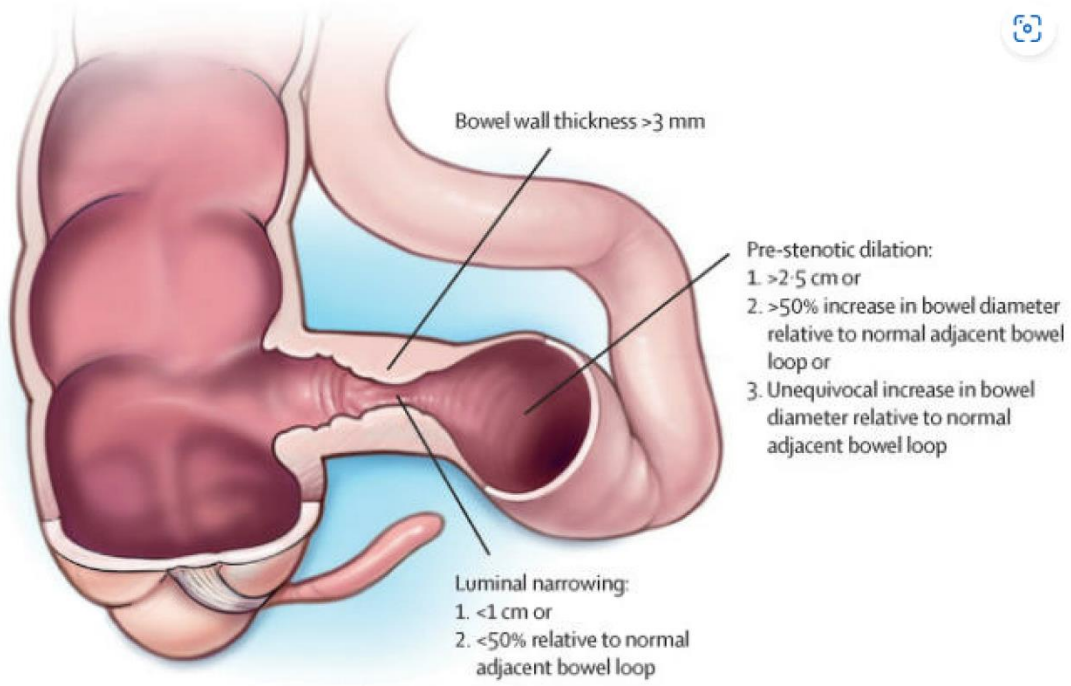
International Consensus on Defining and Monitoring Strictures in CD

Anti-inflammatory treatment

- > 25% **improvement** in **BWT**
- >50% **improvement in luminal narrowing**
- >25% **improvement** in prestenotic dilation or bowel diameter <2.5cm
- Improvement in the mLimberg score ≥1 point



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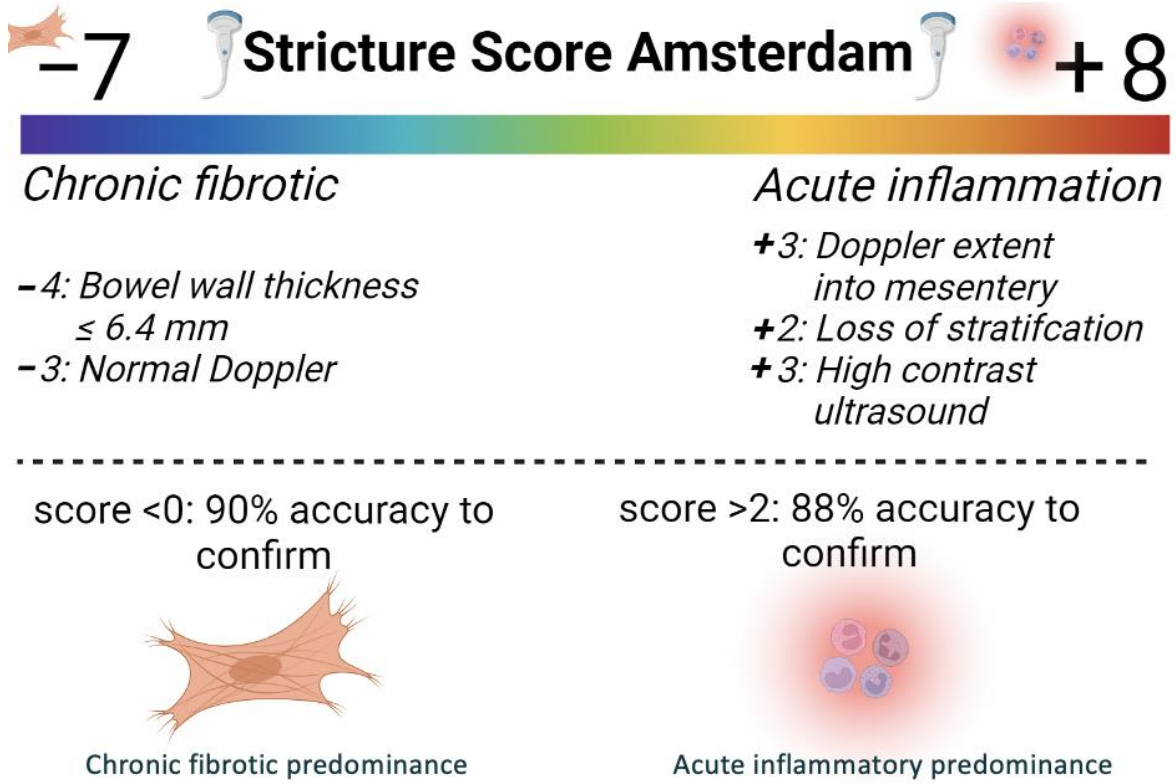
Chronic vs Inflammatory Strictures: Stricture Score Amsterdam

Inflammatory phenotype (IP)

- CDS extending into mesentery → OR: 7.00, [1.25-39.15], p=0.027
- Loss of BWS → OR: 7.86, [1.24-49.83], p=0.029
- Increased CEUS parameters with wash-in area under the curve being most accurate → ≥38.20 dB, OR: 20.00 [2.00-200.53], p=0.011

Chronic phenotype (CP)

- Lower BWT → (≤ 6.4 mm, OR: 52.63 [3.13-1000], p=0.006)
- Absent or single vessel CDS → OR: 7.00, [1.20-41.66], p=0.031)



De Voogd *et al. ECCO* 2025 P0235, submitted.

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Conclusions

- IUS at diagnosis predicts surgery during the first year
- Transmural healing (IUS and FCal < 100 µg/g) is associated with reduced bowel damage and relapse-related drug discontinuation
- Active IBD on IUS is associated with adverse pregnancy and neonatal outcomes
- IUS parameters demonstrated at least moderate inter- and intra-rater reliability
- BWT, CDS, BWS and CEUS aids characterisation of stricture composition