

COMPARING TRIPLE RECTAL ULTRASOUND IMAGING TECHNOLOGY IN PREDICTING RECTAL HISTOENDOSCOPIC REMISSION IN ULCERATIVE COLITIS (THE TRINITY STUDY): TRANS ABDOMINAL, TRANS-PERINEAL AND ENDOSCOPIC ULTRASOUND (NCT06717906)

D. Nageshwar Reddy

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In 142 ulcerative colitis patients, endoscopic ultrasound demonstrated superior accuracy for predicting rectal histoendoscopic activity (AUC 0.94–0.96) compared to trans-perineal ultrasound (AUC 0.73–0.78) and transabdominal ultrasound (AUC 0.63–0.67).

KEY POINTS

- Endoscopic ultrasound mucosal thickness >0.95 mm predicted endoscopic activity with AUC 0.96, sensitivity 98.6%, and specificity 87%, while EUS vascularity (Modified Limberg Score >1) predicted histologic remission with AUC 0.91, sensitivity 66.3%, and specificity 98.1%.
- Trans-perineal ultrasound showed moderate accuracy for endoscopic activity (total wall thickness >5.4 mm, AUC 0.73) and histologic activity (total wall thickness ≥ 6.1 mm, AUC 0.66), outperforming transabdominal ultrasound but substantially inferior to EUS.
- Milan Ultrasound Criteria scores correlated best between EUS and trans-perineal ultrasound ($r=0.425$, $p<0.001$), with EUS MUC ≥ 8 achieving AUC 0.94 for endoscopic remission and EUS MUC >7 achieving AUC 0.87 for histologic remission.
- Trans-perineal ultrasound is limited to lower rectal assessment (median visualised length 3.9 cm) and requires further validation for reproducibility and standardised cut-offs before integration into routine UC monitoring.

- Endoscopic remission (UCEIS ≤ 1) was observed in 49.3% of the 142 patients and histologic remission (Nancy Index ≤ 1) in 38.7%, with no significant BMI-based differences in ultrasound criteria scores.

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