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AIG Hospitals study identifies intestinal ultrasound as low-cost, low-carbon diagnostic tool for Inflammatory Bowel Disease

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Supporting wider use in clinically appropriate follow-up care for IBD patients



New research from Hyderabad-based AIG Hospitals makes a strong case for adopting diagnostic procedures that combine clinical suitability with lower costs and a smaller environmental footprint.

Led by Dr Hardik Rughwani, the EVERGREEN-IBD study, published in the prestigious journal “Alimentary Pharmacology & Therapeutics,” found that intestinal ultrasound had the lowest carbon emissions and hospital cost among the imaging tests assessed for inflammatory bowel disease (IBD) care. The findings support its wider adoption for follow-up monitoring where clinically appropriate.

IBD, which includes Crohn’s Disease (CD) and Ulcerative Colitis (UC), often requires repeated investigations over a lifetime. Each examination carries a financial and environmental cost through electricity consumption, equipment use, consumables and waste. With healthcare contributing an estimated 4.4–5% of global greenhouse gas emissions, choosing less resource-intensive modalities with appropriate clinical utility presents an opportunity to make healthcare more sustainable.

Conducted at AIG Hospitals during December 2025, the study compared the operational carbon footprint of laboratory tests, colonoscopy and enteroscopy, CT, MRI and intestinal ultrasound using a common assessment framework. Estimated emissions per procedure were 0.85 kg of carbon dioxide equivalent for intestinal ultrasound, compared with 3.87 kg for colonoscopy/enteroscopy, 5.82 kg for CT and 21.25 kg for MRI. Intestinal ultrasound’s estimated footprint was therefore approximately 96% lower than MRI’s per examination in this study.

The cost comparison reinforced the environmental findings. At AIG, the hospital cost of intestinal ultrasound was approximately half that of colonoscopy and one-sixth that of MR enterography, a specialised MRI examination of the bowel.

Dr D Nageshwar Reddy, Chairman, AIG Hospitals, said “The future of healthcare must bring together clinical excellence, affordability and environmental responsibility. For chronic diseases, patients need care over many years, the choices we make repeatedly can have a substantial cumulative impact. When a less resource-intensive investigation can reliably answer the clinical question, its use deserves serious consideration. Sustainability should be built into how we deliver care along with patient safety and clinical need.”

Intestinal ultrasound uses a probe moved over the abdomen to assess bowel inflammation. It involves no ionizing radiation and ordinarily requires neither sedation nor bowel-cleansing preparation. It can be performed during a clinic visit, providing information that helps clinicians assess disease activity and treatment response. Its role in IBD monitoring is supported by existing clinical guidance.

Dr Hardik Rughwani, lead author of the study and Consultant – Gastroenterologist, AIG Hospitals, said “IBD management continues for years, sometimes decades, making it important to examine both the cost and the resources used by each investigation. We combined hospital activity data with measurements and estimates of electricity, water, consumables and waste to compare these tests consistently. Intestinal ultrasound stood out for its low operational carbon footprint and lower hospital cost. The practical need is to expand access to appropriately performed ultrasound and integrate it into suitable follow-up assessments. We now need studies following individual patients to establish the savings achievable across their complete course of care.”