**STROBE Statement—The manuscript "A comparative study between bowel ultrasound and magnetic resonance enterography among Egyptian inflammatory bowel disease patients " was prepared by authors according to the following checklist of items for observational studies.**

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|  | **Item**  **No** | **Recommendation** | **Page**  **No** |
| **Title and abstract** | 1 | A comparative study between bowel ultrasound and magnetic resonance enterography among Egyptian inflammatory bowel disease patients | Title |
|  |  | The study was conducted on 40 patients with IBD. In comparison to MRE, bowel ultrasound is a useful, non-invasive, and feasible bedside imaging tool | Abstract |
| **Introduction** |  |  |  |
| Background/rationale | 2 | Up until now, no previous comparative studies between bowel ultrasound and MRE for Egyptian patients who suffered/are suffering from IBD, either ulcerative colitis or Crohn’s disease, have been published. | 1 |
| Objectives | 3 | The aim of this study was to compare the role of MRE and bowel ultrasound in diagnosis and follow-up of Egyptian IBD patients. | 1 |
| **Methods** |  |  |  |
| Study design | 4 | All patients reported a complete medical history, underwent thorough clinical examinations and laboratory investigations, including complete blood count, liver profile tests, renal profile tests, C-reactive protein, erythrocyte sedimentation rate, MRE, bowel ultrasound, and colonoscopy up to the terminal ileum with biopsies for histopathological examination. | 2 |
| Setting | 5 | Our study enrolled 40 patients who presented to our IBD center at Ain Shams University Hospital during the period from September 2017 to September 2018. | 2 |
| Participants | 6 | The study population included adolescents who were over 18 years old. All patients provided written informed consent before enrollment. Patients were excluded if they had severe or uncontrolled comorbidities, such as cardio-respiratory, neurological, metabolic, liver, kidney diseases, claustrophobia, cardiac pacemaker, or implanted metal objects that prohibited use of MRE. | 2 |
| Variables | 7 | Clinical activity score for Crohn's disease was assessed by The Crohn’s Disease Activity Index (CDAI). Clinical remission was determined if CDAI was < 150 points or no fistula drainage was found as assessed by the Fistula Drainage Assessment index. Ulcerative colitis activity was assessed using the Truelove and Witts classification | 2 |
| Data sources/ measurement | 8\* | Colonoscopies were performed with a videoscope system as a gold standard test | 2 |
| Bias | 9 | The study was approved by the medical ethics committee of Ain Shams University | 2 |
| Study size | 10 | The study sample size was approved by the medical ethics committee of Ain Shams University | 2 |
| Quantitative variables | 11 | Description of quantitative variables was expressed in the form of mean ± standard deviation (mean ± SD) or median and inter-quartile range (IQR). why | 4 |
| Statistical methods | 12 | Statistical analysis was performed using the SPSS software (22.0 version: SSPS Inc., Chicago, IL. USA). Description of quantitative variables was expressed in the form of mean ± standard deviation (mean ± SD) or median and inter-quartile range (IQR). A description of qualitative variables was expressed by frequency and percentage. Comparison of qualitative variables was carried out using the chi-square test. P < 0.05 was taken as significant. The sensitivity, specificity, overall correctness of prediction, and positive and negative predictive values were calculated. Correlations were calculated using Pearson’s correlation coefficient. The receiver operating characteristic (ROC) curves and areas under the ROC curves (AUROC) were applied to evaluate the prognostic values (specificity and sensitivity). | 4 |

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| **Results** | |  |  |  |  |
| Participants | | 13\* | Most of the patients were middle-age females who usually presented with abdominal pain and diarrhea. | | 5 |
| Descriptive  data | | 14\* | The result indicated that 14 (35%) of our patients had ulcerative colitis, and 26 (65%) had Crohn's disease while 34 (85%) of them were inactive. Four (4%) of studied patients had pancolitis, and 18 (45%) of the studied cases had ileal lesions. | | 5 |
| Outcome data | | 15\* | Bowel ultrasound appeared to be a good predictor for detection of ileal affection with sensitivity, specificity, and diagnostic accuracy of 93.8%, 50%, and 85%, respectively. With respect to the large bowel, bowel ultrasound detected large bowel affection with sensitivity, specificity, and accuracy of 37.5%, 91.7%, and 70%, respectively. Also, bowel ultrasound was a good predictor for detection of thickness of affected segment with sensitivity, specificity, and accuracy of 83.3%, 50%, and 60% respectively. Also, bowel ultrasound was a good predictor for detection of fistulous track with sensitivity, specificity, and accuracy of 85.7%, 100%, and 95%, respectively, while sensitivity, specificity, and accuracy of 100%, 94.4%, and 95%, respectively, for detection of stricture and proximal dilatation were found. Abscess was detected by bowel ultrasound in six patients with high specificity, sensitivity, and accuracy (100%). Also, bowel ultrasound showed that no statistically significant differences between bowel ultrasound and disease activity index, which indicates that bowel ultrasound can differentiate between remission and active disease. | | *5* |
| Main results | | 16 | No statistically significant difference among bowel ultrasound, MRE, and colonoscopy for detection of activity of the disease was noted, indicating that bowel ultrasound and MRE can differentiate between remission and active IBD. | | 5 |
| Other analyses | | 17 | Comparison between clinical symptoms and imaging modalities bowel ultrasound and MRE revealed that bleeding per rectum is statistically significant in patients with strictures and proximal dilatation during assessment by bowel ultrasound, while diarrhea is statistically significant to the extent of the lesions when assessed by MRE. | | 6 |
| **Discussion** | |  |  | |  |
| Key results | | 18 | Our results showed similar sensitivity for detection of ileal IBD. Regarding colonic IBD, our results showed lower sensitivity than observed in this previous study (81.8%) but with similar specificity (95.3%). A bowel wall thickness cutoff value of 3 mm in our study showed sensitivity (83.3%), specificity (50%), and accuracy (60%) in comparison to other studies. Mesenteric lymph nodes detected by bowel ultrasound in our study were non-sensitive and non-specific . Our study agreed with different trials in which it was shown that detection rate of fistulas, depending on their localization, had sensitivity between 67% and 82% and specificity between 90% and 100% . Stricture in our study as detected by bowel ultrasound showed sensitivity, specificity, and accuracy (100%, 94.4%, and 95%, respectively). The sensitivity for detecting abscesses in different studies varied between 80% and 100%, and specificity varied between 92% and 94%, which were similar results to ours. | | 7 |
| Limitations | | 19 | Limitations of our study were the relatively small number of included patients, and comparative assessments of clinical decisions with and without bowel ultrasound were not available. | | 8 |
| Interpretation | | 20 | In comparison to MRE and colonoscopy, bowel ultrasound is a useful non-invasive and feasible bedside imaging tool for the detection of inflammation, complications, as screening tool and follow-up of IBD patients when performed by the attending physician. | | 8 |
| Generalisability | | 21 | This indicates that there is no clear gold standard for IBD diagnosis and any types of diagnostic modality, including endoscopy, MRE or bowel ultrasound could be used besides clinical history and biomarkers for diagnosis of IBD as agreed with previous studies | | 8 |
|  | **Other information** |  | | | |
| Funding | | 22 |  | No funding |  |

\*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

**Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at [http://www.plosmedicine.org/,](http://www.plosmedicine.org/) Annals of Internal Medicine at [http://www.annals.org/,](http://www.annals.org/) and Epidemiology at [http://www.epidem.com/).](http://www.epidem.com/)) Information on the STROBE Initiative is available at [www.strobe-statement.org.](http://www.strobe-statement.org/)