Will the history and physical examination help establish that irritable bowel syndrome is causing this patient's lower gastrointestinal tract symptoms?

CRD summary
This review assessed the ability of components of clinical history and physical examination (alone or in combination) to predict a diagnosis of irritable bowel syndrome (IBS) without full investigation of the lower GI tract. The authors' conclusion that individual symptoms and existing diagnostic criteria have only moderate accuracy was a reasonable interpretation of the limited data available.

Authors' objectives
To determine the accuracy of components of clinical history and physical examination, alone or in combination, in diagnosing IBS.

Searching
MEDLINE (1950 to June 2008) and EMBASE (1980 to June 2008) were searched; search terms were reported. The bibliographies of identified studies were searched for additional articles.

Study selection
Prospective cross-sectional studies of 50 or more unselected adult participants (more than 95% over 16 years) who were referred for investigation of lower gastrointestinal (GI) tract symptoms were eligible for inclusion. Included participants were required to undergo investigation of the lower GI tract (colonoscopy, barium enema or computed tomographic colonography) with the diagnosis recorded. All included studies defined organic lower GI tract disease as colorectal carcinoma, inflammatory bowel disease, microscopic colitis, diverticular disease or colorectal adenoma; all other findings were classified as functional IBS. All but one of the included studies were secondary-care based. Studies were independently assessed for inclusion by two reviewers; disagreements were resolved by consensus.

Assessment of study quality
Study validity was assessed according to whether assessors were blinded to the results of other tests, cases were consecutive and sample size was 'adequate' (200 or more participants): level 1 studies were independent blind comparisons of test(s) with a valid reference standard in 200 or more participants; level 2 studies were similar to level 1, but with fewer than 200 participants; level 3 studies were independent blind comparisons, but enrolled non-consecutive patients; level 4 studies used a non-independent comparison of the test(s) with a valid reference standard in a convenience sample of patients. Data were extracted onto pre-designed forms by one reviewer and checked by a second.

Data extraction
Prevalence of IBS, symptom frequency, sensitivity, specificity and positive and negative likelihood ratios (LRs) were extracted or calculated for each included study. Where models or combinations of tests were used to generate diagnostic scores, data were extracted for the threshold that gave the highest diagnostic odds ratio (DOR).

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Methods of synthesis
Pooled estimates of sensitivity, specificity and positive and negative likelihood ratios with 95% confidence intervals (CIs) were derived using a random effects model. Separate pooled estimates were presented for individual symptoms and for a number of diagnostic scoring systems, where these were evaluated by three or more studies. Heterogeneity was assessed using the $X^2$ and I$^2$ statistics.

Results of the review
Ten studies (total of 2,355 participants) were included in the review; the prevalence of IBS in included studies ranged
from 21% to 78%. Five of the 10 studies were graded as level one. Assessors were blinded in all but one study.

Individual symptoms:

Accuracy data were available for seven individual symptoms: lower abdominal pain; passage of mucus; feeling of incomplete evacuation; loose stools at the start of abdominal pain; more frequent stools at the start of abdominal pain; abdominal pain relieved by defecation; patient-reported abdominal distension. No individual symptom reported good discriminatory power: abdominal pain had a high sensitivity and low specificity; the other three abdominal-pain-related symptoms had higher specificity with reduced sensitivity (full results reported).

Combinations of symptoms:

The presence of three or more of the Manning criteria (see Other Publications of Related Interest, 1.) based on three studies with a total of 574 participants gave a pooled positive LR of 2.9 (95% CI: 1.3, 6.4). Those with less than three criteria present gave a pooled negative LR of 0.29 (95% CI: 0.12, 0.71). Excluding the original validation study from the analysis made no significant difference to the results. Based on one study of 602 participants the Rome I criteria had a positive LR of 4.8 (95% CI: 3.6, 6.5) and a negative LR of 0.34 (95% CI: 0.29, 0.41). Four studies with a total of 1,171 participants evaluated the Kruis model (see Other Publications of Related Interest, 2.), which includes a combination of symptoms, physical findings and laboratory tests. For a Kruis score of greater than 44 the pooled positive LR was 8.6 (95% CI: 2.9, 26.0) with a corresponding negative LR of 0.26 (95% CI: 0.17, 0.41). Again, excluding the original validation study from the analysis made no significant difference to the results.

Authors’ conclusions

Individual symptoms and diagnostic scoring systems have limited accuracy for diagnosing IBS in patients with lower GI symptoms. Future research should focus on validation existing diagnostic criteria and developing new tools for predicting IBS without investigation of the lower GI tract.

CRD commentary

The review addressed a clearly stated objective by applying defined and appropriate inclusion criteria. Literature searching was limited to two bibliographic databases and reference scanning; it is possible that some relevant data were missed. Measures taken during the review process to minimise the potential for error and/or bias and study details, including the results of quality assessment, were reported. Available data were limited (there were no studies of Rome II or Rome III criteria) and heterogeneous, making the value of pooled estimates questionable; if more data were available a bivariate sROC model would represent a better approach to pooling studies and investigating sources of heterogeneity. The authors acknowledged that data were limited to patients referred for investigations of the GI tract, who are unlikely to be representative of patients presenting in primary care. As a high prevalence of disease in the studied population would be likely to result in an overestimate of positive LR, the authors’ conclusions that individual symptoms and existing diagnostic criteria had limited accuracy for the diagnosis of IBS were reasonable.

Implications of the review for practice and research

Practice: The authors did not state any implications for practice.

Research: The authors stated that existing diagnostic criteria should be validated in high quality studies and that more accurate tools for diagnosing IBS without investigation should be developed.

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Other publications of related interest
Bursey F. Review: combinations of clinical findings had moderate sensitivity and specificity for diagnosing the irritable bowel syndrome. APC Journal Club 2009:150:13

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.