

IBD Prognostic Panel

PREDICTIVE UTILITY IN CROHN DISEASE

Clinical Background

- Crohn disease (CD) and ulcerative colitis (UC) are the two main forms of inflammatory bowel disease (IBD), a chronic gastrointestinal disorder.
- CD typically involves the terminal ileum but may affect any part of the gastrointestinal tract. Lesions are discontinuous and transmural. Stenosis may occur at lesion sites.
- UC is restricted to the colon and rectum. It is characterized by continuous lesions restricted to the mucosa.
- In some cases of IBD of the colon, a definite diagnosis of CD or UC cannot be made without colectomy. This condition is referred to as indeterminate colitis.
- The course and management of CD differs considerably from that of UC. Therefore, diagnostic and prognostic information is critical for therapeutic decision making.

Epidemiology

Incidence of CD is 7–8:100,000, while that for UC is 11:100,000. There are two incidence peaks, the most common in the 15–30 year age group and a smaller second peak in individuals above the age of 60.

Pathophysiology and Immunology

- Anti-*Saccharomyces cerevisiae* IgG antibody (gASCA) and anti-mannobioside carbohydrate IgG antibody (AMCA) are directed against mannan antigens, which are found in the cell wall of the yeast *S. cerevisiae*. Anti-laminaribioside carbohydrate IgG antibody (ALCA), anti-chitobioside carbohydrate IgA antibody (ACCA), and gASCA antibodies also appear to be directed against glycans found in the cell wall of the pathogenic fungus *C. albicans*.
- Antibodies are associated with CD susceptibility mutations in pattern-recognition receptor genes, such as the nucleotide oligomerization domain 2 (*NOD2*) and certain Toll-like receptors (TLRs).
- Mechanism of pathogenesis is unknown; elevated levels may be the result of the enhanced permeability of the epithelial layer of the gastrointestinal tract.
- The presence of two or more of these antibodies has been associated with a more aggressive form of CD.

Indications for Ordering

- In patients for whom CD has been confirmed, this IBD prognostic panel may be clinically useful in predicting disease severity.

- A diagnosis of IBD requires medical evaluation, which should include patient's history and physical examination, imaging studies, and histology. Serological studies may serve as adjunct diagnostic and prognostic tools.

Interpretation

CD patients with two or more IBDX-positive serologies are more likely to develop aggressive CD than patients who are IBDX negative.

Limitations

- Test results alone are not diagnostic or prognostic. Results should be used in conjunction with other clinical studies, such as endoscopy, radiology, and/or histology.
- Negative results do not rule out aggressive CD.
- Positive results may indicate an aggressive course of CD.

Methodology

IBDX antibodies are detected and measured semi-quantitatively using standard ELISA techniques.

Related Tests

- Inflammatory Bowel Disease Differentiation Profile (0050567)
- Outer Membrane Protein (OMP) IgA (0051384)

References

1. Ferrante M, et al. New serological markers in inflammatory bowel disease are associated with complicated disease behaviour. *Gut* 2007;56:1394–1403.
2. Papp M, et al. New serological markers for inflammatory bowel disease are associated with earlier age at onset, complicated disease behavior, risk for surgery, and NOD2/CARD15 genotype in a Hungarian IBD cohort. *Am J Gastroenterol* 2008;103:665–81.
3. Rieder F, et al. The novel anti-glycan antibodies Anti-L and Anti-C in conjunction with ALCA, ACCA, gASCA and AMCA predict early development of fistulae, stenoses and surgery in patients with Crohn's disease: a prospective analysis. *Gastroenterology* 2008;134:Supl. 1, A-53.
4. Henckaerts L, et al. Mutations in pattern recognition receptor genes modulate seroreactivity to microbial antigens in patients with inflammatory bowel disease. *Gut* 2007;56:1536–42.

Test Information

2001613 Crohn Disease Prognostic Panel

For specific collection, transport, and testing information, refer to the ARUP Web site at www.aruplab.com.

For information on test selection, ordering, and interpretation, refer to ARUP Consult® at www.arupconsult.com.