

Anti-Endomysial Antibody (EMA) IgG by Indirect Immunofluorescence Antibody (IFA) Assay

AIDS IN THE DIAGNOSIS OF CELIAC DISEASE (CD) AND DERMATITIS HERPETIFORMIS (DH)

Test Highlights

EMA IgG test by IFA is a semi-quantitative assay for the detection of endomysial antibodies of the IgG class in human serum.

Clinical Background

- Serologic tests for celiac disease (CD) and dermatitis herpetiformis (DH) include endomysial antibodies (EMA), anti-tissue transglutaminase (tTG), and anti-deamidated gliadin peptide (DGP) IgA and IgG assays.
- In individuals with IgA deficiency, the use of IgG assays is recommended for ruling out false-negative results.
- Anti-tTG IgG antibody is currently recommended as a first-line screening serologic test for identifying IgA-deficient individuals who may have CD for biopsy.
- EMA IgG may be of additional diagnostic value in individuals who test negative for anti-tTG IgG.
- EMA IgG testing may also be useful in monitoring adherence to a gluten-free diet (GFD) in IgA-deficient patients with biopsy confirmed CD.

Indications for Ordering

- Clinically suspected CD or DH as a result of the following conditions:
 - Chronic diarrhea without infectious etiology.
 - Family history of celiac disease.
 - Early-onset osteoporosis.
 - Autoimmune disease associated with celiac disease (diabetes mellitus type 1, autoimmune thyroiditis, etc.).
 - Non-autoimmune conditions associated with celiac disease (Down syndrome, Turner syndrome, etc.).
 - Chronic pruritic dermatitis/skin lesions in patient with or without known celiac disease.
- Patient has IgA deficiency or presentation is atypical.

Interpretation

- A positive result alone is not diagnostic; biopsy is recommended for a diagnosis of CD.
- EMA IgG titers may not reliably predict adherence to GFD.
- For diagnosis of DH, a positive result should be followed by a perilesional skin biopsy for DIF.

- Results should be interpreted alongside pemphigoid and pemphigus panel tests or epithelial skin antibody tests to differentiate DH from other immunobullous skin diseases.

Limitations

- In some cases, EMA-positive sera may show the prozone phenomenon, in which antibodies are either very weak or negative at the initial screening dilution. If this occurs, screen sera at higher dilutions.
- Some patients' sera contain anti-smooth muscle antibodies (ASMA), which are reactive with the tissue and interfere with the detection of EMA IgG. In such cases, sera should be further tested at higher dilutions.
- EMA IgG by IFA may be negative in early disease or in patients on a gluten-free diet.
- Test results should be evaluated along with the patient's total clinical history for diagnosis.

Methodology

The presence of EMA IgG in serum is detected by IFA using monkey esophageal tissue.

Related Test

A positive EMA IgG test should be followed by biopsy to confirm diagnosis.

References

1. Craig D, Robins G, Howdle PD. Advances in celiac disease. *Curr Opin Gastroenterol* 2007;23 (2):142–8.
2. McGowan KE, Lyon ME, Butzner JD. Celiac disease and IgA deficiency: complications of serological testing approaches encountered in the clinic. *Clin Chem* 2008;54(7):1203–9.
3. Plebani M, Basso D. Diagnostic testing for celiac disease. *JAMA* 2010;304(6):639–40.
4. Kumar V, et al. Tissue transglutaminase and endomysial antibodies—diagnostic markers of gluten-sensitive enteropathy in dermatitis herpetiformis. *Clin Immunol* 2001;98(3):378–82.

Test Information

2005501

Endomysial Antibody, IgG

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

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

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