When to Order Rheumatologic Labs

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Objectives

At the end of this presentation, the participate and will be able to:

1. Identify when to order and how to interpret acute phase reactant tests.
2. Identify when to order and how to interpret tests for rheumatoid arthritis.
3. Identify when to order and how to interpret the HLA-B27 test.
4. Identify when to order and how to interpret tests for connective tissue diseases.

In the clinical practice of medicine, laboratory tests are most often useful for: 1. Establishing a **diagnosis** (positive throat culture for Streptococcus); 2. Gauging **prognosis** (lymph node biopsy in a patient with breast cancer); or 3. Assessment of **disease activity** (pulmonary function tests in a patient with chronic lung disease). Unfortunately, in rheumatology, most laboratory tests provide diagnostic information that is primarily supportive, prognostic information that is marginal, and inconsistent information concerning disease activity. It should always be remembered that laboratory tests in rheumatology generally provide information that is supplemental to that obtained by a careful medical history and physical examination.

Some of the more commonly used tests by rheumatologists include:

Acute phase reactants. Serum levels of a number of plasma proteins increase (and a few decrease) during the acute phase response. C-reactive protein (CRP) is the most important of these clinically, responding very rapidly and dramatically in such situations. Other markers of the acute phase response, such as ESR and platelet count are less helpful. None of these markers has diagnostic or prognostic value.

Tests for rheumatoid arthritis. Antibodies to citrullinated proteins (ACPA) are almost as sensitive for the diagnosis of rheumatoid arthritis as the time-honored rheumatoid factor, but more specific, and likely more closely associated with disease prognosis.

The HLA-B27 test. This genetic marker is only diagnostically helpful in patients with inflammatory back pain.

Antinuclear antibodies. These are the hallmark for the diagnosis of lupus. The time-honored Indirect immunofluorescence (IF) test is now being replaced by multiplex enzyme immunoassays (MIA), which are less time-consuming and expensive and permit detection of multiple auto-antibodies. Diagnostic specificity is improved (~90% MIA vs ~60% IF), but sensitivity is diminished (67% MIA vs 90% IF), thus increasing the importance of clinical findings and other laboratory tests for making diagnostic decisions. It is important to remember that ANA can be present years prior to clinical diagnosis of lupus. Among the various antinuclear antibody specificities, those directed against dsDNA are most closely associated with lupus and most useful for prognosis and for follow-up of disease activity. Other anti-nuclear antibody specificities have modest associations with different disease diagnoses, and no utility for disease follow-up.

Antiphospholipid antibodies. Tests for lupus anticoagulant, anticardiolipin antibodies, and anti-beta-2 glycoprotein 1 antibodies are included among the diagnostic classification criteria for the antiphospholipid syndrome.

References

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