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Subject:	IMMUNOLOGY ANALYTIC PROTOCOLS				
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IMMUNOLOGY ANALYTIC PROTOCOLS

ANTI-PHOSPHOLIPIDS

Beta 2 Glycoprotein I and Cardiolipin autoantibodies have been associated with thrombosis, fetal wastage, thrombocytopenia and other manifestations. Evidence has been accumulated that some antiphospholipid antibody molecules recognize cardiolipin, whereas others recognize a complex formed by cardiolipin and a carrier protein, B2GPI. Measurement of anti-B2GPI IgM and IgG may be more specific for the diagnosis of APS patients than the measurement of anti-ACL. Patients with IgA anti-B2GPI have been correlated to a large portion of SLE patients.

AUTOIMMUNE DISEASES

The AtheNA Multi-Lyte system detects IgG class antibodies in human sera to ten separate analytes: SS-A, SS-B, Sm, RNP, Scl-70, Jo-a, Centromere B, Histone, dsDNA and qualitative ANA by a multiplexed bead suspension. The test system is intended to be used as an aid in the diagnosis of various autoimmune disorders.

1. FANA Profile – ANA screen and ANA Titer if screen is positive.
2. FANA with Reflex to Extractable Nuclear Antigens(ENA) which includes eight antibodies: SS-A, SS-B, Sm, RNP, Scl-70, Jo-a, Centromere B, and Histone.
3. All antibodies may be ordered separately.
4. Vasculitis panel – detects IgG class antibody to 3 separate antigens in human serum: glomerular basement membrane, myeloperoxidase, and proteinase 3.

CELIAC DISEASE

Celiac disease is an autoimmune disorder characterized by an inappropriate immune response to gluten, a protein found in wheat, and related dietary proteins in rye and barley. Celiac disease antibody tests are a group of assays developed to help diagnose and monitor the disease and a few other gluten-sensitive conditions. These tests detect autoantibodies in the blood that the body produces as part of the immune response.

Anti-tissue transglutaminase antibody (anti-tTG), IgA: detects antibodies to tissue transglutaminase, an enzyme that causes the crosslinking of certain proteins. Anti-tTG, IgA is the most sensitive and specific blood test for celiac disease. The IgG class of anti-tTG may be ordered for people who have a deficiency of IgA.

ELECTROPHORESIS

The Spife 3000 is used for automatic sample application, electrophoresis, staining, and fixing for better resolution and pattern separation for serum and urine proteins, CSF IgG IEF, hemoglobin (normal/abnormal) and immunofixation.

1. Immunoglobulin Quantitation – IgG, IgA, IgM, and protein electrophoresis.
2. Immunofixation (serum and urine) – Protein electrophoresis and immunofixation electrophoresis. MCL now performs an M-spike (a characteristic monoclonal band that is often found in the urine of patients with monoclonal gammopathies) on every 24 hour urine that has orders submitted for quantitative electrophoresis with an immunofixation (IFE). This can be ordered using the mnemonic MONOPRU. This allows the physician to obtain the urine IEP/IFE, M spike calculation, urine volume, urine Total Protein, and urine Creatinine.
3. Hemoglobin Electrophoresis – Alkaline Hemoglobin electrophoresis is used as a screening method for normal to abnormal hemoglobin patterns. Acid hemoglobin electrophoresis is also used for abnormal hemoglobins.
4. Protein Electrophoresis (serum, urine, and CSF) – Protein electrophoresis helps differentiate glomerular, tubular, mixed proteinuria patterns, and monoclonal proteins in urine. MCL not performs an M-spike (a characteristic monoclonal band that is often found in patients with monoclonal gammopathies) on all tests that contain a serum PEP. If no M-spike is present you will see a “negative” result.
5. L/S Ratio – The determination of lecithin and sphingomyelin levels in amniotic fluid are performed by thin layer chromatography for estimating fetal lung maturity.
6. Oligoclonal profile – aids in diagnosis of inflammatory disease of the CNS by agarose gel isoelectric focusing and immunoblotting CSF and serum.

HELICOBACTER PYLORI

Helicobacter pylori assay is an automated enzyme-linked fluorescent immunoassay for the detection of IgG antibodies to Helicobacter pylori. This assay is intended as an aid in the diagnosis of H. pylori infection in an adult symptomatic population.

ROTAVIRUS

The Rapid Immunocard Rotavirus Assay detects the presence of rotavirus antigen in stool. Rotavirus is a major cause of nonbacterial gastroenteritis especially in the very young and the elderly. Detecting the presence of the virus will facilitate proper patient isolation and eliminate possible unnecessary antibiotic treatment. Co-infection with bacterial pathogens are possible.

FEBRILE AGGLUTININS

Febrile antigens are used in a panel of agglutination tests for the diagnosis of certain febrile diseases such as Salmonellosis, Brucellosis, and Rickettsial diseases.

1. Typhoid H
2. Typhoid O
3. Para A and Para B for Salmonella
4. Rickettsial – Proteus OX19, OXK, and OX2
5. Brucella Abortus

LYME SEROLOGY

An automated qualitative enzyme linked fluorescent immunoassay is used for the detection of total antibodies (IgG/IgM) to Borrelia burgdorferi in patients with history, signs, or symptoms suggestive of infection.

HEPARIN ASSOCIATED ANTIBODY

An enzyme linked assay screening test is used in the confirmation of HIT (Heparin Induced Thrombocytopenia) which are antibodies directed against heparin complexes and platelet factor 4. Platelet factor 4 antibodies are present in most patients with HIT.

FUNGAL SEROLOGY

Ouchterlony Double Diffusion is used in determining in vitro precipitating antibodies to four systemic fungal pathogens.

1. Histoplasma capsulatum
2. Blastomyces dermatitidis
3. Coccidioides immitis
4. Aspergillus fumigatus

INFECTIOUS DISEASE

Epstein Barr Virus IgG (EBV IgG)
Epstein Barr Virus IgM (EBV Ig M)
Epstein Barr Nuclear Antigen
Cytomegalovirus IgG (CMV IgG)
Cytomegalovirus IgM (CMV IgM)
Herpes Simplex Virus IgG 1&2
Herpes Simplex Virus IgM 1&2
Measles (Rubeola) IgG
Mumps IgG
Varicella zoster IgG

SWEAT TEST

Performed on the Iontophoresis.

Outpatients are only performed on Tuesdays and must schedule an appointment with Medical Center Laboratory. Inpatients are performed as needed.

TPO ANTIBODIES

Thyroid peroxidase (TPO), an enzyme normally found in the thyroid gland, plays an important role in the production of thyroid hormones. The presence of TPO antibodies in blood suggests that the cause of thyroid disease is an autoimmune disorder, such as Hashimoto's disease or Graves' disease. Antibodies that attack the thyroid gland cause inflammation and impaired function of the thyroid.

VASCULITIS PANEL

The Vasculitis Panel consists of qualitative and semi-quantitative detection of IgG class antibody to 3 separate Antigens (Glomerular Basement Membrane, Myeloperoxidase and Proteinase 3) in human serum. The detection of these antibodies are intended to be used as an aid in the diagnosis of various autoimmune vasculitic disorders characterized by elevated autoantibodies levels. MPO and/or PR3 may be associated with autoimmune disorders such as Wegener's Granulomatosis, ICGN, MPA and PRS. Anti-Glomerular Basement Membrane (GBM) antibodies aid in the diagnosis of Goodpasture's syndrome.