Immunodeficiency Evaluation for Chronic Infections in Infants and Children Testing

**Consider**
- Immunoglobulins (IgA, IgG, IgM), Quantitative
- Lymphocyte Subset Panel 6 - Total Lymphocyte Enumeration with CD45RA and CD45RO or Lymphocyte Subset Panel 7 – Congenital Immunodeficiencies
- Response to polyvalent pneumococcal vaccine if >2 years
- Response to diphtheria and tetanus (DT) vaccine
- Sweat chloride testing (at an accredited cystic fibrosis center)

**ORDER**
- HIV NAAT – test of choice in children ≤18 months (antibodies do not function in infants)
- CD4+ T-Cell Recent Thymic Emigrants (RTEs)
- Lymphocyte Subset Panel 6 - Total Lymphocyte Enumeration with CD45RA and CD45RO or Lymphocyte Subset Panel 7 – Congenital Immunodeficiencies
- Lymphocyte mitogen proliferation (LMP)

**Immunoglobulin disorder evaluation**
- Low IgG, IgM, IgA OR poor antibody response to vaccination
- High IgM, low IgG, IgA
- Positive sweat chloride
- Low IgA

**ORDER**
- B-Cell Memory and Naive Panel
- Cystic Fibrosis (CFTR) 165 Pathogenic Variants with Reflex to Sequencing
- Immunoglobulin G Subclasses (1, 2, 3, 4)

**T-cell disorder evaluation**
- B cells present
- No B cells present
- Low T cells
- Low LMP
- Abnormal RTEs
- Abnormal facies
- Hypocalcemia

**ORDER**
- Immunology consult
- May need immunoglobulin replacement
- Consider genetic testing
- Possible severe combined immunodeficiency
- Positive for deletion
- DGeorge syndrome
- Possible chronic mucocutaneous candidiasis

**Abscesses; pneumonia; delayed separation of umbilical cord; recurrent respiratory infections with or without diarrhea**

**ORDER**
- Immunoglobulins (IgA, IgG, IgM), Quantitative
- Complement Activity Enzyme Immunoassay (CH50) and Complement Activity Alternate Pathway (AH50)
- CBC with Platelet Count and Automated Differential
- Neutrophil Oxidative Burst Assay (DHR)
- Leukocyte Adhesion Deficiency Panel
- Myeloperoxidase Stain
- Lymphocyte Subset Panel 7 – Congenital Immunodeficiencies

**Abnormal complement activity**
- Possible complement deficiency
- Individual complement testing based on results of CH50, AH50

**If all normal, contact immunology director for further evaluation**
- Low IgG or IgM
- Abnormal DHR
- Decreased CD11b/CD18
- Decreased CD15
- Increased IgE
- Candida spp-specific IgE neotrophil chemotaxis
- Kostmann agranulocytosis
- Neutrophil antibody positive
- Autoimmune neutropenia
- Myeloperoxidase deficiency

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