Common Rheumatology Labs

CRP	• Acute phase reactant, produced by liver in response to tissue injury/inflammation • Level rises ~ 4-6 hours after injury/infection, peak at ~24-72 hours, then falls after appropriate treatment
ESR	• Acute phase reactant, non-specific marker of inflammation. • Measures height of plasma layer vacated by RBC as cells settle in tube of anticoagulated blood in 1 hour. • Slower rise and slower fall compared to CRP • May be elevated due to anemia or hypergammaglobulinemia • May fall quickly in DIC or other conditions that consume or decrease production of fibrinogen
RF	• IgM autoantibody that reacts to Fc portion of IgG antibodies • Present in 5-10% of children w/ JIA; NOT useful as screening test for rheumatic disease in children • Useful only for predicting erosive disease in polyarticular JIA • Higher titers can be seen in Sjogren's Syndrome • Circulating immune complexes may give false positive RF results
ANA	• Autoantibodies directed against nuclear or perinuclear antigens. • Conditions associated w/ (+) ANA: ▪ Autoimmune: autoimmune hepatitis, SLE, MCTD, JIA, PBC, UC, MG, Graves', Hashimoto's ▪ ID: chronic infections (malaria, SBE), RPR, viral (HIV, HSV, EBV, HCV, B19) ▪ Systemic inflam.: lymphoproliferative disorders, interstitial pulmonary fibrosis, asbestosis • Medications associated w/ (+) ANA and drug-induced lupus (+anti-histone Ab): ▪ Procainamide (90%) ▪ Hydralazine (65%) ▪ Anti-TNF agents (especially infliximab) ▪ INH ▪ Quinidine ▪ Phenytoin ▪ Sulfasalazine ▪ Minocycline ▪ Lithium ▪ Chlorpromazine • Titers do not correlate w/ disease severity
ANCA	• Ab targeting antigens in cytoplasmic granules of neutrophils; highly sensitive for vasculitides that have predominant pulmonary and renal involvement • Not useful for screening patients w/ possible vasculitis due to false positive and negative results. • **Cytoplasmic (c-ANCA)**: antibody to proteinase-3 & positive in about 90% of patients w/ Granulomatosis w/ Polyangiitis (formerly Wegener's granulomatosis) • **Perinuclear (p-ANCA)**: antibody to myeloperoxidase & associated w/ microscopic polyangiitis, Churg-Strauss, Ulcerative colitis • Titers often do not correlate w/ disease severity

Autoantibody Associations

ANA	• SLE • juvenile RA • dermatomyositis	• scleroderma • psoriatic arthritis • MCTD
RNP	• SLE • overlap conditions	• > 95% of MCTD
Smith	• 30% of juvenile SLE, 60% of adult SLE • High specificity	• Remains positive when SLE in remission
dsDNA	• 70-80% of SLE • High specificity	• Associated w/ SLE activity and lupus nephritis
Scl-70	• 30% of diffuse scleroderma • 15% of limited scleroderma	• Assoc. w/ pulmonary fibrosis