**Policy: Pre and Post Liver Transplant Lab Draw Protocol**

**Statement: Statement: 1. Activation date:** 3/19/2015
**2. Affected Department:** LiverTransplant Program
**3. Vision Strategy:** Patient Care
**4. Policy Statement:** The Emory Transplant Center will comply with all applicable federal, state and local laws, regulations and policies regarding the ordering or appropriate laboratory tests.
**5. Basis**: This policy is necessary for the protection of patients, physicians and staff
**6. Administrative Responsibility:** Section heads, physicians, practitioners, and staff are responsible for compliance with this policy.

**Scope/Procedure:**

**7. Lab testing Protocol:**

**a.** All patients will have laboratory testing done with each visit as needed.

\***NOTE:** 2nd Group & Type (ABORH) will only be performed at Team Evaluation.
**b.** Different appointment types will require specific laboratory testing as noted below.
**c.** Physician may add or remove additional testing as appropriate for individual patient.

**Pre-Liver Transplant Labs:**

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| **Initial Evaluation** | ABO RhAlpha-1 Antitrypsin PhenotypeAFP (alpha fetoprotein)AMAASMA (anti-smooth muscle antibody)CeruloplasminCBC w/diff Comprehensive Metabolic profileEBV (Epstein Barr Antibodies)Iron + TIBC FerritinGGT Hemoglobin A1cHepatitis A Antibody (IgG & IgM)Hepatitis B diagnostic profileHepatitis C antibodyHepatitis C QuantitativeHIV Antigen/AntibodyHLA Class I Type by Low Resolution DNAHLA Class II Type by Low Resolution DNAIg Heavy Chain QuantitationPT/PTT RPR (rapid plasma regain)TSHVaricella Zoster Virus Antibody IgGUrine Toxicology ScreenUrine for EthanolUrine for Nicotine**If Known Hepatitis B+ patient**:Hepatitis B surface antigenHepatitis B antibodyHepatitis Be antigenHepatitis Be antibody Hepatitis B DNA**One or more of the following tests ordered as necessary by patient history:**AmmoniaANCA PanelDIC ProfileCA 19-9CEA (Carcinoembryonic Antigen)Factor V Leiden by PCR (Activated Protein C Resistance)HCV Genotype if known Hepatitis C +HLA Class I Antibody SpecificityHLA Class II Antibody SpecificityImmunoglobulin G Subclass 4LipaseLipid ProfileMOCHA ProfileProtein Electrophoresis (SPEP)Prothrombin Gene Mutation by PCRPSAPTH if renal insufficiencyQuantiferon Tb GoldT-SPOTVitamin A level (Retinol)Vitamin D, 25-HydroxyVitamin E levelUrine Creatinine RandomUrine timed 24 hour creatinine clearanceUrine Ethyl glucuronide Screen with ReflexUrine Protein RandomUrine timed 24 hour proteinUrine sodium RandomUrine timed 24 hour sodium**1st Day** -ABO Type and Screen **2nd Day**-Group and Type for ABOHFE gene testing for Caucasians without established genetic hemochromatosis and transferrin saturation > 45% and ferritin > 250 |
| **Follow – up & Team Evaluation** | **\**At Team Evaluation Only draw:***Group & Type (ABORH) -document: “Transplant Evaluation”HLA: ABC (class I) Molecular TypingDR/DRQ (class II) Molecular TypingAutologous CrossmatchAntibody Screen (PRA)**Follow-up Appt:***(CBC w/ diff**Comprehensive Metabolic Profile**PT/PTT– order only if the team evaluation does not immediately follow pt. consult visits with Hepatologists and Surgeons.* |
| **With follow up OR visit 6 months** | CA 19-9 (for PSC and malignancies only) |
| **Every 6 Months for patients with Hepatitis B** | Hepatitis B DNA Quantification |
| **Every 6 Months for all cirrhotic patients** | AFP  |
| **Every 12 Months** | HIV PSA |
| **Living Donor Evaluation** | CBC w/ diff & plateletsComprehensive Metabolic Profile GGT PT/PTT & INR RPRCMV antibody EBV antibodyFactor V Leiden by PCR Hepatitis A total & IgM antibody Hep B diagnostic profile Hep C antibody Hep C qualitative (not quant) PCRProthrombin Gene mutation by PCRVZV antibodies Urine - HCG if femaleAlpha 1 antitrypsin level (AA1T)Alpha 1 antitrypsin phenotype (AA1T pheno)Anti Mitochondrial antibody (AMA)Anti smooth muscle antibody (ASMA)Anti nuclear antibody (ANA)FerritinIron Total iron binding capacity (TIBC)Ceruloplasmin |
| **MELD Lab Orders** | Comprehensive Metabolic PanelPT/INRAdditional Lab work as directed by changes in UNOS guidelines |

**Post-Liver Transplant Labs:**

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| **Standing Lab Orders (selected orders to be collected at each lab visit)** | CBC (includes platelet, no diff) Differential, Automated Comprehensive Metabolic Panel Cholesterol Total Gamma GT (GGT) Lipid Profile Magnesium level Cyclosporine level Prograf level Sirolimus (Rapamune) level Everolimus level |
| **Urine Tests** | Urinalysis Urine Chloride Urine Microalbumin/Creatinine Ratio Urine Phosphorus Urine Protein Urine Potassium Urine Sodium |
| **Miscellaneous Tests** | Bilirubin Total and Fractionated Hemoglobin A1C Lipid Profile PTT PT/INR Phosphorus Triglyceride level Uric Acid Vitamin D-25 Hydroxy |
| **Timed Orders** (Each visit, Each month, or Annually) | Urine Ethyl Glucuronide Screen with Reflex BK Virus Quantitation by PCR CMV Quantitation by PCR (weekly option) HCV quantitative by PCR Hepatitis B DNA Quant (3 month) EBV DNA Quantitation by PCR Ethanol, Random Urine Rapid Drug Screen, Random Urine |

Approved by Liver Transplant Leadership team on 3/19/15

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| **Regulatory References:** |  |