**Policy: Pre and Post-Liver Transplant Hepatocellular Carcinoma (HCC) Protocol**  
  
**Statement: Statement: Statement: 1. Activation date:**   
**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 management of prescribing medications and refills.   
**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:**

**Protocol:**

**1. Pre-Transplant:**

All patients will sign a Liver tumor conference consent form (available on website)

**a. HCC screening**

i. AFP at least every 6 months (or at the discretion of the provider and/or coordinator)   
ii. MRI (or CT/ultrasound at provider’s discretion) at least every 6 months. Whenever possible MRI should be done at Emory.

**b. HCC in non-cirrhotics or compensated cirrhotics:**

i. Consider resection for patients with normal bilirubin and hepatic wedge pressures < 10and/or Interventional Radiology (IR) consult for locoregional therapy (chemoemboliztion and/or ablation). Consultation with Surgeon should be performed prior to IR consult.

ii. CT of the Chest or MRI of the Chest at the time of diagnosis (to evaluate for metastases)

**c. HCC in cirrhotics** (not undergoing resection)

i. HCC’s within Milan criteria (Solitary HCC 2-5cm, 2-3 lesions <3cm):

1. AFP every 3 months

2. AFP at the time of transplant

3. MRI every 3 months

4. CT of the Chest or MRI of the Chest at the time of diagnosis

5. CT of the Chest every 3 months

6. Proceed with transplant evaluation and listing pending approval by the Liver Transplant Selection Committee

7. Consider IR consult for loco-regional therapy

ii. HCC’s outside of Milan Criteria (high risk features on imaging; historically not a transplant candidate)

1. AFP every 3 months

2. MRI every 3 months

3. CT of the Chest every 3 months

4. CT of the Chest or MRI of the Chest at the time of diagnosis (may consider repeat scans for surveillance at the discretion of the provider)

5. Bone scan at presentation

6. Consider Hematology/Oncology consult (for systemic chemotherapy) and/or IR consult for down-staging

**d. Suspicious nodules, small HCC’s, elevated Alpha feto-proteins**

i. AFP every 3 months (or at the discretion of the provider and/or coordinator)

ii. MRI every 3 months until stability is established

iii. CT of the Chest or MRI of the Chest at the time of diagnosis of HCC (may consider repeat scans for surveillance at the discretion of the provider)

**e. Intra-hepatic cholangiocarcinoma or mixed tumors**

i. Liver transplantation will not be offered

**2. Post-Transplant:**

**a. HCC’s on explant which were within Milan Criteria and without high risk features (Solitary HCC 2-5cm, 2-3 lesions <3cm):**

i. AFP at 3 months, 6 months, 12 months, 18 months, and 24 months

ii. MRI at 6 months, 12 months, 18 months, and 24 months

**b. HCC’s on explants which were outside Milan Criteria or High Risk/with Vascular Invasion, and Mixed Tumors (Cholangiocarcinoma/HCC):**

i. AFP at 3 months, 6 months, 12 months, 18 months, and 24 months

ii. CA 19-9 and AFP for mixed tumors at 3 months, 6 months, 12 months, 18 months, and 24 months

iii. MRI at 3 months, 6 months, 12 months, 18 months, and 24 months

iv. CT of the Chest or MRI of the Chest at 3 months, 6 months, 12 months, 18 months, and 24 months

v. Oncology consult for possible systemic chemotherapy

**c. Post-Transplant Patients who develop cirrhosis**

i. AFP every 6 months

ii. MRI every 6 months

**d. Post-OLT Recurrences and New HCC in a Post-Transplant Patient**

i. AFP every 3 months (or at the discretion of the provider and/or coordinator)

ii. MRI every 3 months

iii. CT of the Chest or MRI of the Chest at the time of diagnosis (may consider repeat scans for surveillance at the discretion of the provider)

iv. Consider IR consult

v. Consider Oncology consult

**REFERENCES**

Bruix J, et al. Management of Hepatocellular Carcinoma. Hepatology 2005;42:1208-1236

Aljabiri MR, et al. Surveillance and Diagnosis for Hepatocellular Carcinoma. 2007;13:S2-S12

Lee F. Treatment of Hepatocellular Carcinoma in Cirrhosis: Locoregional Therapies for Bridging Liver Transplant. 2007;13:S24-S62

Majno P, et al. Management of Hepatocellular Carcinoma on the Waiting List Before Liver Transplantation. 2007;13:S27-S35

Approved by: Liver Transplant Leadership Group

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Approval dates: 4/12/10, 5/13/11, 6/8/12