

Hepatocellular Cancer

Hepatocellular Carcinoma (HCC)

Diagnosis

Can diagnose on imaging alone! No biopsy required

Triple Phase CT or MRI

Triple Phase CT = Standard of Care

Arterial phase: tumor enhances > liver

Venous phase: tumor enhances < liver

Delayed phase: persistent wash-out

Li-RADS Score (1-5) = radiographic risk of HCC

Li-Rads 1-3 = benign

Li-Rads 4 + AFP < 400 = biopsy

Li-Rads 4 + AFP > 400 = HCC

Li-Rads 5 = HCC

Tumor Markers

AFP: can be elevated from infections, as well as cancer

Clinical Risk Factors

Risk Factors

Hepatitis

ETOH

Hemochromatosis

Alpha 1 Anti-Trypsin

Primary Biliary Cirrhosis

NASH

HCC: Barcelona Clinic Liver Cancer Staging & Prognosis

BCLC Stage	Lesions	Liver Function	Prognosis (OS)
BCLC Stage A Early Stage	1-3 intra-hepatic lesions	Preserved Childs-Pugh A-B (≤ 9)	> 5 years
BCLC Stage B Intermediate Stage	> 3 intra-hepatic lesions	Preserved Childs Pugh A-B (≤ 9)	2-5 years
BCLC Stage C Advanced Stage	Extra-hepatic lesions Ex: portal vein	Preserved Childs Pugh A-B (≤ 9)	1-2 years
BCLC Stage D End Stage	Extra-hepatic lesions	Abnormal Childs Pugh C (≥ 10)	< 6 months

HCC: Treatment by BCLC Stage

BCLC Stage	Treatment
BCLC Stage A Early Stage	Transplant Candidate → Transplant Not Transplant Candidate → Resect or Ablate
BCLC Stage B Intermediate Stage	Embolization
BCLC Stage C Advanced Stage	Systemic Therapy
BCLC Stage D End Stage	Palliative care
All Stages + hepatitis infection	Anti-viral therapy Ex: Entecavir

HCC: BCLC Stage A Treatment

BCLC Stage A = Early



YES a Transplant Candidate

NOT a Transplant Candidate
Locoregional Therapy

Milan Criteria:
Transplant Eligibility Criteria

1 tumor < 5 cm
3 tumors < 3 cm each

Not BCLC Stage C/D

- No extra-hepatic spread
- No macrovascular involvement

* Can sometimes use neoadjuvant therapy to downstage and make a patient transplant-eligible

HCC: BCLC Stage A Treatment

BCLC Stage A = Early

NOT a Transplant Candidate

= Locoregional Therapy

1. Resection

Surgical Resection

1 lesion < 3 cm = curable → resection preferred to transplant

Can resect tumors > 8 cm. Need 20% viable liver tissue post-op for adequate function

2. Ablation

Radiofrequency Ablation (RFA) = Microwave Ablation

Electrode needle delivers local radiofrequency thermal energy heat → tumor necrosis

For patients who are NOT surgical candidates

HCC: BCLC Stage B Treatment

BCLC Stage B = Intermediate

Large, Unresectable

* Can be a bridge to transplant

Embolization

Destruction of tumor blood supply

1. Chemoembolization = TACE: trans-arterial chemoembolization

Injection of chemotherapy into the hepatic artery

2. Radioembolization

Injection of radioactive isotopes (ex: Y-90 or I-131) into the hepatic artery

3. Bland Embolization

Embolization of hepatic artery without chemicals or radioactive isotopes

Firm Contraindications:

- Extra-hepatic spread/PVT involvement (BCLC Stage C)
- Child-Pugh C/Liver dysfunction: bilirubin >3 (BCLC Stage D)

Relative Contraindications:

- Tumor burden > 50% liver, esophageal varices, LDH > 450, AST > 100

HCC: BCLC Stage C Treatment

Systemic Therapy

Front Line

Atezolizumab + Bevacizumab

Childs-Pugh A (*consider in B)
Contraindications: AI disease, untreated varices, bleeding, thrombosis, stroke
Higher RR, PFS, OS than sorafenib

Lenvatinib

Childs-Pugh A only
Contraindications: PVT involvement
Higher RR, PFS, OS than sorafenib

Sorafenib

Childs-Pugh A or B
Can give if PVT involvement

Tremelimumab/Durvalumab

Childs-Pugh A or B
1 dose Treme --> IO monotherapy

Second Line

Nivolumab +/- Ipilimumab

Childs Pugh A or B
Childs Pugh A only for Nivo/Ipi

Pembrolizumab

Childs-Pugh A only

Cabozantinib

Childs-Pugh A only

Regorafenib

Childs-Pugh A only

Ramucirumab

AFP > 400

BCLC Stage C = Advanced

Extra-hepatic spread

ex: PVT involvement

Hepatocellular Cancer Reference Handout

HCC Dx

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BCLC Stage C Advanced	Extra-hepatic lesions	Preserved Childs Pugh A-B (≤ 9)	1-2 years
BCLC Stage D End Stage	Extra-hepatic lesions	Abnormal Childs Pugh C (≥ 10)	< 6 months

HCC Tx Paradigm

BCLC Stage	Treatment
BCLC Stage A Early	Transplant Candidate → Transplant Not Transplant Candidate → Resect or Ablate
BCLC Stage B Intermediate	Embolization Chemoembolization, Radioembolization, Bland Embolization
BCLC Stage C Advanced	Systemic Therapy Atezolizumab/Bevacizumab, Tremelimumab/Durvalumab, Lenvatinib, or Sorafenib
BCLC Stage D End Stage	Palliative care
All Stages + hepatitis infection	Anti-viral therapy

HCC Dx

BCLC Stage A = Early

YES a Transplant Candidate

Milan Criteria: Transplant Eligibility Criteria

- 1 tumor < 5 cm
- 3 tumors < 3 cm each

Not BCLC Stage C/D

- No extra-hepatic spread
- No macrovascular involvement

NOT a Transplant Candidate

Locoregional Therapy:

1. Surgical resection
2. Radiofrequency Ablation (RFA)
= Microwave Ablation

BCLC Stage B = Intermediate

Embolization

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1. **Chemoembolization = TACE: trans-arterial chemoembolization**
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2. **Radioembolization**
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- Child-Pugh C/Liver dysfunction: bilirubin >3 (BCLC Stage D)

BCLC Stage C = Advanced

Front Line:

Atezolizumab + Bevacizumab

Childs-Pugh A (consider in B)
Contraindications: AI disease, untx varices, bleeding, stroke, thrombosis, ileus

Tremelimumab + Durvalumab

Childs-Pugh A or B
Contraindications: AI disease

Lenvatinib

Childs-Pugh A only
Contraindications: PVT involvement

Sorafenib

Childs-Pugh A or B

Second Line:

Nivolumab +/- Ipilimumab
Pembrolizumab
Cabozantinib
Regorafenib
Ramucirumab