Surveillance for Hepatocellular Carcinoma

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IAS–USA
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Disclosure Information

Dr Peters has reported the following financial relationships with commercial firms:

- Consultant: Merck & Co, Inc, Theravance, and Roche
- Data safety monitoring board: Biotron
- Scientific advisor: Clinical Care Options
- Her spouse is employed by Genentech (Roche)

Outline

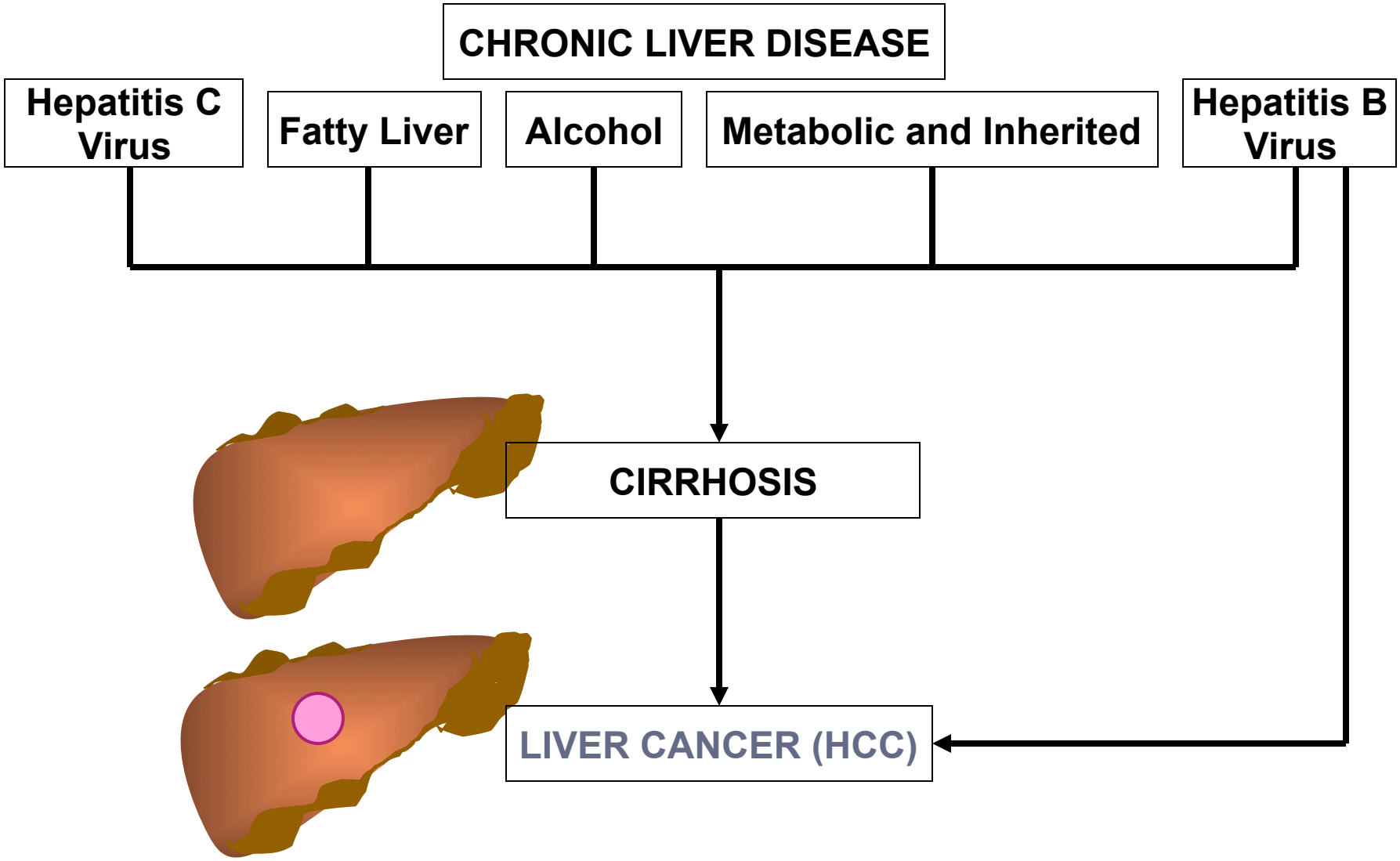
① Indications for surveillance

② Surveillance methods

③ Evaluation of abnormal screening test

Indications for Surveillance

Who is at Risk for Hepatocelllular Carcinoma (HCC)?



Surveillance Methods

Surveillance of HCC

- Surveillance: applying screening tests at regular intervals in patients at risk for HCC
- Most commonly used surveillance in clinical practice: ultrasound and alpha-fetoprotein (AFP) every 6 months
- The added value of AFP to ultrasound in surveillance has been questioned. AFP no longer included in 2011 American Association for the Study of Liver Disease (AASLD) guidelines; used in European Association for the Study of the Liver (EASL) and Asian Pacific Association for the Study of the Liver (APASL) guidelines

Bruix J and Sherman M - AASLD guidelines; *Hepatology.* 2011

Tumor Markers

- AFP as a screening test
  - 20%-40% with HCC have normal AFP
  - 20%-30% without HCC have abnormal AFP
  - The higher the AFP, the more likely the diagnosis of HCC
- Des-gamma-carboxy prothrombin (DCP; aka PIVKA-II) not better than AFP [1]
- AFP as a prognostic marker
  - Predicts overall mortality in HCC [2]
  - Predicts prognosis after resection
  - Predicts prognosis after liver transplant [3]

[1] Marrero JA et al. *Gastroenterology.* 2009;137:110-118; [2] Tyson GL et al. *Clin Gastro Hepatol.* 2012; [3] Macdonald B, et al. *AASLD* 2010.

HCC Monitoring Guidelines for HCV Patients

- All patients with cirrhosis even after SVR
- Screening strategy
  - Ultrasonography at intervals of 6 or 12
  - Serum AFP testing: no longer recommended by AASLD guidelines
- Based on
  - Low incidence of HCC in those at risk: 1%-4% per year
  - Slow growth of these tumors, mean estimated doubling time of 136 days

Recognize Advanced Liver Disease

- Diagnose cirrhosis
  - Liver biopsy
  - Noninvasive markers/ transient elastography
  - Ultrasound low sensitivity 55%-70%, accuracy 77%-87%
    - Better if portal hypertension
- Clinical evidence of portal hypertension
  - Low platelets
  - Low white cell count
  - Splenomegaly
  - Spider nevi

Evaluation of Abnormal Screening Test

Diagnostic Criteria for HCC AASLD Guidelines (Modified)

- Tumor > 1 cm - One imaging (multi-phase CT/ MRI) showing typical HCC characteristics*

*** Arterial phase hypervascularity and delayed phase "washout"**

- Liver biopsy is not necessary for confirming diagnosis, but recommended if imaging criteria not met

Bruix J and Sherman M. AASLD guidelines; *Hepatology.* 2011

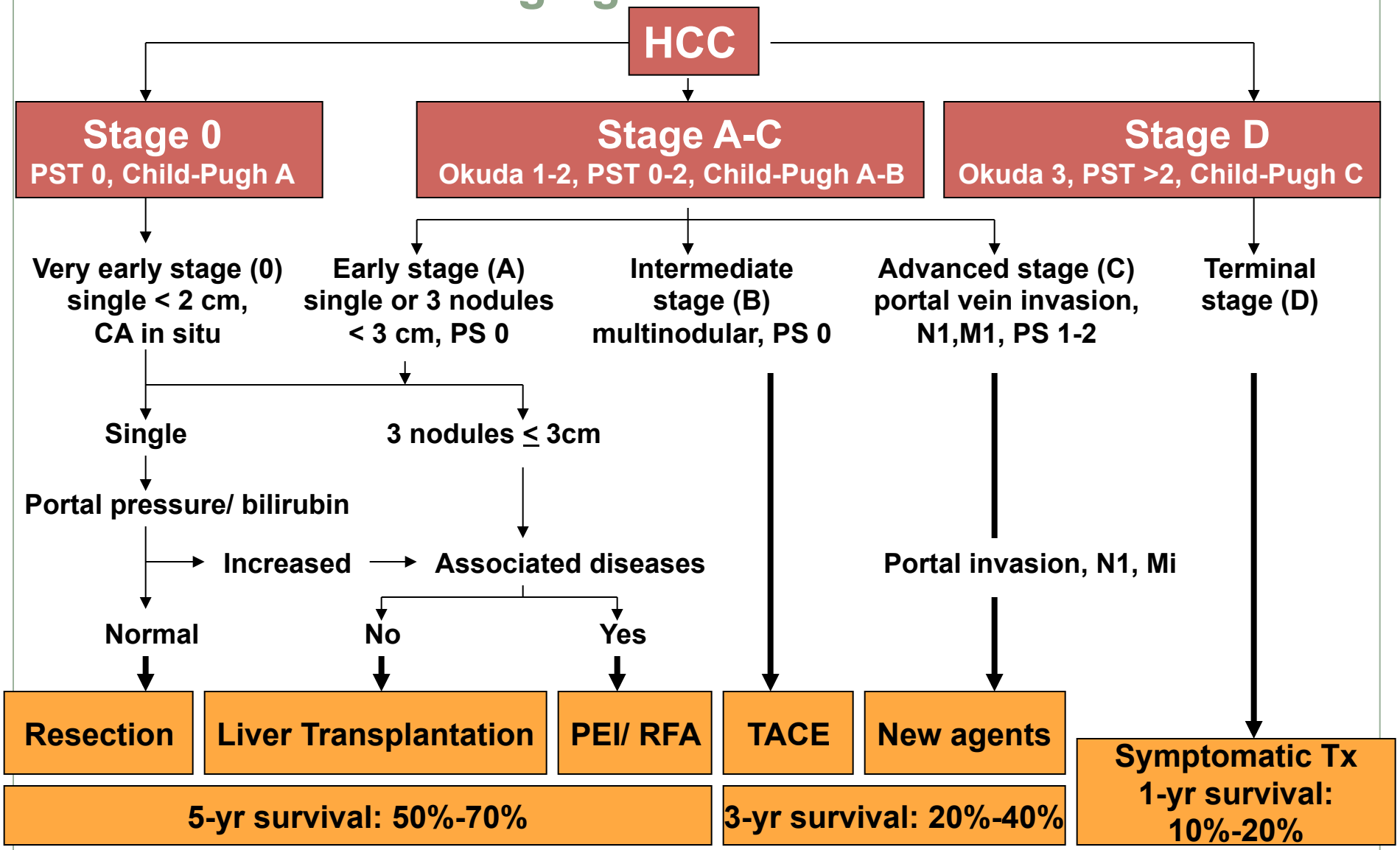
HCC – Is Biopsy Necessary?

Biopsy is not necessary to confirm HCC diagnosis if the lesion meets radiologic criteria in the appropriate clinical setting

- *False negative biopsy common in clinical practice and may need to delay in diagnosis and treatment*
- *Tumor seeding along the biopsy tract in 1%-5%*

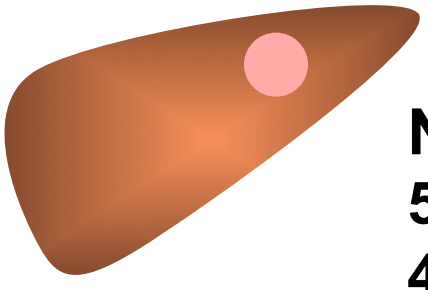
Biopsy is necessary in selected cases if atypical radiologic appearance or lack of strong risk factor for HCC

Barcelona Clinic Liver Cancer (BCLC) Staging Classification



Adapted from Llovet JM et al. *Lancet* 2003

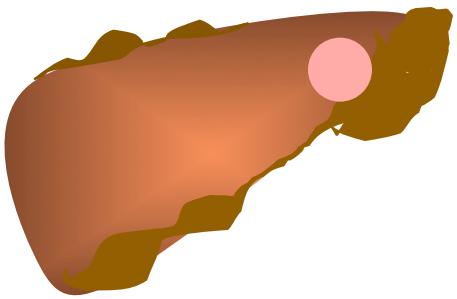
Surgical Treatment for HCV
Cirrhosis and Liver Function



NON-CIRRHOTIC → **RESECTION**

5% in Western countries

40% in Asia



CIRRHOTIC

Child A

Child B

Child C

→ **TRANSPLANT**

Hepatic Resection for HCC with Cirrhosis

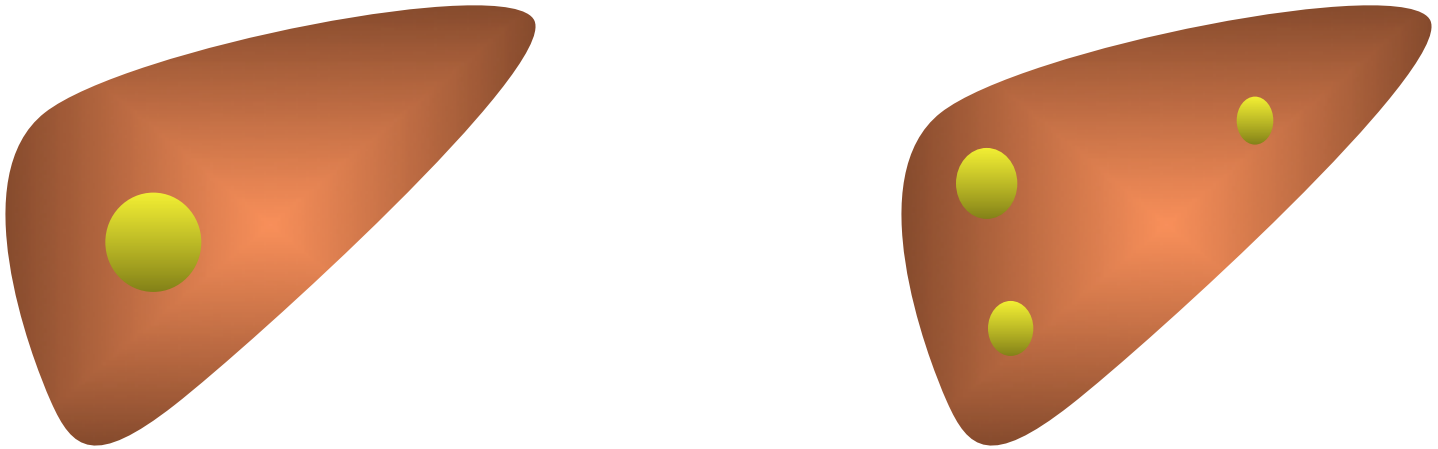
"Ideal" candidate

- Good liver function: Child-Pugh class A cirrhosis
- No portal hypertension (suggested by varices, enlarged spleen, platelets < 100,000/μL)
- Normal bilirubin
- Single lesion ≤ 5 cm
- Location of tumor in left lobe

Liver Transplantation for HCC
Milan Criteria

1 lesion ≤ 5 cm

2 to 3, none > 3 cm



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Absence of macroscopic vascular invasion
Absence of extrahepatic spread

Mazzaferro, et al. *N Engl J Med.* 1996

Local Regional Therapies for HCC

CHEMOEMBOLIZATION

Conventional and drug-eluting beads

ABLATIONS

CHEMICAL

Percutaneous ethanol injection (PEI)

THERMAL

Radiofrequency ablation (RFA)

(Laparoscopic, percutaneous or open)

Microwave/ Cryoablation

RADIOEMBOLIZATION (YITTRIUM - 90)

Summary

- All patients with cirrhosis require monitoring
- Ultrasound first line
  - AFP of limited value in diagnosis
  - CT or MRI if lesion found
- There are many treatment modalities available depending upon size and number of lesions

End

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