Evaluation and Prognosis of Patients with Cirrhosis

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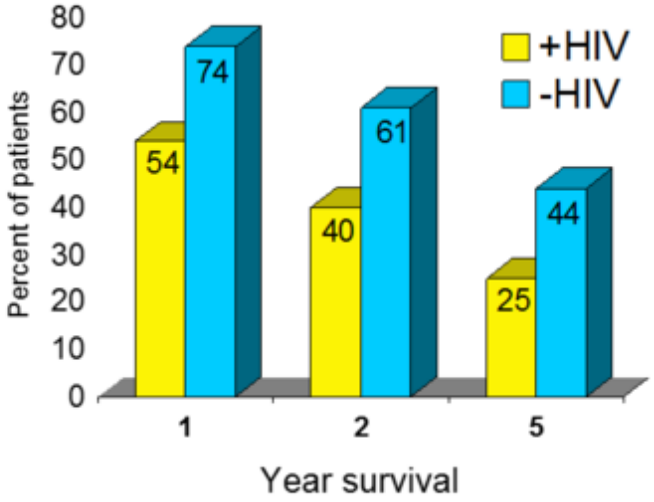
Survival Time From First Liver Decompensation to Death in HCV



- Death during study
  - 366/1037 HCV
  - 100/180 HIV/HCV
- Risk factors for death:
  - HIV
  - Baseline CTP
  - MELD >13
  - Age

Pineda, *Hepatology*, 2005

Ascites

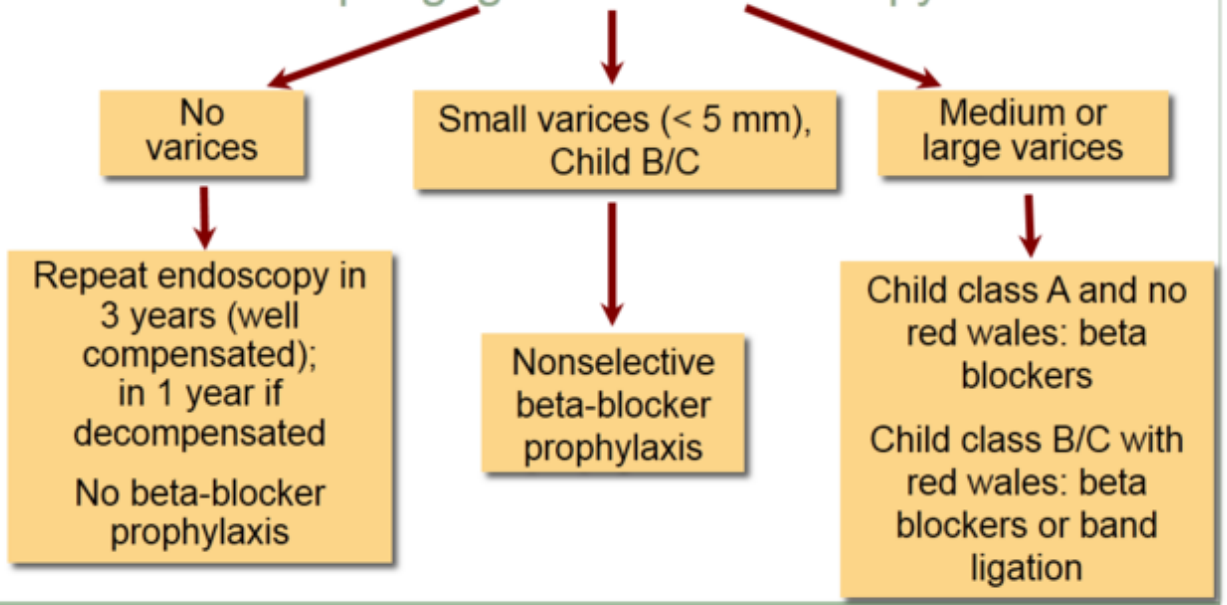
- Diuretic-responsive ascites
  - Sodium restriction
  - Spironolactone (75 mg-100 mg) and furosemide (20 mg-40 mg)
- Refractory ascites
  - Large volume paracentesis with 25% albumin (50 cc/L)
  - TIPS: higher orthotopic liver transplantation (OLT)-free survival, higher portosystemic encephalopathy (PSE)
- Hyponatremia
  - Fluid restriction, vasopressin 2 R antagonists
- Spontaneous bacterial peritonitis complication

Spontaneous Bacterial Peritonitis

- Most common type of bacterial infection in hospitalized patients with cirrhosis
- Clinical suspicion:
  - < 50%: fever, abdominal pain or tenderness, and leukocytosis
  - unexplained encephalopathy, jaundice
  - worsening renal failure
- Diagnose: tap ascites: WCC > 500, PMN > 250 cells/μL
  - Place ascites in blood culture bottles
- Start treatment immediately before culture results

Variceal Surveillance

All patients with cirrhosis require esophagogastroduodenoscopy



Garcia-Tsao G et al, *Hepatology*, 2007

Hepatorenal Syndrome

- Results from vasodilatation and marked reduction in effective arterial blood volume leading to renal vasoconstriction
- Occurs in patients with refractory ascites and/or hyponatremia
- Type 1 HRS: rapidly progressive renal failure in 2 weeks
- Type 2 HRS: slowly progressive - median survival: ~ 6 months
  - Albumin, midodrine, and octreotide-induced vasoconstriction
  - OLT

Hepatic Encephalopathy

- Treatment aims to reduce production of ammonia from the colon through
  - nonabsorbable disaccharides
    - lactulose, lactitol, and lactose
  - nonabsorbable antibiotics
    - neomycin, rifaximin
- Protein restriction promotes protein degradation and, if maintained for long periods, worsens nutritional status and decreases muscle mass
  - No longer recommended

Summary: ESLD and HCV

- All HCV patients should be assessed for fibrosis stage prior to starting therapy
- Progression to decompensated cirrhosis can occur with interferon alfa–based therapies
- All patients with cirrhosis require monitoring for
  - Varices with EGD
  - HCC with imaging positive and negative alpha-fetoprotein
  - Ascites and infection (SBP prophylaxis)
- Consider OLT when first decompensation occurs

End

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Disclosure Information

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

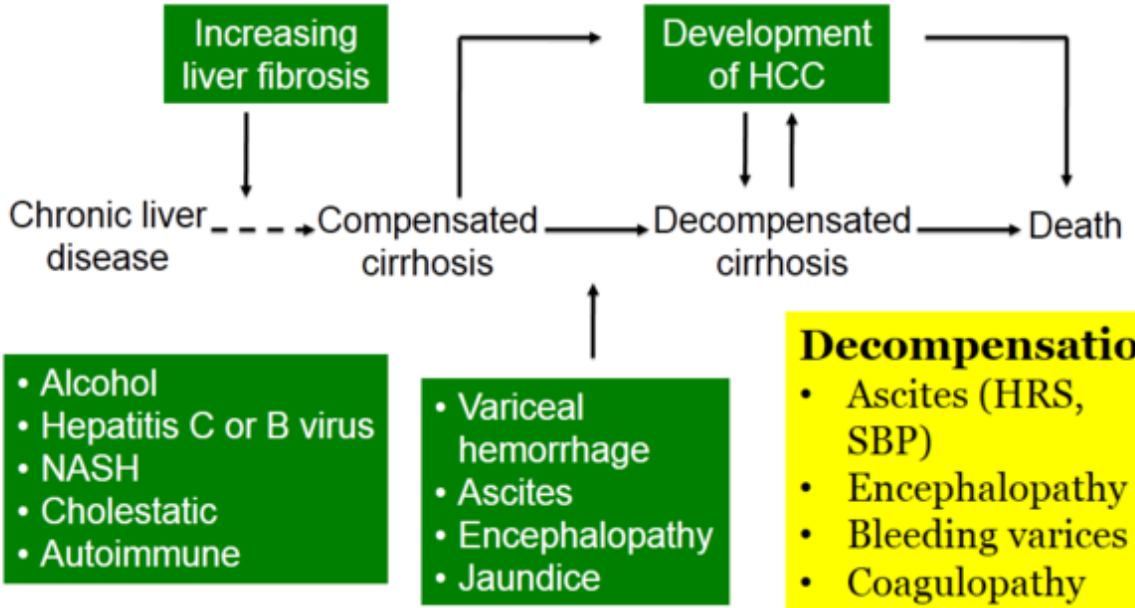
- Consultant: Merck & Co, Inc, Theravance, and Roche
- Data safety monitoring board: Biotron
- Scientific advisor: Clinical Care Options
- Her spouse is employed by Genentech (Roche)

Outline

- Cirrhosis staging
- Clinical evidence of portal hypertension
  - Low platelets
  - Low white cell count
  - Splenomegaly
  - Spider nevi
- Management of cirrhosis
- How to recognize decompensated liver disease
- Management of decompensated liver disease

Distinguishing Compensated and Decompensated Cirrhosis

Natural History of End-Stage Liver Disease (ESLD)



HCC, hepatocellular carcinoma; HRS, hepatorenal syndrome; NASH, nonalcoholic steatohepatitis; SBP, spontaneous bacterial peritonitis. Garcia Tsao CCO Hepatitis.com 2008

Natural History of ESLD

- Transition to decompensated cirrhosis: 5% to 7% of patients per year
- Best predictor of decompensation: hepatic venous pressure gradient (HVPG) > 10 mmHg
- HCC
  - can trigger decompensation
  - predictor of death in decompensated cirrhosis
- Tools for predicting disease severity and death in decompensated cirrhosis
  - Child-Turcotte-Pugh (CTP) score
  - Model for End-Stage Liver Disease (MELD) score

D' Amico 2006

Child-Pugh-Turcotte Score

Points	1 (normal)	2	3
Hepatic encephalopathy	None	1-2	3-4
Ascites	None	slight	mod
Bilirubin (mg/dL)	<2	2-3	>3
Albumin (g/dL)	>3.5	2.8-3.5	<2.8
Prothrombin time	<4 secs ↑	4-6 secs	>6 secs
or International Normalized Ratio	<1.7	1.7-2.3	>2.3

A: 5-6 B: 7-9 C: > 9

Classification and Prognostic Systems for Patients with Cirrhosis

MELD: Model for ESLD

Bilirubin (mg/dL)	2	5	5	5
INR	1.1	2.0	2.0	3.0
Creatinine (mg/dL)	1.0	1.0	2.0	2.0
MELD	**10**	**20**	**27**	**31**

- **Predicts 3-month mortality post TIPS/surgery**
- **Used for allocation of liver donors**

TIPS, transjugular intrahepatic portosystemic shunt
Kamath, *Hepatology*, 2001. Wiesner, *Gastroenterology*, 2003