

COMPLICATIONS OF CIRRHOSIS

OBSERVATIONS OF AN AGING
HEPATOLOGIST

COMPLICATIONS OF CIRRHOSIS

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Faculty Disclosure

Dr. Delich has indicated that he does not have any relevant financial relationships or affiliations that may have a direct bearing on the subject matter of this CME activity.

THE EPIDEMIC OF CIRRHOSIS

- **NAFLD/NASH**
- **HCV**
- **HBV**

Cirrhosis

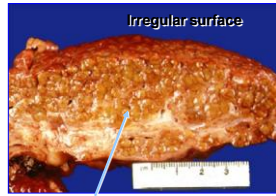
- End stage of any chronic liver disease
- Characterized **histologically** by regenerative nodules surrounded by fibrous tissue
- **Clinically** there are two types of cirrhosis:
 - Compensated
 - Decompensated



Normal



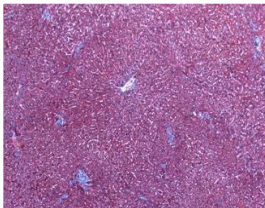
Cirrhosis



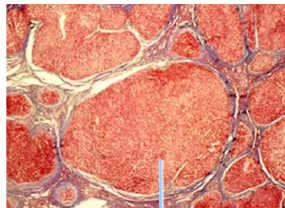
Nodules



Normal



Cirrhosis



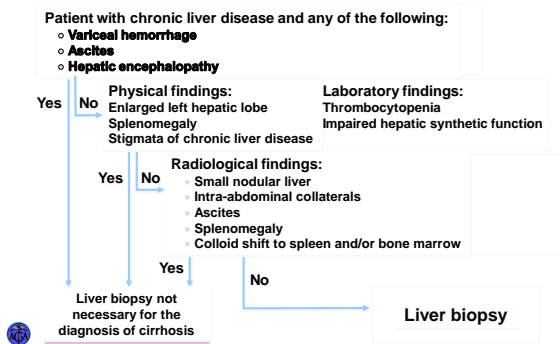
Nodules surrounded by fibrous tissue



Diagnosis of Cirrhosis

- Gold standard=liver biopsy
 - Usually not necessary
- Physical exam findings (spiders, palmer erythema, gynecomastia, hepatosplenomegally)
- Labs- thrombocytopenia, AST>ALT
- Radiologic Evidence

Diagnostic Algorithm

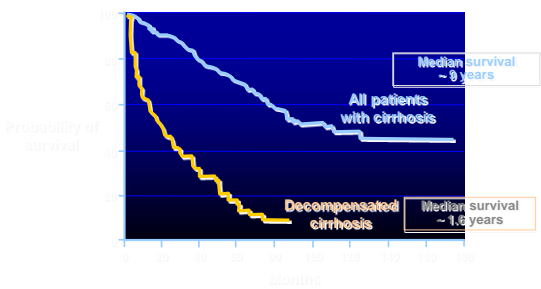


MANAGEMENT OF WELL COMPENSATED CIRRHOSIS

- Rx. Cause (HCV,HBV, wt. loss in NASH, phlebotomy in hemochromatosis etc)
- Screen for esophageal varices
- Screen for hepatocellular carcinoma
- Optimize transplant candidacy
- Observe for signs of decompensation.

- Decompensated cirrhosis- cirrhosis with signs of liver failure (ascites, edema, hepatic encephalopathy etc)

Decompensation Shortens Survival



Gines et. al., Hepatology 1987;7:122

Complications of cirrhosis

- Ascites → refractory ascites
 - SBP
 - hepatorenal syndrome
- Variceal Bleeding
- Hepatic Encephalopathy
- HCC

Uncomplicated Ascites

- Low Na diet
- Combination diuretics (spironolactone 100mg-400mg/day, furosamide 40mg-160mg/day)
- Therapeutic Paracentesis

Refractory Ascites

- Serial paracentesis with IV albumin infusion (8 grams/liter removed)
- TIPSS (Transjugular Intrahepatic Porto-systemic Shunt)
 - contraindicated in patients with history of hepatic encephalopathy, advanced disease (bili >3 etc), elderly

Spontaneous Bacterial Peritonitis

- Frequent complication
- Approx. 30% in hospitalized patients
- Diagnosed with paracentesis->250 PMNs per HPF
- Rx-3rd gen. cephalosporine x 5 days
- 70% recurrence in one year → prophylactic antibiotics

Hepatorenal Syndrome

- Rapidly progressive renal failure in setting of liver failure
- Absence of other causal factors
- No improvement with fluid challenge
- oliguria
- low urine Na

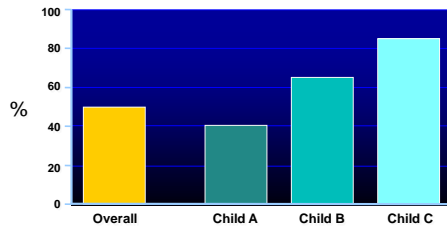
Rx. Of Hepatorenal syndrome

- Vasoconstrictors (oral midodrine-5 mg TID)
- Octreotide 100ug SQ TID
- Volume expansion (IV albumin)

Variceal Bleeding

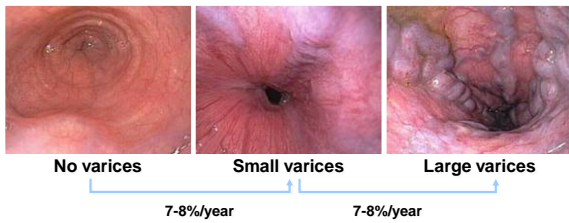
- Frequent complication (33-50% lifetime risk in cirrhotics)
- High mortality (20%)
- Increased risk with progression of liver disease.
- Preventable and treatable

Prevalence of Esophageal Varices in Cirrhosis



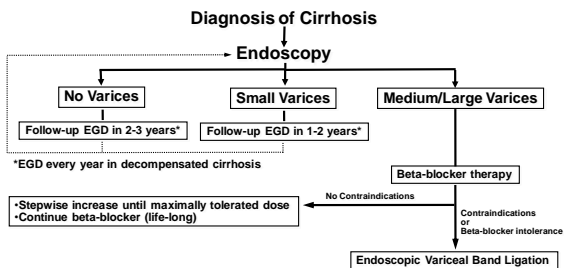
Pagliaro et al., In: Portal Hypertension: Pathophysiology and Management, 1994: 72

Varices Increase in Diameter Progressively



Merli et al. J Hepatol 2003;38:266

Prophylaxis of Variceal Hemorrhage



Merli et al. J Hepatol 2003;38:266

Management of Acute bleeding

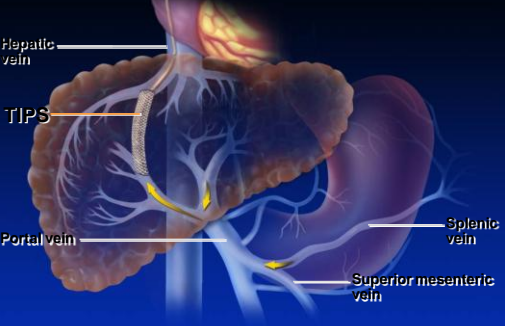
- Octreotide (50 ug bolus → 50 ug/hr infusion)
- Prompt diagnosis with endoscopy
- Band ligation if esophageal varices
- TIPPS for gastric varices or salvage if not endoscopically manageable
- HIGH RISK OF SBP-NEED ANTIBIOTIC PROPHYLAXIS! (3RD GEN. CEPHALOSPORINE)

Endoscopic Variceal Band Ligation

- Bleeding controlled in 90%
- Rebleeding rate 30%
- Compared with sclerotherapy:
 - Less rebleeding
 - Lower mortality
 - Fewer complications
 - Fewer treatment sessions



Transjugular Intrahepatic Portosystemic Shunt



Hepatic vein

TIPS

Portal vein

Splenic vein

Superior mesenteric vein

Secondary prophylaxis against variceal bleeding

- Non-selective beta blockers (nadolol or propranolol-tritrate to pulse 60 and tolerance)
- Serial endoscopic banding Q2-4 weeks until varices obliterated then yearly for surveillance.

Hepatic Encephalopathy

- Neuro-psychological disorder resulting from inability of failing liver to remove nitrogenous waste products of protein metabolism from circulation.
- CLINICAL DIAGNOSIS-ammonia levels do not correlate well with diagnosis or stage of encephalopathy.

Hepatic Encephalopathy Is A Clinical Diagnosis

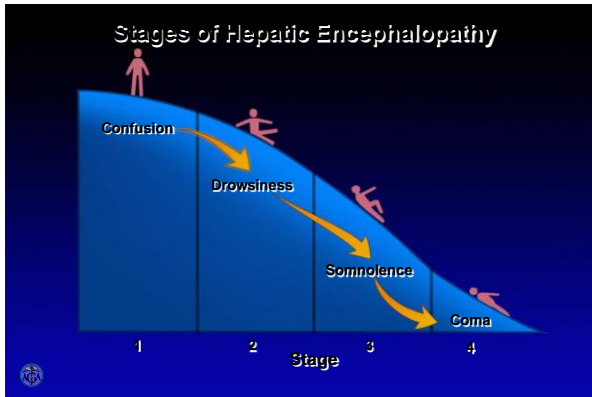
- Clinical findings and history important
- Ammonia levels are unreliable
- Ammonia has poor correlation with diagnosis
- Measurement of ammonia not necessary
- Number connection test
- Slow dominant rhythm on EEG



Asterixis



Stages of Hepatic Encephalopathy



Treatment of Hepatic Encephalopathy

- Identify and treat precipitating factor
 - Infection
 - GI hemorrhage
 - Prerenal azotemia
 - Sedatives
 - Constipation
- Lactulose (adjust to 2-3 bowel movements/day)
- Protein restriction, short-term (if at all)



Antibiotics for hepatic encephalopathy

- Generally secondary agents in lactulose failures
- Work through alteration of gut flora → decreased absorption of nitrogenous wastes.
- Neomycin (500 mg TID)- cheap-theoretical risk of renal toxicity and deafness
- Xifaxan (400 mg TID)-very expensive perhaps safer and more effective.

“Natural benzodiazepines” and Hepatic Encephalopathy

- Activated GABA-ergic tone in H.E.
- Poorly delineated GABA receptor agonists with action similar to benzodiazepines activate GABA receptors.
- Therefore, benzodiazepines ppt H.E. and are contraindicated in cirrhosis.
- EXTREME CARE NECESSARY WHEN TREATING ALCOHOL WITHDRAWAL IN CIRRHOSIS!

Epidemic of Hepatocellular Carcinoma

- Directly related to increased incidence of cirrhosis.
- Cirrhosis “fertile ground” for HCC
- HCV related cirrhosis carries 1-4%/year risk of HCC
- Hepatitis B even higher and virus alone without cirrhosis carries risk (oncogenic)

HCC-Rationale for Screening

- Early tumors potentially resectable (occasionally) and frequently curable with transplantation (Milan criteria).
- Evolving treatments increasingly helpful even if “cure” not feasible (chemoembolization, radiofrequency ablation, cryotherapy)

HCC Screening

- Imaging modalities (US vs. CT vs. MRI)
- AFP-probably not useful but still done.
- Frequency needs to be Q 6 mo to be effective.
- Screen stage 3 and 4 fibrosis patients.
- In hepatitis B, all infected patients at risk and need to be screened.

“Pearls” in management of cirrhosis

- Cirrhosis is clinical diagnosis that rarely requires liver biopsy.
- Low platelet count cirrhosis until proven otherwise.
- $AST > ALT$ = cirrhosis (or alcoholic liver disease)
- Always consider SBP and when in doubt, rule it out
- Avoid benzodiazepines and use extreme care in treatment of alcohol withdrawal in cirrhotics.

“Pearls” continued

- Screen cirrhotics for varices and HCC regularly
- Hepatic Encephalopathy is a clinical diagnosis-ammonia levels not useful.
- Band esophageal varices to obliteration.
- Remember low Na diets in management of ascites.
- Cirrhosis is a catabolic state-low protein diets rarely useful.
- Think about transplantation early in decompensation.

SURGERY AND CIRRHOSIS

- INCREASED RISK OF ANESTHESIA
- INCREASED RISK OF HEPATIC ENCEPHALOPATHY WITH POST-OP PAIN MANAGEMENT
- VERY HIGH RISK IN MAJOR CAVITIES (CHEST AND ABDOMEN)
- CONTRAINDICATED IN DECOMPENSATED CIRRHOSIS UNLESS TRUE EMERGENCY!

HOSPICE AND END STAGE LIVER DISEASE

- APPROX. 50% MORTALITY OVER 2 YEARS
- BENZODIAZEPINES AND OPIATES RELATIVELY CONTRAINDICATED IN CIRRHOSIS → HEPATIC COMA!
- PAIN USUALLY NOT AN ISSUE EXCEPT ASCITES RELATED DISTENSION MANAGED BY TAP AND NOT OPIATES!

PREVENTION BEST MEASURE

- MOST CIRRHOSIS IN WESTERN COUNTRIES IS LIFESTYLE RELATED DISEASE (OBESITY/IVDA/ALCOHOL)
- VACCINATION AGAINST HEPATITIS A AND B
- EDUCATION AND LIFESTYLE MODIFICATION ESSENTIAL
