Management of Chronic Liver Failure/Cirrhosis Complications in Hospitals

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Overview

DX Cirrhosis and Prognosis

Compensated

 Decompensated
Complications Of Cirrhosis

Management Of Complications

1. Ascities/ Peripheral edema
2. Variceal Bleeding
3. Spontaneous Bacterial Infection
4. Hepatic encephalopathy
5. Hepatocellular carcinoma
6. Hepato renal syndrome
Cirrhosis

- Late Stage of hepatic fibrosis distortion of hepatic architecture and formation of regeneration nodules.
- Considered an irreversible in advanced stage
Histology of the Liver
Cirrhosis

- 25,000 deaths and 370,000 hospital admissions
- 9th leading cause of death
- Common final pathway disease progression
  - Chronic Hep C 28%
  - alcohol 20%
  - alcohol + Chronic Hep C 15%
  - cryptogenic (NASH) 18%
  - Hep B 15%
  - Other 5%
- morbidity mortality associated with complication of decompensated disease
Natural Hx of Chronic Liver Disease

CLD → Compensated → Decompensated → Cirrhosis → Death

- Decompensated Cirrhosis Portal HTN
- Jaundice Ascities
- Hepatic encephalopathy
- GI Bleeding
Survivor of Cirrhosis

- Compensated- mean 10 years
- Decompensated- mean 1.5 years (worse than metastatic colon cancer)
Portal HTN

- Healthy liver can accommodate changes in portal blood flow.
- Occurs combination of increased portal venous flow and resistance to portal flow.
Portal HTN

1. Nitric oxide low PV Resistance
2. Cardiac output mesenteric circulation
3. Blood pooling occurs portal circulation collagen deposition. Sinudoidal increased pressure residence
DIAGNOSIS

DIAGNOSIS OF Cirrhosis

PHYSICAL EXAM

1. ASCITIES
2. CAPUT MEDUSA COLLATERAL CIRCULATION
3. ASTERIXIS
4. GYNECOMASTIA, ESTROGEN METABOLISM
5. HEPATOMEGALY
6. JAUNDICE
7. SPIDER ANGIOMA
8. SPLENOMEGALY
Laboratory

1. Low Albumin
2. High Bili
3. Low Platelet count
4. Elevated Pt/INR
5. Liver Fibrosis Score
6. No Need Liver Bx at all times
IMAGING

CT SCAN OF ABD
ASCITIES  NODULAR LIVER

U/S OF LIVER
DETECTS  100CC ASCITIES
# Childs Score

## Classification

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CHILDS CLASS

CLASSIFICATION

CLASS  A  5-6 POINTS
CLASS  B  7-9 POINTS
CLASS  C  10-15 POINTS
MELD SCORE

NO CLINICAL SUBJECTIVITY

LAB EVAL, BILI, CREATININE, INR

CALCULATION

RANGE 6-40 POINTS

3 MONTH SURVIVAL RATES

90% - 7% WITHOUT TRANSPLANT
Ascities

1. Cirrhosis 80% mortality mean 1.6 years
2. Malignancy 10% (ovarian pancreas) mortality mean 20 weeks

1. CHF mortality mean 2 years
2. Dialysis (Iron Infusions) mortality mean 7 months
3. TB
4. Other; Pancreatitis
Ascities

1. Water and Sodium retention
   ○ ascities develops

2. Poor prognosis
   ○ refractory ascities
     ■ 50% survival at 6 months

3. Consider liver transplant
Dx ascities

1. Physical exam
2. Imaging best
   ○ experts on PE: 50% correct
3. U/S detect 100 mls ascities
Diagnostic paracentesis

1. 30-50 ml
2. CHR/ Cirrhosis/ malignancy
3. r/o SBP
Spontaneous Bacterial Peritonitis

1. Paracentesis
   ○ No Contraindication
     ■ High INR if INR>4??
     ■ Low Platelets
   ○ Same Complication rate

2. Complication 1 in 1000
   ○ hemoperitoneum
PARACENTESIS

INITIAL STUDIES  ASCITIC FLUID

1. CELL COUNT  PMN > 250
2. PROTEIN LEVEL,
3. SAAG LEVEL  SERUM ALB - ASCITIC ALB LEVEL
4. CYTOLOGY
5. CULTURE, GRAM STAIN
6. AMYLASE FOR PANCREATIC MALIGNANCY  PANCRATITIS
SAAG

SAAG CALCULATION

SERUM ALB - ASCITIC ALB

1. IF > 1.1 PORTAL HTN, LIVER DISEASE, CIRRHOSIS (LOW PROTEIN), CHF CARDIAC (PROTEIN HIGH), LIVER CANCER
   BUDD CHARI, PORTAL VEIN THROMBOSIS

1. IF < 1.1. NOT PORTAL HTN, PERITONEAL TB, NEPHROTIC SYNDROME
   PERITONEAL CARCINOMATOSIS (HIGH PROTEIN), PANCREATITIS, BILIARY ASCITIES
TREATMENT

MANAGEMENT OF ASCITIES

1. SODIUM RESTRICTION, < 2 GM DAY
2. H2O RESTRICTION IF HYponatremia
3. DIURETICS  LASIX 40 MG ( MAX 140MG], ALDACTONE 100MG ( MAX 400MG)
4. FOLLOW BMP
5. ALDACTONE TAKES 2-3 WEEKS EFFECT
6. CAUTION RENAL INSUFF
ASCITIES

REFRACTORY ASCITIES

1. LARGE VOL PARACENTESIS Q 2 WEEKS, 10-12 LITERS
2. LOW NA DIET COMPLIANCE?
3. ALBUMIN INFUSION IF > 6 LITERS, 25 GM - 100 GM INFUSION
Spontaneous bacterial peritonitis

Pathogenesis: translocation into mesenteric lymph nodes

s/p esophageal variceal banding and bleeding
SPONTANEOUS BACTERIAL PERITONITIS

Symptoms

Fever, jaundice, confusion, abd pain, hypotension

No symptoms

Higher childs class score more likely SBP

S/P ESOPHAGEAL VARICEAL BANDING BLEEDING
Dx of SBP

1. If > 250 PMN’s on paracentesis
2. Culture negative SBP
3. Culture positive but low PMN early SBP recommend RX
Secondary bacterial peritonitis

1. Ruptured DUODENAL ulcer
2. Pyelonephritis
3. Surgery risky but necessary, polymicrobial etiology
Repeat Paracentesis

1. Not needed if improved
2. Repeat if course worsens or not improving
Antibiotic RX

1. Start before culture
2. Cefotaxime ceftiaxone
3. PCN allergy cipro or levaquin
4. RX 5-10 days
Renal dysfunction to SBP

1. Follow creatinine
2. Paracentesis + albumin + antibiotics helpful reduces mortality
3. If variceal bleed give antibiotics + paracentesis + albumin
Hepatic encephalopathy

1. Altered brain function
2. Nitrogenous waste by colonic bacteria
3. Shunting of nitrogenous waste
Types of HE

1. Type A  tylenol overdose
   
   Acute hepatitis no effect with xifaxin or lactulose

2. Type B
   
   Portosystemic bypass / NI Liver

3. Type C  cirrhosis portal HTN , main
   
   RX  XIFAXIN/ Lactulose
Clinical dx

1. Ammonium level ??? no need, elevated in obvious HE later stages
2. Poor correlation with dx
3. Follow clinical response
Stages of HE

1. Stage 0-4
   - Stage 1 drunk
   - Stage 2 drowsy
   - Stage 3 somnolence
   - Stage 4 comatose

2. Stage 0-2
   - Nl levels but + HE
Precipitating etiology of HE

1. GI variceal bleeding
2. TIPS
3. Infections  SBP
4. Constipation
5. Electrolyte imbalance
6. Sedatives
Treatment HE

1. Lactulose - changes PH increase 5.0 ammonia to ammonium
2. Xifaxan 550 BID
3. Rx; precipitating cause GI bleeding electrolyte imbalance
Gastroesophageal varices

1. Present 50% of pt cirrhosis, 40% of child A , 85% of child C
2. Develop rate 8% a year - EGD every 3 years (dynamic process)
3. Risk bleeding 5-15% each year increase with size/ child class
4. Mortality with bleeding > 20% @ 6 weeks
5. Stop spontaneously in 40% patientS
treatment

1. Small varices  B blocker
2. Large varices Banding or B Blocker (old rx sclerotherapy injection)
Acute GI Bleed

1. Octreotide / ICU / IV fluid
2. PPl, ? ulcer or other bleeding site
3. Antibiotics
4. EGD banding in 12 hours ??
5. Correct coagulopathy - vit k - FFP - platelets
6. Failure of endoscopy - TIPS - Balloon tamponade ( old treatment )
7. BRTO (Balloon retrograde transvenous obliteration ) For gastric varices - femoral vein approach
Antibiotics Prophylaxis

1. Improves morbidity and repeat bleeding
2. SBP can occur with variceal bleeding
3. Pneumonia / bacteremia from variceal bleeding
4. Transfusion requirement improved
5. Bacterial infection after bleeding 40% mortality
Renal Injury Cirrhosis

1. Hepatorenal syndrome, dx of exclusion
2. Dehydration pre renal etiology 68% cause of renal dysfunction
3. Survival is decreased with renal dysfunction
4. Hepatorenal syndrome median survival 3 month if not transplanted
REFERENCES

GUT: ACUTE ON CHRONIC LIVER FAILURE; 2017, MAR, 66(3), 541-553


Dr. Steven - Huy Han, lecture on complications of cirrhosis

Kevin kolendich MD, lecture on cirrhosis complication

Dr. Melissa Haines MD, lecture Management of CLD