Liver Transplantation & Chronic Liver Disease for the FRACP 2020

Paul Gow

Victorian Liver Transplant Unit

Austin Hospital

Indications for Liver Transplantation

- To prevent premature death
  - Contrasts with kidney Tx performed for QOL
  - There is no liver “dialysis” machine

LTx indications

- End stage (irreversible) liver failure
  - Life expectancy <12/12
  - Child-Pugh B/C
  - MELD >14
- Hepatocellular carcinoma (UCSF)
  - One HCC <6.5cm
  - ≤3 HCC, ≤4.5 cm diameter
- Irreversible complications of liver disease
  - Hepatopulmonary syndrome
  - Massive polycystic liver disease
- Acute (Fulminant) Liver failure

Severity of Liver Disease

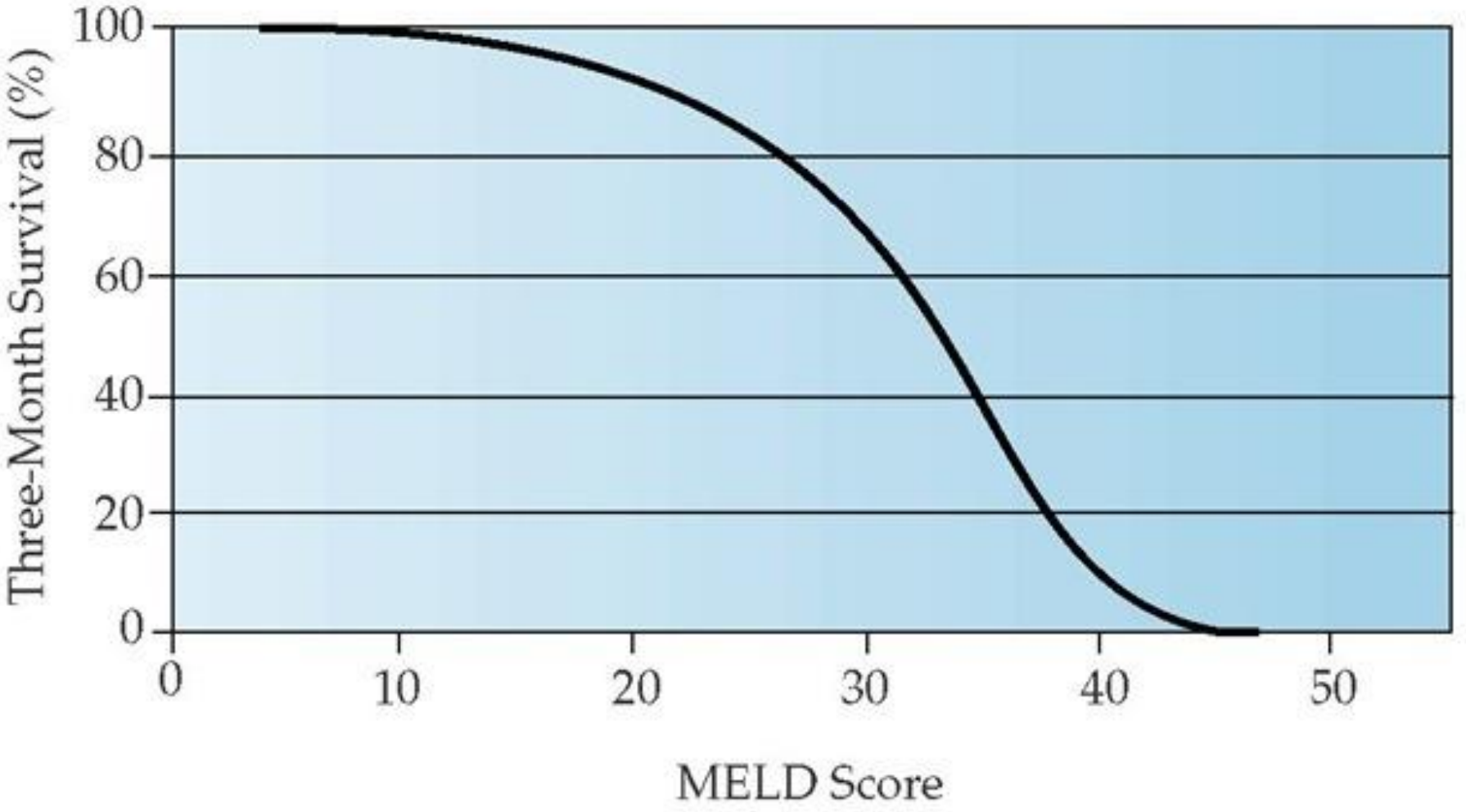
- Child-Pugh
- MELD

Child-Turcotte-Pugh (CTP) Score

	Points		
	1	2	3
Encephalopathy	None	Grade 1-2	Grade 3-4
Ascites	None	Mild	Moderate
Bilirubin	<34	34-51	>51
Albumin	>35	28-35	<28
INR	<1.7	1.7-2.3	>2.3

Child's A: 5-6 points
Child's B: 7-9 points
Child's C: 10-15 points

MELD


Three-Month Survival (%)
100
80
60
40
20
0
0
10
20
30
40
50
MELD Score

Cirrhosis

Compensated cirrhosis

- Liver doing its basic jobs fine
- Liver has impaired reserve
- With an insult patients can move from compensated to de-compensated cirrhosis

Decompensated cirrhosis

- =liver failure
- Inability of the liver to perform its basic functions
- Patients jaundiced, impaired clotting, confusion, ascites

Alcohol & Tx

- General rule is need >10 units alc/day for >10 years to get advanced liver disease
- If < 10u and advanced liver disease may have co-factor or alternative Dx
- In Australia need >6/12 abstinence before can be considered for LTx
- Majority of people with advanced liver disease from alcohol re-compensate when they stop drinking

Taking an alcohol history

- Ask what they were drinking 5 years ago
  - Before they were ill
- Ask about drink driving
  - A marker of pathological drinking
- Get a collateral Hx
  - Partner
- Have you ever tried to give up?
  - Rehab/failed attempts
- Screening for compliance with abstinence
  - Urine ETG

Alcohol – the 6 month rule

- Failure to re-compensate raises the issues of an alternative diagnosis
  - Inadequate nutrition
    - Massive issue
  - Pancreatic dysfunction
    - Fecal elastase
  - Ongoing alcohol
    - Urine ETG
  - Secondary liver pathology
    - NASH (really common)

Liver Transplantation and ALD
Psychosocial factors

Good

- Supports (spouse, family, friends)
- Abstinence > 6/12
- Compliance with medical care
- No illicit drug use
- Insight

Bad

- Few supports
- Illicit drug use
- Previous failed attempts at abstinence
- Poor compliance with medical care
- Poor insight

Indications in Australia

- HCC
- NASH
- ALC

- Other
  - PBC
  - PSC
  - AIH

Liver Failure Management

- Treat underlying liver condition
- Nutrition
- SBP Px
- HCC Screening
- Variceal surveillance
- BMD

Liver Failure Management

- Treat underlying liver condition
  - Alc – stop drinking
  - HBV – entecavir/tenofovir
  - HCV – DAA rx
  - PBC – urso
  - Etc/etc

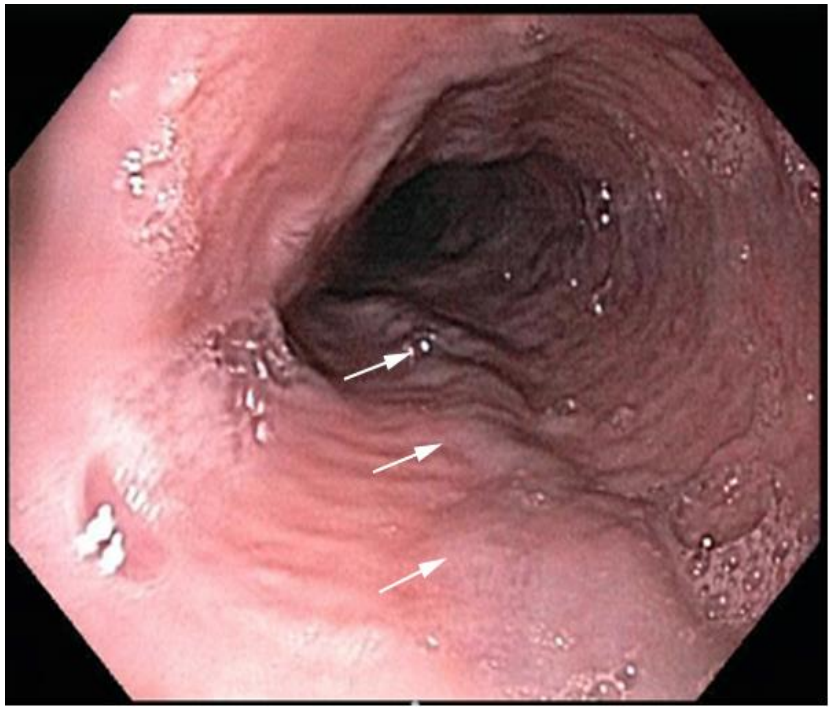
Liver Failure Management

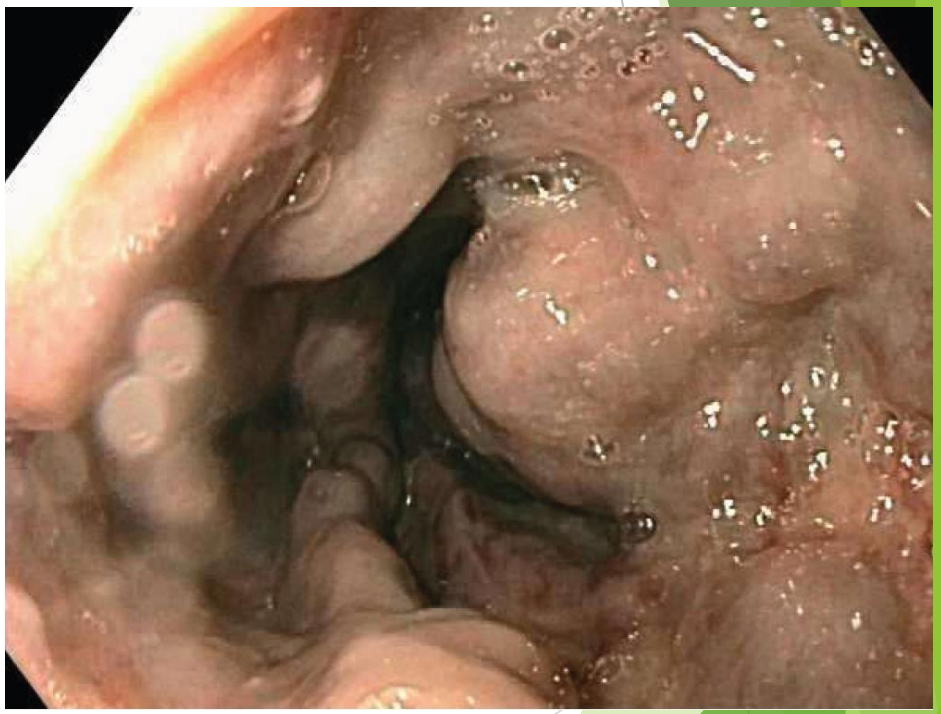
- Varices

- Gastroscopy at Dx
- Risk factors for bleeding
  - Child-Pugh score
  - Endoscopic stigmata

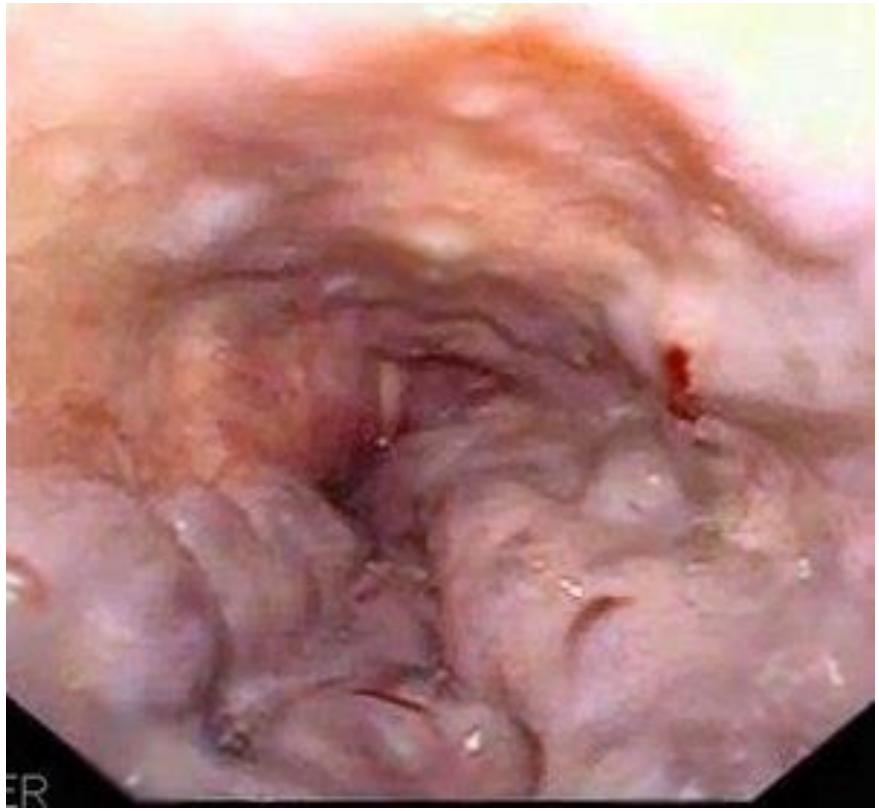
  - Primary Prophylaxis for high risk patients
  - BB (propranolol) or Banding

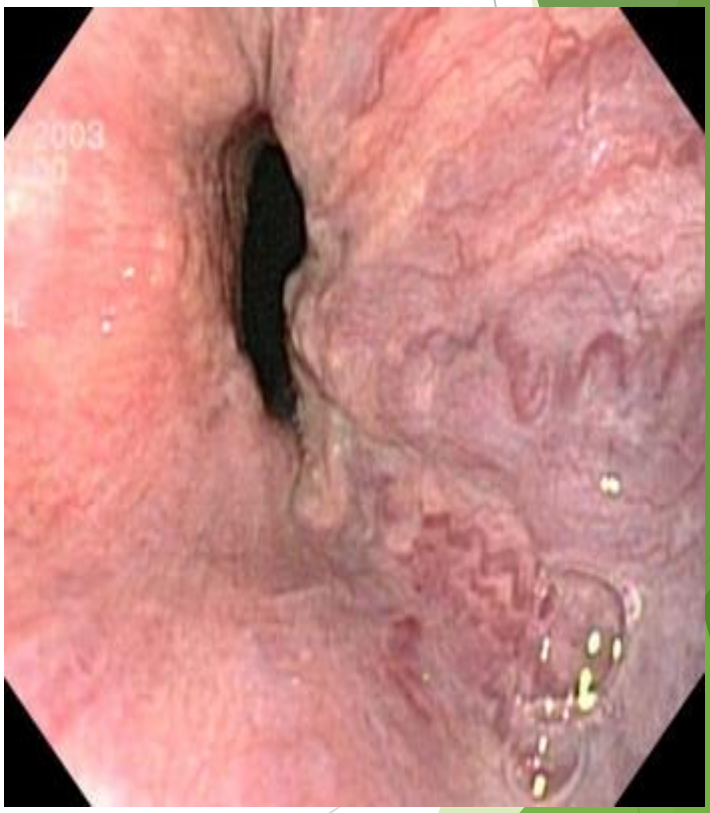
Risk factors for Bleeding
Variceal size





Risk factors for Bleeding Stigmata





Liver Failure Management

HCC Screening

- 6/12 Liver US
- If new lesion <1cm
  - Repeat US in 3/12

- If new lesion >1 cm
- Quad phase CT (&/or MRI)

- HCC diagnosed by CT (or MRI) imaging characteristics
- Bx only required if imaging inconclusive

Liver Failure Management

SBP Px

- Norfloxacin (400/d) or Bactrim (DS 1/d)
- For all with clinically significant ascites (or Bil >50, low ascites albumin)
- Continue until ascites resolved
- Associated with improved survival

Liver Failure Management

Nutrition

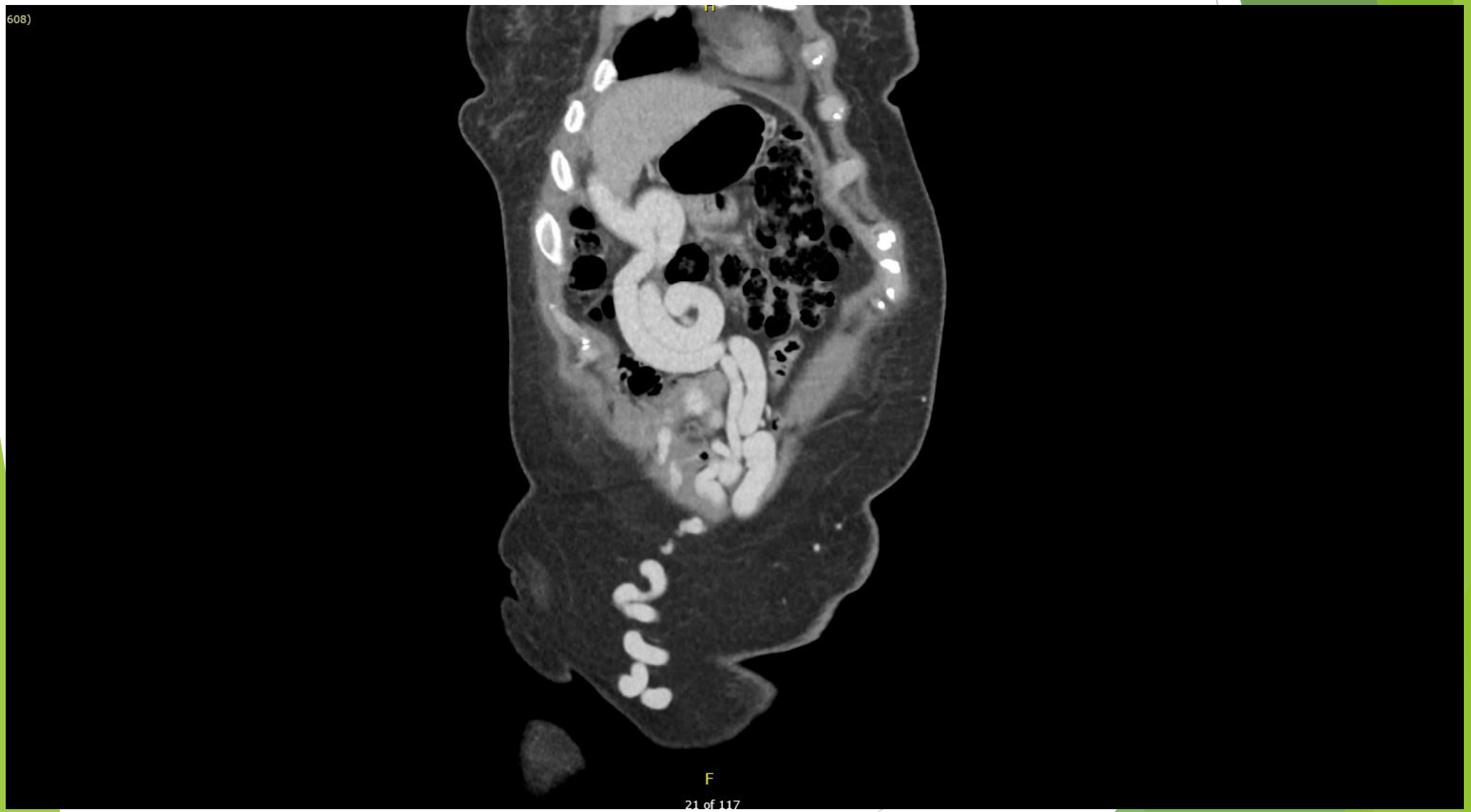
- Sarcopenia (independent of MELD) risk factor for death
- High protein/High calorie diet
  - Don’t limit protein even if severe HE
- Dietician input
- Fecal elastase
- May need NG feeling
- Fat soluble vitamin deficiency
- Evening snack
  - Limits fasting induced catabolism due to impaired hepatic glycogen reserves

Management of complications of liver failure

Hepatic Encephalopathy

- Treat precipitants
  - Constipation/Dehydration
- Lactulose (titrated to 2-3 BA/d)
  - Or alternative laxative
- Rifaximin
  - If HE on lactulose
- Embolisation of large portosystemic shunt
- Tx

Large porto-systemic shunt



Ascites

- Low salt diet (fluid restrict)
- Diuretic
  - Aldactone, if hyponatraemia or response insufficient response add frusemide
- TAPS
  - Done with 100ml 20%/2L
- TIPS
  - CIx poor liver function, PHx HE, older age
- Tx

Variceal Bleeding

- Pharmacological Rx
  - Octreatide or terlipressin
- Urgent endoscopy
  - Banding
- Cautious resuscitation
  - Hb to 7
- FFP/Platelets no benefit
- Antibiotics for 5 days
  - Ceftriaxone or norflox
- Secondary prophylaxis
  - Banding until eradicated (every 2-6 weeks) and BB until eradicated

Liver Failure Management

- BMD
  - Osteopenia/Osteoporosis
    - Treat as per normal.

Coagulopathy

- Often partially reversed with Vit K 10mg/d (Iv or o)
- Especially if cholestatic liver disease and recent antibiotics
- Vit K synthesized by enteric flora

Pruritus

- Aetiology unclear
- Usually generalised or limbs
- Worse when warm (end of day)

- Mx
- Cool shower before bed
- Light bedding
- Questran
- Rifampicin
- SSRI
- Naltrexone

Transplantation

- State based centres
- Gastroenterologist referral
- Tx physician assessment
- MDM formal assessment
  - Medical
    - Are they fit enough for the operation
  - Psych/SW
    - Will be the compliant with long term follow up

Wait list

- Organs matched by blood group/size
- Recipients prioritized by MELD (cr/bil/INR)
- Mean wait 6-12/12
- Wait list mortality 10%
- 1 year survival 95%, 5yr 80%, 20 year 50%

Immunosuppression

- Lots of immunosuppression early
- Tolerance from as early as 2/52
- Slow weaning of IMS from then

- Tacrolimus/MMF/Steroid
  - Wean medication causing most side effects
  - Evero/Siro also an option (esp if renal impairment)

- PJP/CMV Px as per other solid organs

Liver Tx complications

- General surgery Cx
- Bile duct anastamotic stricture
- PSC like syndrome
  - (late Intra-hepatic bile duct scarring)
- ACR
  - Usually early (<2/52) or later from XS weaning of IMS
  - Presents with cholestasis
  - Dx – Liver Bx
  - Rx – pulse MP and increase baseline IMS

Liver function tests

- Deep understanding essential from clinical exam
- DDx low albumin
- Liver function tests:
  - Bil/ALB/INR
  - Importance of isolated bilirubin
  - AST (also from muscle)
  - AST/ALT ratio
    - Associated with cirrhosis

Liver Screen
Causes of CLD
(Gow's rule of 3's)

- Alcohol, HBV, HCV
- Genetic: Wilson's disease, Haemochromatosis, A1AT defic
- Auto-immune: Primary biliary cirrhosis, primary sclerosing cholangitis, Autoimmune hepatitis
- Other: NASH, drugs, budd chiari syndrome

Good Luck