HEPATOCELLULAR CARCINOMA

Epidemiology:
Age: peak at 70 || Gender: M|| Incidence: rising (screening, cirrhotics survive longer)
90% of liver malignancies

Aetiology:
90% cirrhosis/10% non-cirrhotic

1. Cirrhosis(90%)
2. Viral: HBV commonest, HCV, HIV
3. Aflatoxin B1: *aspergilus flavius* in poorly-stored crops → p53 suppression/synergises with HepB
4. Alcohol: hepatotoxic + synergisis with viral/metabolic causes
5. NAFLD: synergistic
6. OCP
7. Metabolic liver disease: Wilson's/haemochromatosis/a1ATD/tyrosinaemia/hypercitrullinaemia/glycogen storage dis

Pathology:
Microscopic dysplastic foci: 1mm foci of dysplastic hepatocytes
Dysplastic nodules: nodules <2cm with dysplasia but no histo criteria of malignancy (low and high grade)
Angiogenesis (differentiates HCC from regenerating nodules/mets)
Macro: solitary/multinodular/diffuse/infiltrating
Micro:
Spread: Local (biliary→jaundice; vascular into PV→ portal hypertension or HVs→ peripheral oedema)
Nodes (non-cirrhotics>cirrhotics)
Mets (lung + others)

Clinical features:
Symptoms: pain/jaundice (esp biliary invasion)/N&V/weight loss/ankle swelling/abdo distension/SOB
Signs: Liver disease signs + malignancy signs + mass + jaundice/portal hypertension + mets (pleural effusion/ascites)

History
Pc: symptoms/screening/incidentaloma
HPc: Liver mass (pain, N&V, jaundice, peripheral oedema, ascites) + costitutionals of cancer + mets (SOB/abdo distension)
PMHx: Liver disease (cirrhosis, metabolics, NALFD)/Causative diseases (cirrhosis, viruses, alcohol, metabolic)
Medx: OCP/injectables/EtOH
SH: exposure to poorly-stored crops
FHx: liver diseases and cancers

Examination:
General: cancer evidence + liver disease stigmata + portal hypertension + jaundice
Abdo: Mass + ascities
Other: pleural effusion/peripheral oedema

Investigations:
1(a)Diagnose HCC (b)Staging 2. Liver disease/causative factors
Bloods: FBC/U&E/LFTs/Coag + **aFP** + HepB/C/HIV/aspergillus/iron/copper/a1ATD *aFP >400 is 95% diagnostic; 20% HCC don't produce aFP*
Imaging: (a)Diagnostic= US/CT Liver(arterially-enhancing lesion with delayed washout)/MRI Liver (b)Staging= CTTAP

Management:
1**. HCC**: extent of liver invasion ie portal vein/biliary 2. **Liver disease** 3. **Mets**

Normal liver:
Resection (2cm margins) + lymphadenectomy
6mthly CTTAP/aFP follow-up

Cirrhotic liver:
Number of lesions/liver function, bili and portal pressures
Resection: anatomical resection (2cm margins) up to Child-Pugh A only
Transplant: Child-Pugh A/B; HCC confined to liver without invasion (removes all cancer and liver disease, let's go champ)
TACE: Child-Pugh A/B with multiple nodules (chemo into tumour + embolize feeding artery on way out)
RFA: small/few nodules in Child-Pugh A/B but unfit for surgery
Sorafenib: advanced tumours in advanced cirrhotics (targets VEGFR 2+3/PDFB

BARCELONA BCLC CLASSIFICATION

0 Child-Pugh A + single lesion 2cm + normal portal pressures/bili → resect

A Child-Pugh A/B + 1 lesion 3cm/3 nodules → RFA (unfit) or transplant (fit)

B Child-Pugh A/B + >3 nodules → TACE

C Child-Pugh A/B + advanced(inc. PV invasion) → Sorafenib

D Child Pugh C + advanced → palliative care

SCREENING
Who: Cirrhosis + Hepb/C/HIV/haemochromatosis/Wilson's disease
What: aFP + US
When: 6mthly

COLORECTAL LIVER METASTASES

Investigations:
Bloods: LFTs/**CEA** + routines
Imaging: **CT Liver** (hypoattenuating cf HCC)/**MRI Liver** (characterise small lesions)
CTTAP (staging)
Other: ensure **colonoscopic** surveillance up to date (?recurrence of primary)

MANAGEMENT

Neoadjuvant therapy
FOLFOX 3mths +/- cetuximag (k-ras wild type) →downstage for resection
Portal vein embolization: embolize affected lobe to induce hypertrophy in FLR

Resection
Resectability: (i)**R0** possible without marked extrahepatic disease.invasion
(ii)**2 adjacent** segments spared/**20%FLV** in normal, **40%** if diseased
Improved resectability: **PVE**/**staged** resection/hybrid ie **RFA** with resection
Extra-hepatic disease: isolated resectable/ablatable mets in lung don't preclude treatment

Unfit/unresectable:
RFA(bleeding/sepsis/biliary injury)
Best supportive care otherwise (pleural effusion/ascites; analgesia difficult as impaired liver function; nausea)

Follow-up
Liver: 6 monthly clinical **assessment/CEA** for **5yrs** (no imaging) → *60% recur, usually in first 2yrs*
Colorectal cancer: follow-up synchronously

Raised CEA= (i)Recurrence of liver or colorectal → MRI liver/colonoscopy(ii)nodes→PET (iii)mets →CTTAP
Colon: Colonoscopy || Liver: MRI Liver || Staging: CTTAP + PET + bloods
Treatment: **NA-Chemo** then r**esect** if FLV>20% healthy/40% diseased