



Primary liver malignancies

Miriam Habib

Tumour**Cell of origin**

Hepatocellular carcinoma (80-90%)

Hepatocytes (diseased liver)

Fibrolamellar HCC

Hepatocytes (healthy liver)

Cholangiocarcinoma (7-10%)

Biliary epithelium

Angiosarcoma (1%)

Vascular endothelium

Cystadenocarcinoma

Biliary epithelium

Primary hepatic carcinoid

Enterochromaffin/APUD

Primary hepatic lymphoma

Lymphocytes

Hepatoblastoma

Hepatocyte precursors

Epidemiology (HCC)

An anatomical illustration of a human torso from the neck to the waist, rendered in a semi-transparent blue color. The internal organs, including the lungs, heart, and liver, are visible. The liver is highlighted in a bright red color, and a white circular spot is placed on its surface to represent a tumor. The background is dark blue.

- 5th most common cancer worldwide
- Higher incidence in Asia. Racial variation
- Male preponderance

Risk factors

Hepatocellular carcinoma

Cirrhosis (HBV, HCV, alcohol, haemochromatosis, alpha 1 AT def)

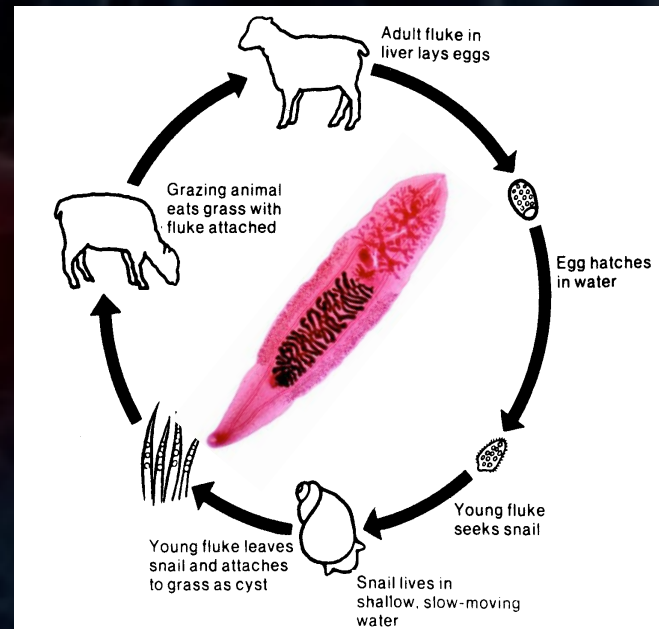
Aflatoxin

Liver flukes

Vinyl chloride

Contraceptive pill

Smoking



Fibrolamellar HCC

?

Cholangiocarcinoma

Cirrhosis, PSC

Angiosarcoma

Vinyl chloride
Thorotrast

Hepatoblastoma

Congenital diseases
FAP

HCC 5-year cumulative risk

HBV cirrhosis	10-15%
Alcoholic cirrhosis	8%
Biliary cirrhosis	4%

Risk falls with reduction in viral titre

Symptoms and signs

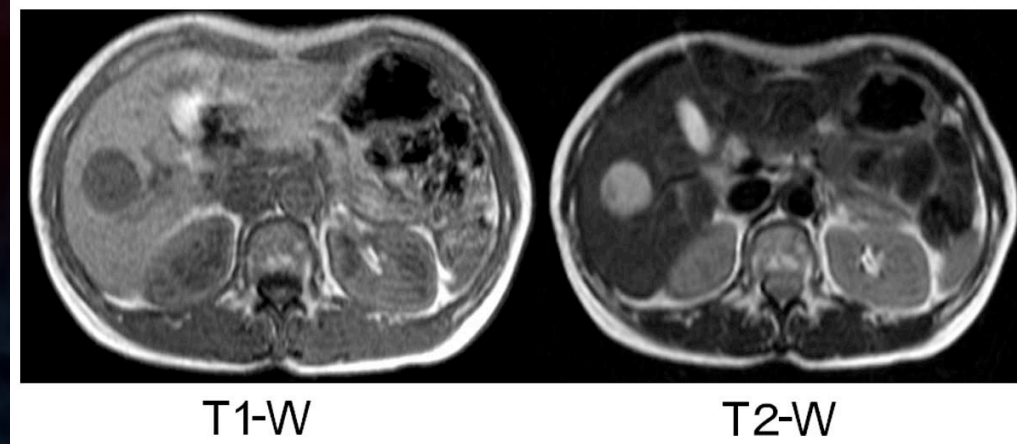
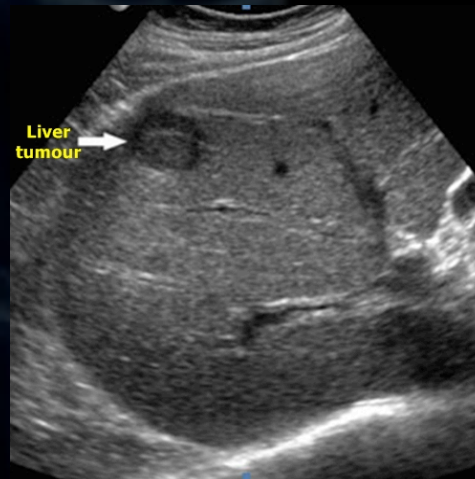
- Constitutional (anorexia, weight loss, malaise, lethargy)
- Abdominal pain
- Abdominal distension (ascites)
- Jaundice
- Hepatic decompensation
- PUO
- Palpable mass
- Paraneoplastic syndrome

Investigation & features

- Routine bloodwork
- Hepatic functional assessment (Child-Pugh, MELD)
- Tumour markers
- Viral markers and titres
- USS
- Triple phase CT
- MRI
- PET
- Tc99 sulphur colloid scan
- Lipiodol scan
- Biopsy?

Hepatic artery supplies HCC

- **USS:** *hypo-*, can be *hyperechoic*. +/- posterior acoustic enhancement
- **CT:** arterial enhancement with washout on delayed phase
- **MRI:** T1 hypointense, T2 hyperintense. Contrast enhancement as with CT



HCC vs adenoma vs haemangioma



FNH vs fibrolamellar HCC



HCC staging

2 diseases: cancer + underlying cirrhosis

- TNM is pathological, not functional. Doesn't alone predict survival, so

+

performance and functional assessment

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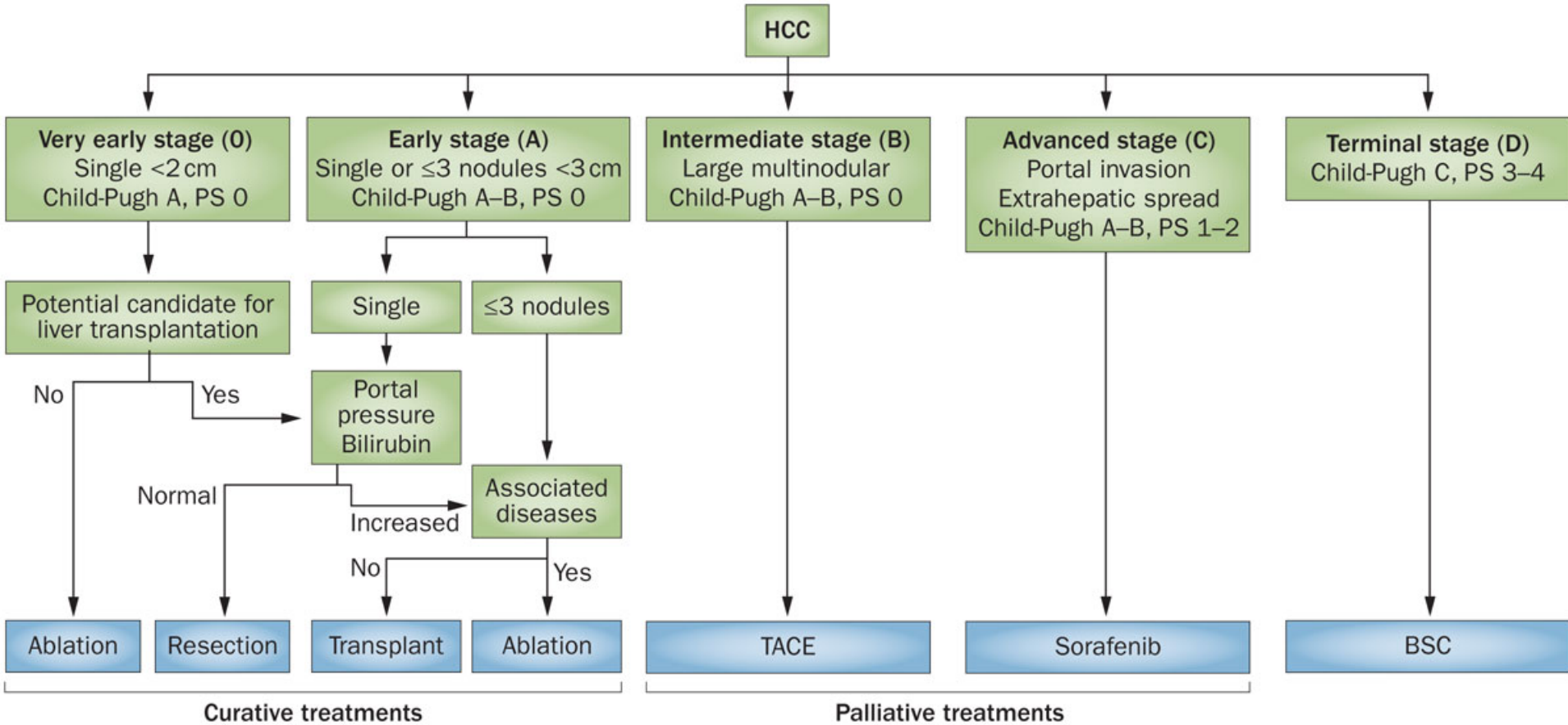
- Alternative classification systems, eg.:
 - Barcelona Clinic Liver Cancer (BCLC)
 - Cancer of the Liver Italian Program (CLIP)
 - Okuda

Table 1 Comparison of HCC staging systems

System	Tumor factors					Liver factors					PS
	Size	Nodes	Met	PVT	AFP	CTP	Alb	Bili	ALP	Ascites	
TNM	✓	✓	✓								
Okuda	✓						✓	✓		✓	
BCLC	✓		✓	✓		✓		✓			✓
CLIP	✓			✓	✓	✓					
JIS	✓	✓	✓			✓					
CUPI	✓	✓	✓		✓			✓	✓	✓	
French				✓	✓			✓	✓		✓

Met, metastases; PVT, portal vein thrombosis; CTP, Child-Turcotte-Pugh; Alb, albumin; Bili, bilirubin; ALP, alkaline phosphatase; PS, performance status.

BCLC staging and treatment strategy

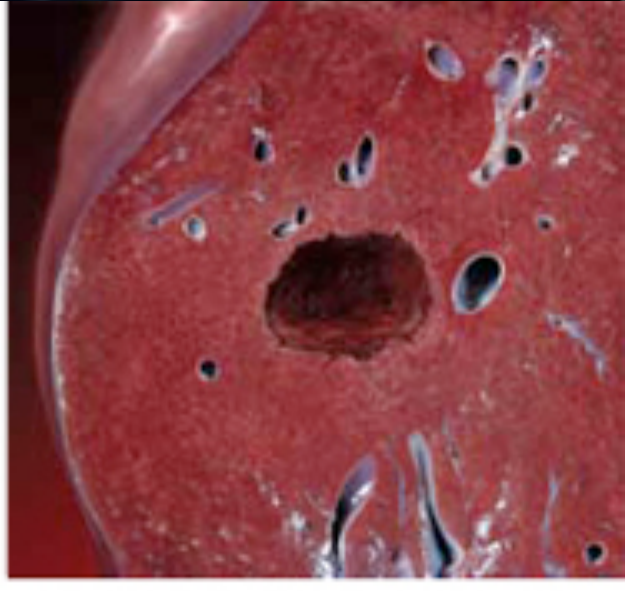
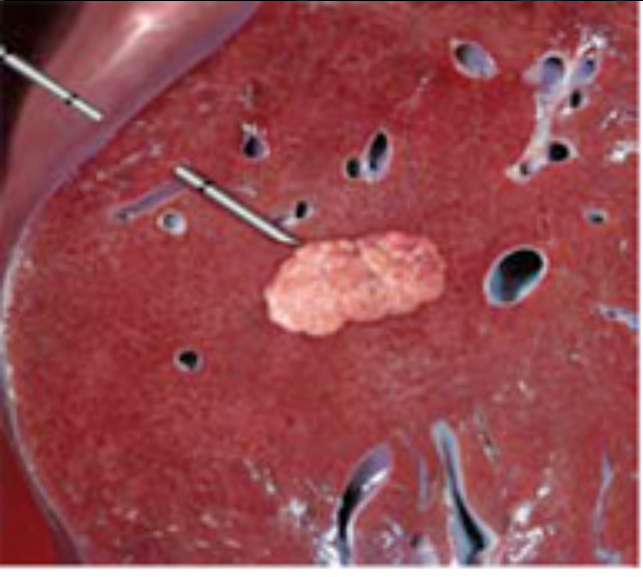


Curative: 5 year survival 50-70% Palliation: 5 year survival 10-40% BSC: survival < 3 months

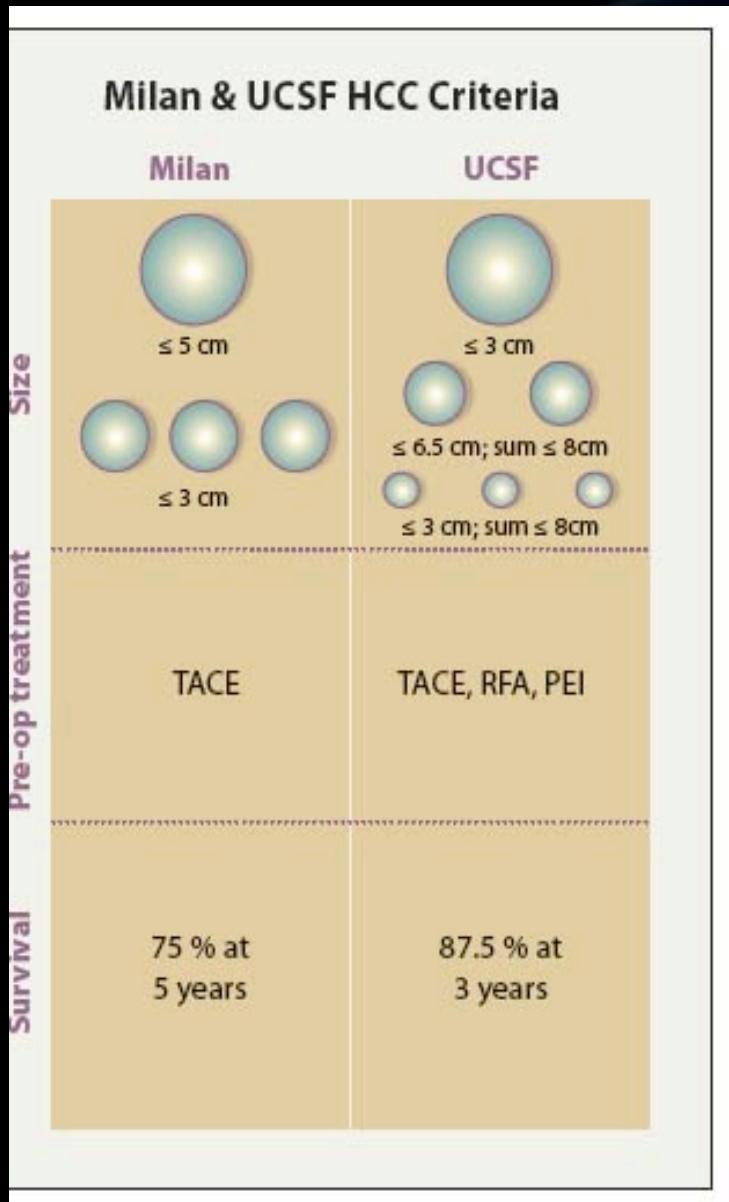
TACE



RFA



Liver transplant for HCC



- Resectable disease, preserved liver function = resection
- Unresectable disease, suboptimal liver function = consider transplant if within Milan or UCSF criteria
- TACE, RFA, PEI useful as bridge to transplant
- Resection as bridge to transplant results in poor outcomes

Angiosarcoma features

- 7th – 8th decade of life
- Male preponderance
- Thorotrast, vinyl chloride, arsenic exposure
- Lung & splenic spread common at presentation
- Rapid progression
- Chemo & radioresistant
- CT: large hypodense heterogenous lesion
- Treat with transarterial embolisation and liver resection

