

# HEPATOCELLULAR CARCINOMA :-

- Malignant tumor derived from hepatocytes
- m.c. cancer in regions  $\bar{c}$  high rate of chronic HBV infection
- Male : female  $> 1$

## # RISK FACTORS :-

### MAJOR Risk factors :- A A B C C

A - Alcohol abuse

A - Aflatoxin

B - HBV infection

C - HCV infection

C - Cirrhosis

} m.c. Risk factor }

### MINOR Risk FACTORS :- H C C in MW

H - Hemochromatosis

C - Cigarette smoking

C - Contraceptives

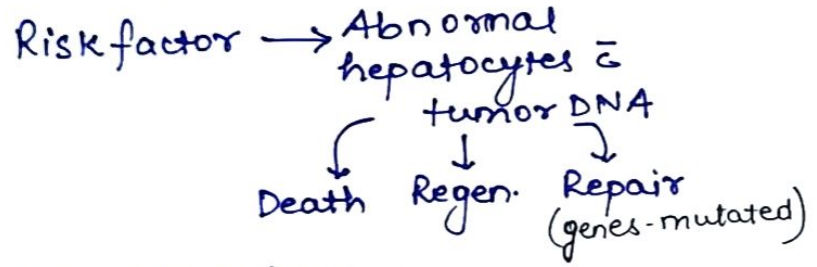
M - Metabolic disorders

W - Wilson's disease

# # PATHOGENESIS :-

## Genetic alteration

1) Mutation in tumor DNA repair gene:-



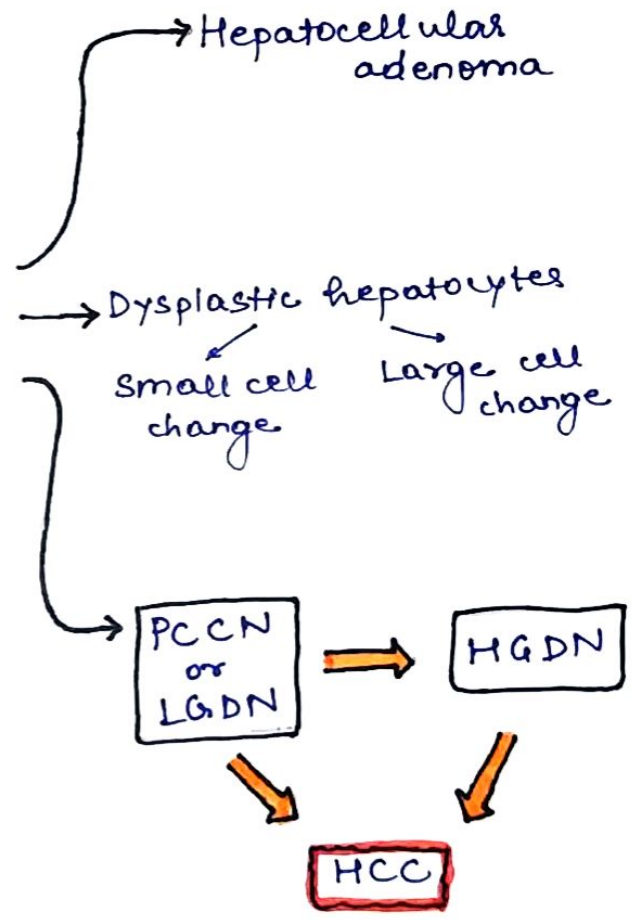
2) Other mutations:-

- KRAS\*
- βcatenin\* (↑ WNT signalling)
- TP53\* (TSG)

## Epigenetic alterations

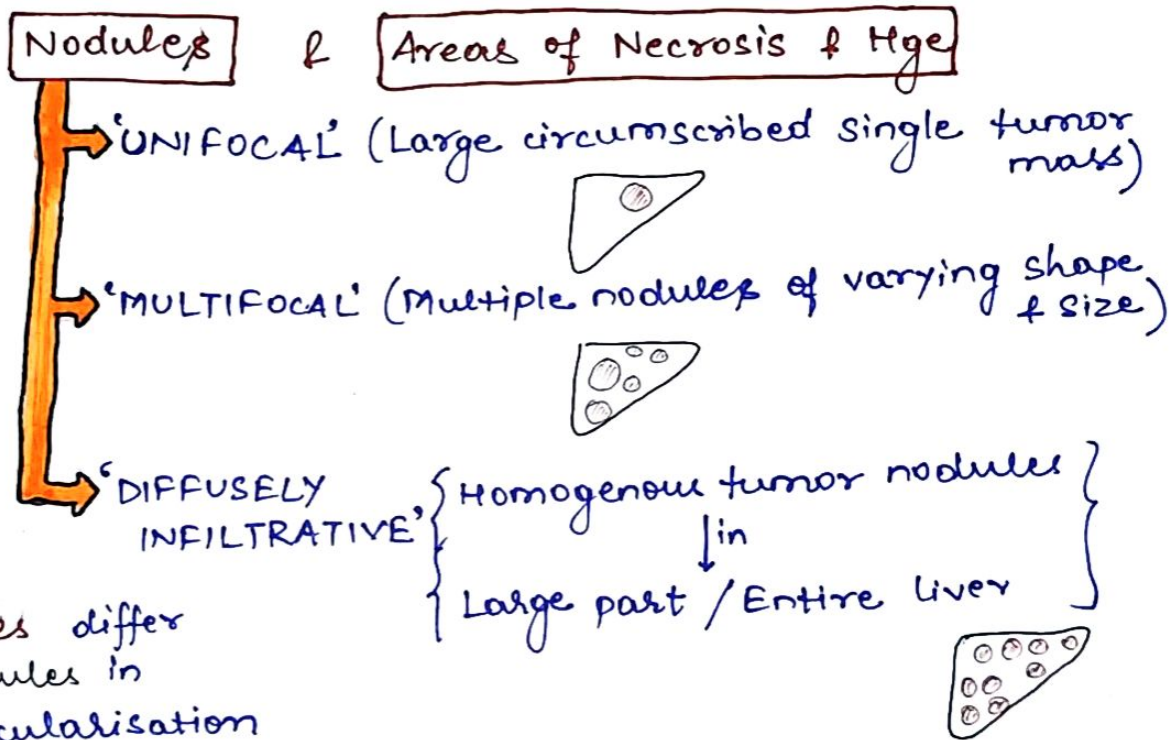
1) MYC amplification

2) Telomerase



# # MORPHOLOGY :-

## Gross :-



\* Dysplastic nodules differ from cirrhotic nodules in size, colour, vascularisation & degree of dysplasia.

\* 'Nodule in nodule' appearance may be seen.

## Colour :-

- Light brown  $\Rightarrow$  D/t Hge
- Yellow white to Gray  $\Rightarrow$  D/t Necrosis
- Greenish brown  $\Rightarrow$  D/t production of bile discoloration by tumor cells

# MICROSCOPY :-

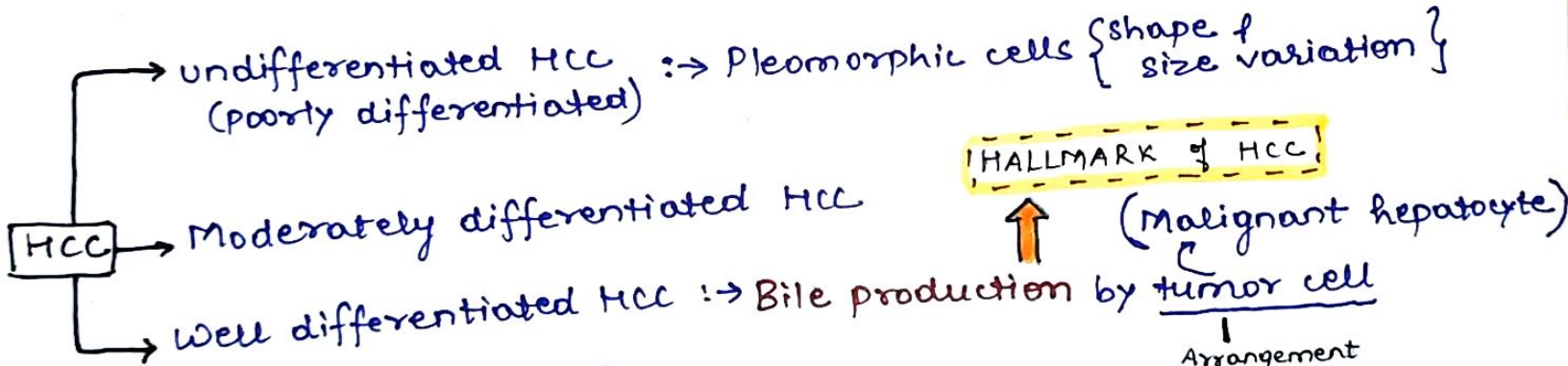
Earliest morphologic alteration

'Large cell change'

'Small cell change'

- Hepatocytes larger than normal
- Enlarged, multiple, prominent nuclei
- No ↑ in N:C ratio

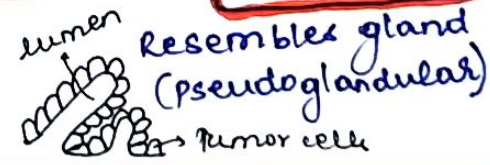
- Hepatocytes smaller than normal
- mild nuclear chromasia pleomorphism
- ↑ N:C ratio



- in form of trabeculae
- polygonal cells
  - Abundant cytoplasm
  - Nuclei (Large, Hyperchromatic, prominent nucleoli)

**Trabecular pattern**

**Acinar pattern**



## # SPREAD OF TUMOR :-

Intrahepatic metastases (Locally)



Hematogenous spread

- portal circulation
- IVC → Rt. side of heart
- Lungs

Lymphatic spread

- portal LN
- perihilar LN
- para-aortic LN

- ### # Clinical features :-
- upper Abdominal pain
  - wt. loss
  - malaise
  - fatigue

- ### # Diagnosis :-
- ↑ AFP
  - (+) • MRI, CT scan
  - ↑ α-L-fucosidase

- ### # Treatment :-
- Surgical resection
  - Liver transplantation
  - Tumor ablation