



EUROPEAN
HIV HEPATITIS CO-INFECTION (EHHC)
CONFERENCE

10–11 December 2015
QEII Centre · London



Pre-conference Nurses' Course



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Mrs Janet Catt

Royal Free London NHS Trust, UK



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COMPETING INTEREST OF FINANCIAL VALUE \geq £1,000:	
Speaker Name	Statement
Janet Catt	
Date	



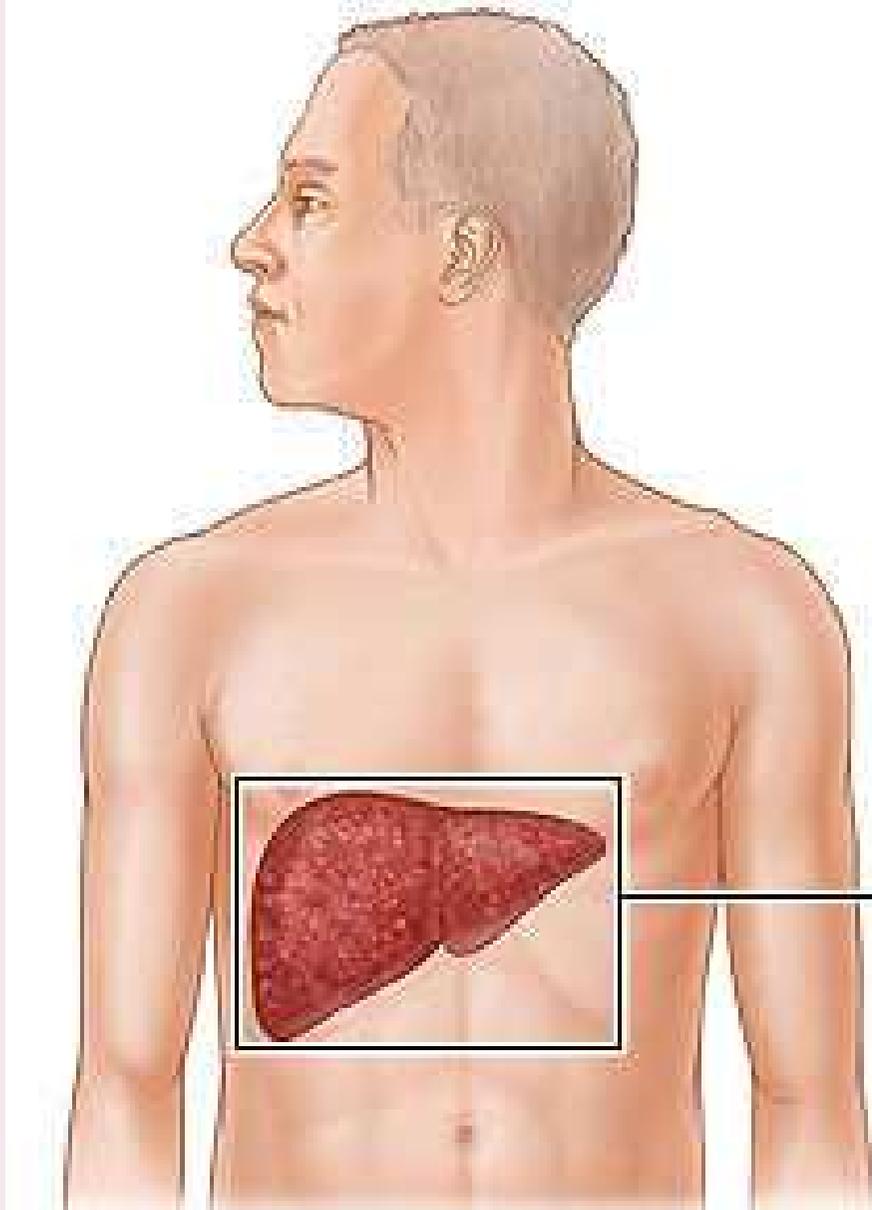


Janet Catt MSc RN
Lead Nurse Specialist Practitioner

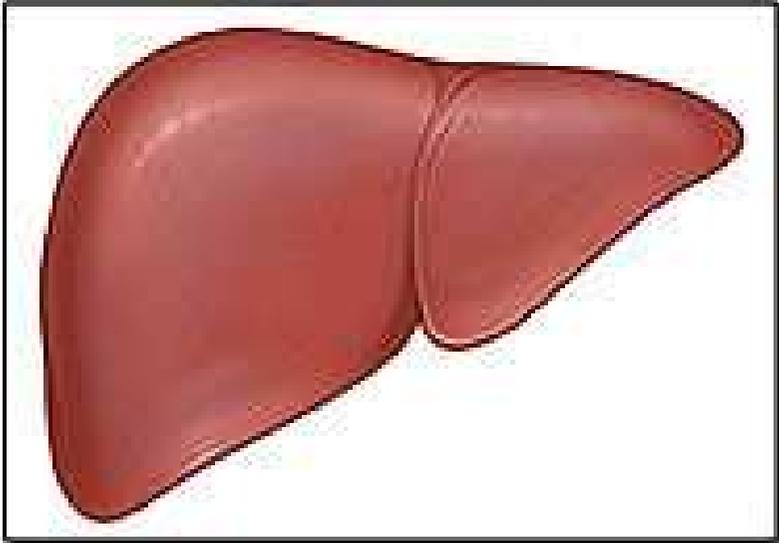
Liver blood tests – monitoring cirrhosis

HIV/HCV coinfection patients

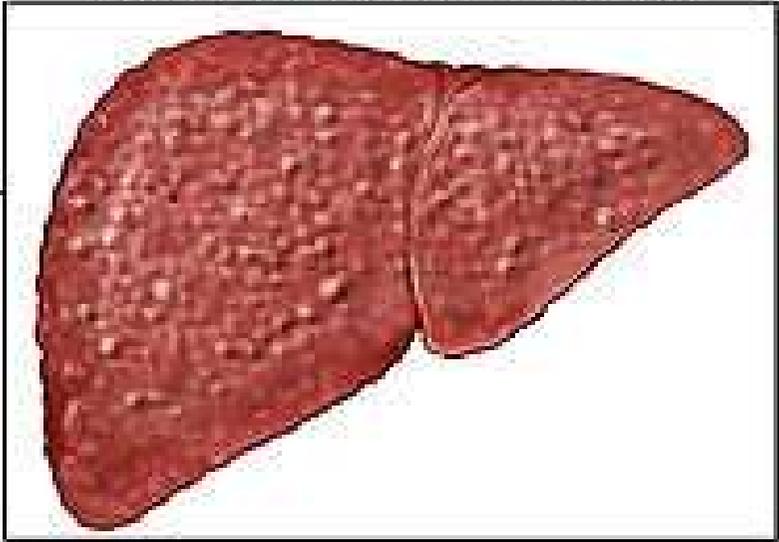
- Liver disease is currently one of the leading causes of morbidity and mortality among HIV infected patients in Western countries.
- HIV/HCV coinfectd patients have a 3-fold greater risk of progression to cirrhosis or decompensated liver disease than HCV mono infected patients (Graham et al 2001)
- The accelerated rate is magnified in patients with low CD4 cell counts
- Cirrhotic patients should be carefully assessed by an expert in advanced liver disease for signs of liver decompensation .



Normal liver



Liver with cirrhosis



A SIMPLE EXPLANATION

- ◉ Blood tests help build a picture of how the liver is functioning.....
However, don't also forget to assess your patient individually....
There may be another explanation
- ◉ ie, holidays abroad to high risk countries
 - Tattoo
 - Drugs, including Chinese herbal remedies
 - recent unprotected sexual intercourse
 - alcohol

- ◉ Liver function tests easily measured as part of routine blood test analysis
- ◉ Detect the presence of liver disease
- ◉ Gauge the extent of known liver damage
- ◉ Follow response to treatment
- ◉ Rarely suggest a specific diagnosis but can categorise as to whether there is damage or destruction
 - directly to liver cells (hepatocellular) or impaired transport of bile (cholestatic)
- ◉ They can further direct evaluation of the patient

ALT / AST (NB: REFERENCE RANGES CAN VARY)

- ◉ **ALT / AST** : Are liver enzymes in liver cells, when injury to liver cells occurs these are released into blood causing amounts in blood to increase
- ◉ **ALT** – mainly found in the liver
- ◉ **AST** – low specificity for liver
found also in heart and other muscles in the body.

Both will be raised in recent liver injury – does not tell anything about residual function capacity

If there is reversal of AST:ALT ratio, and in the context of viral hepatitis this is a very good clue that there is advanced liver disease (but can also occur with Alcohol/NASH)

If levels are decreasing:

- Liver cells are so damaged that there are no more cells to damage
- Improving, and no further damage

GGT (GAMMA-GLUTAMYL TRANSFERASE)

- ◉ Enzyme found mainly in the liver
- ◉ Alcohol makes GGT elevated
- ◉ Can be associated with cholestasis
- ◉ If Alkaline Phosphatase (ALP) is elevated check GGT.....
- ◉ If normal = not associated with liver
If raised = most probably liver related disease

ALP (ALKALINE PHOSPHATASE)

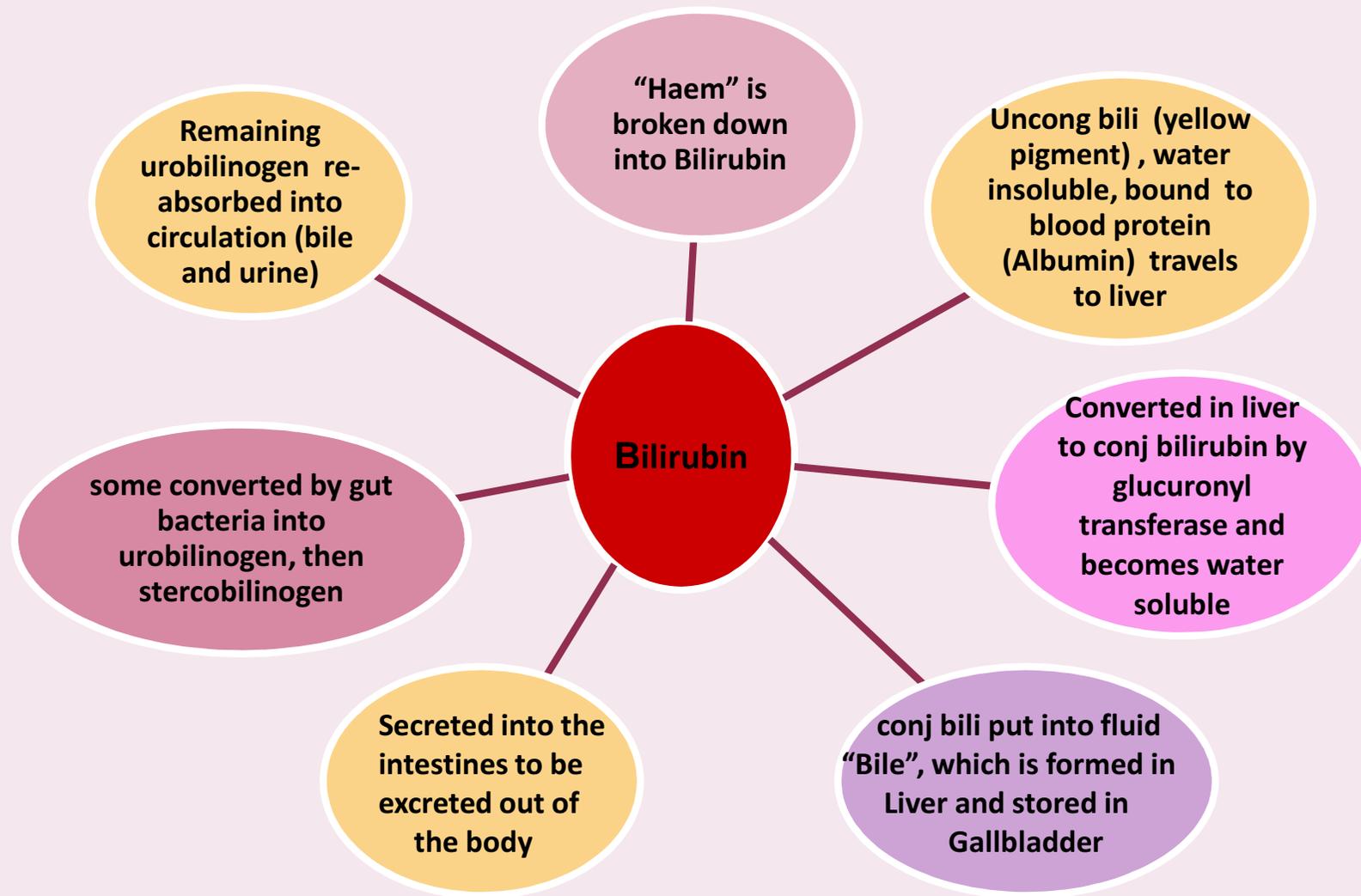
- ◉ Indicated in:
 - 1) Cholestasis - Bile cannot flow from liver to the duodenum.
 - a) bile acids stimulate AFP
 - (b)** Duct obstruction or damage prevents bile acid excretion into duodenum so ALP levels in serum rise significantly
 - 2) Pregnancy
 - 3) Bone disease (bone growth) ie Pagets disease, prostate and breast cancer

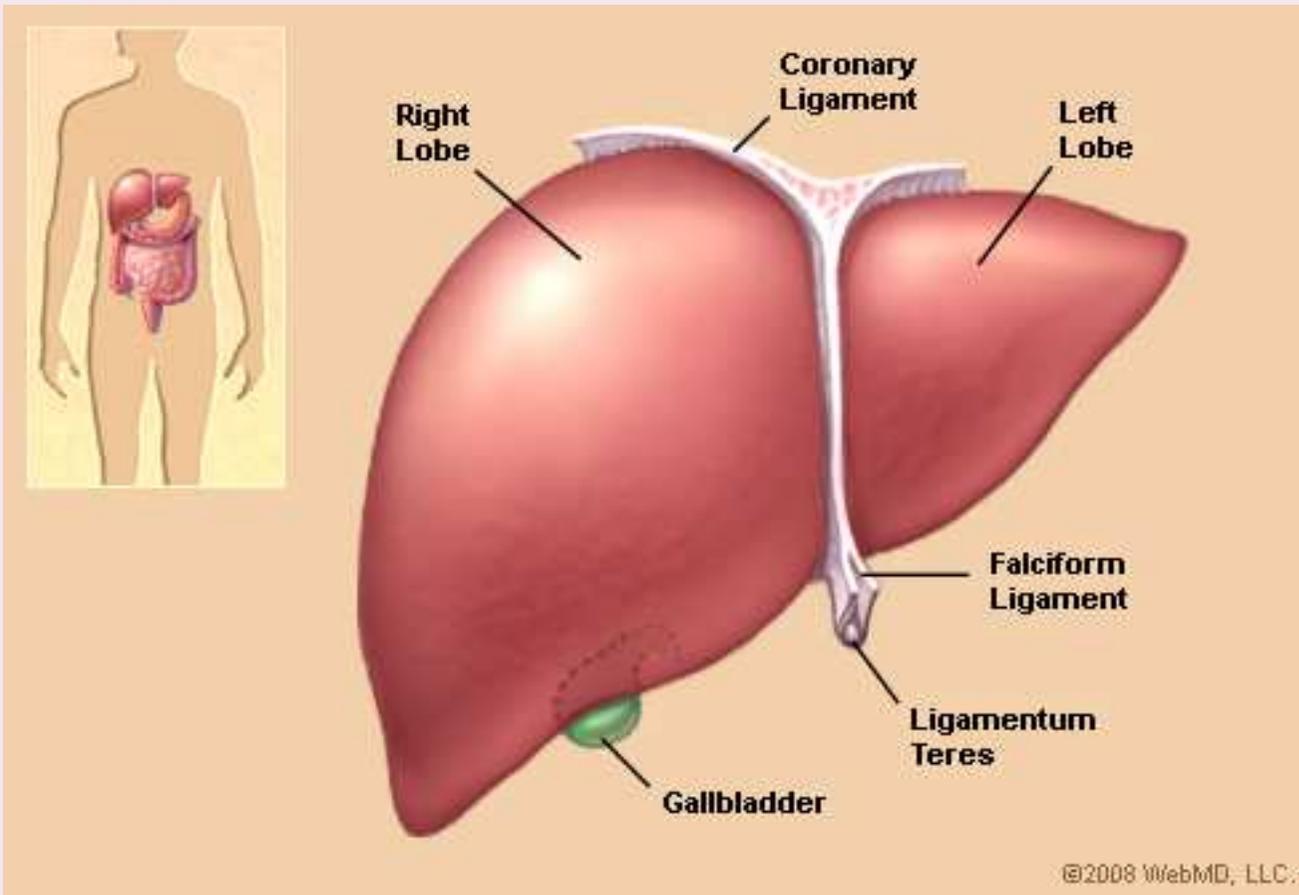
A(ALBUMIN) B(BILIRUBIN) C(CLOTTING FACTORS)

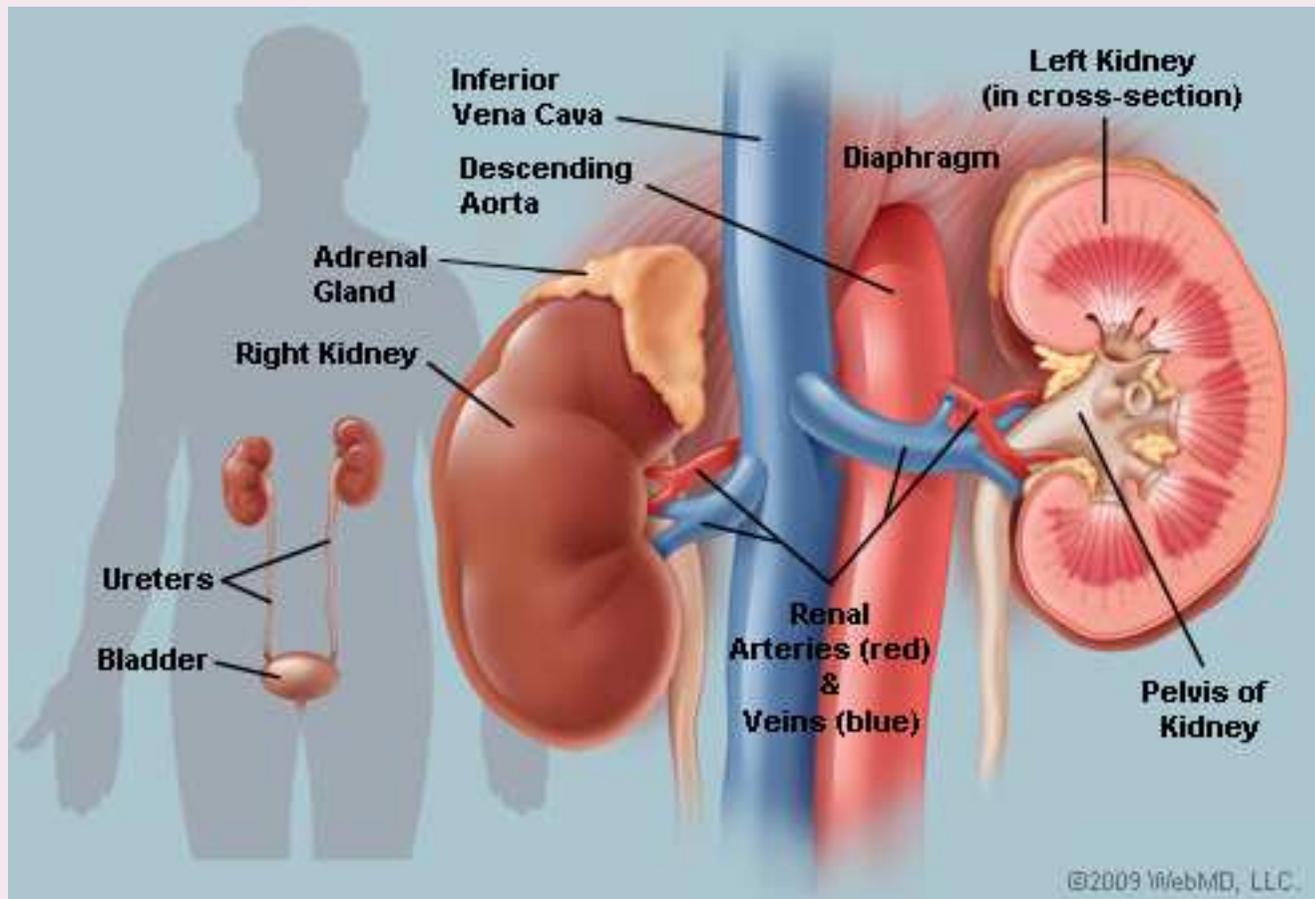
- ◉ **Albumin:** synthesised in liver, a reliable marker of chronic liver injury if decreased.
- ◉ Albumin has a 20 day half life, which means takes a longer time for Albumin to decrease, so usually a marker of chronic disease

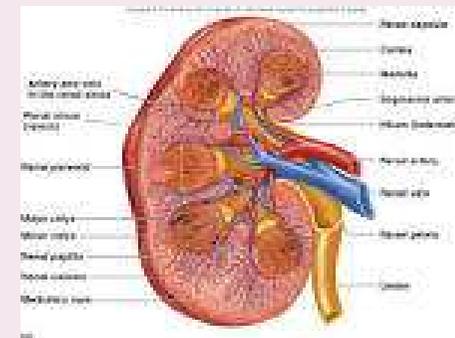
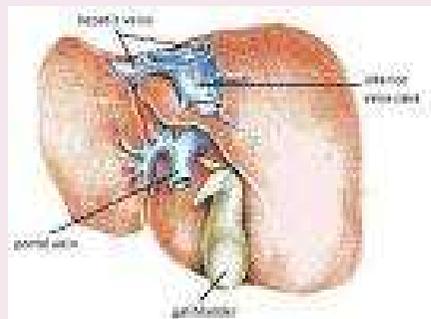
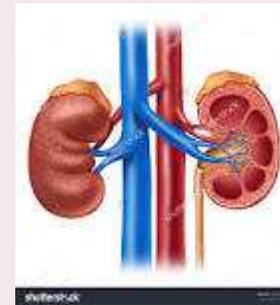
True test of liver function, reflects the liver's ability to take up, process and secrete bilirubin into bile.

(Red blood cells are removed from circulation by the SPLEEN – RBC live 120 days and can travel of a total of 300 miles within our body)









CLOTTING FACTORS

- ◉ PT / INR The most sensitive test for liver disease. A simple measure of liver's capacity to synthesise clotting factors.
- ◉ The first indication that the liver is starting to fail.
- ◉ Requires so many proteins that are synthesised in the liver.
- ◉ If liver not processing, then takes longer for coagulation to occur.
- ◉ PT / INR will start to rise

PLATELETS

- ◉ Low platelets (thrombocytopenia)
- ◉ Enlarged spleen (on liver u/s) – should not be able to palpate a “healthy spleen” – **splenomegaly**
- ◉ Spleen – filters blood (RBC/WBC and platelets)
- ◉ Cirrhosis cause pressure/congestion in portal vein system , and increases blood flow back to the spleen
- ◉ This causes cells to accumulate in the spleen, enlarging the spleen and depleting the platelet count.
- ◉ Remember to also monitor renal function

HIV/HCV co-infection patients with suggestions of advanced liver disease should always be referred to a Hepatologist for further investigation.

Avoid drugs that may cause hepatotoxicity and risk of decompensation – discuss with specialist Pharmacist if unsure

HCC surveillance: liver ultrasound + AFP every 6 months

THANK YOU

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