

Pre-Conference Nurse's Course

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**British HIV Association
BHIVA**

in partnership with

anRS
France Recherche SIDA et SIDA-IV
Initiative
Agence autonome de l'Inserm

ASL
British Association for the Study of the Liver

VHG
VIRUS HEPATITIS GROUP

DAIG
Deutsche AIDS-Gesellschaft e.V.

GEHEP
GRUPO DE ESTUDIO DE HEPATITIS
VIRICAS - SEIMC

SIMIT
Societatea Romana de Malattie Infective
& Tropicale

ASLNF
British Association for the Study of the Liver Nurse Forum

research - education
support - **shps** - research

National HIV Nurses Association

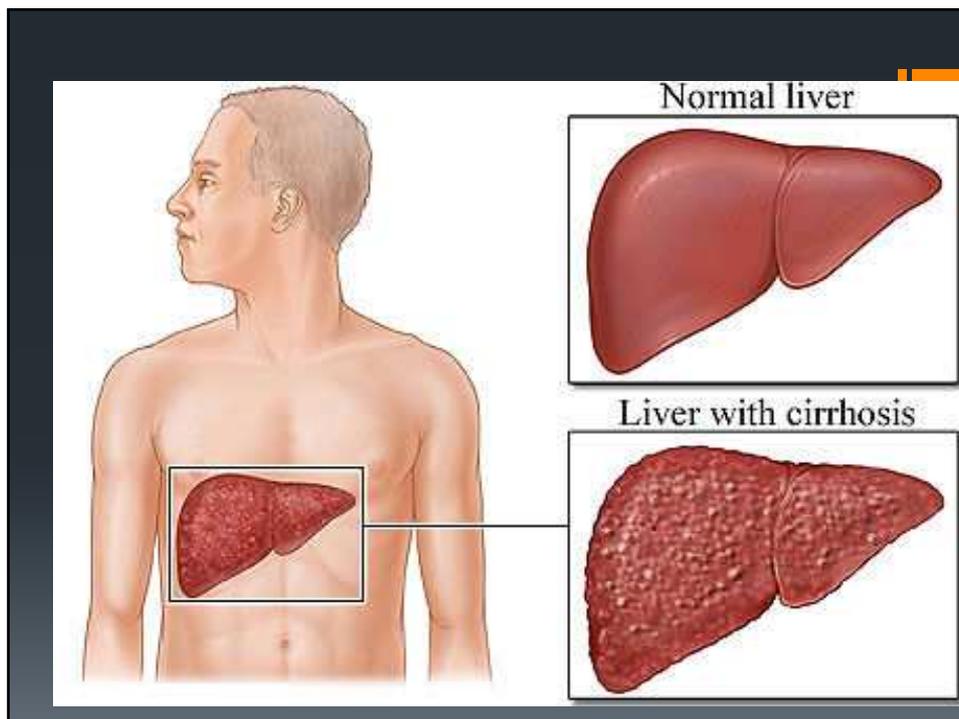




Liver blood tests – monitoring cirrhosis

HIV/HCV coinfection patients

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- Liver disease is currently one of the leading causes of morbidity and mortality among HIV infected patients in Western countries.
 - HIV/HCV coinfecting 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 .



A simple explanation (I hope!!)

- 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

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

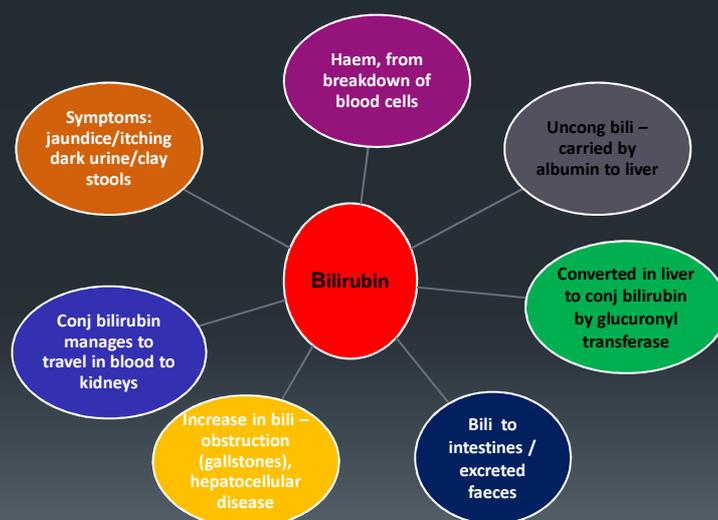
ALP (Alkaline Phosphatase)

- Indicated in:
 - 1) Cholestasis
 - 2) Pregnancy
 - 3) Bone disease (bone growth) ie Pagets disease, prostate and breast cancer
- Elevated ALP can indicate blockage in hepatic duct cells (intra and extra) – the biliary ductal cells will increase ALP if blocked

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.



Clotting Factors

- PT / INR The most sensitive test for liver disease.
- 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

Cirrhotic patients

- If patient shows signs of cirrhosis, with blood tests suggesting advanced liver disease.... Do we need to arrange liver biopsy?.....
- Monitor for complications if evidence of stigmata and blood tests suggest Advanced liver disease

Order OGD to check for oesophageal varices

? For beta blockers

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

If possible, avoid PegInterferon + Ribavirin with cirrhotic patients

HCC surveillance: liver ultrasound + AFP every 6 months



THANK YOU

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