

# HEPATIC FAILURE

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Liver failure usually occurs due to chronic conditions such as cirrhosis or cancer, but can also be a result of toxins, infection, metabolic disorders, sepsis, hypoperfusion and even surgery. The many functions of the liver include: filters/detoxifies blood, produces plasma proteins, converts glucose to glycogen, removes ammonia and produces bile. It also stores glycogen, nutrients and fats.

## L

How will your patient LOOK?

- Jaundiced skin, yellow sclera, palmar erythema, spider nevi
- Distended abdomen due to an enlarged liver and ascites, caput medusae
- Bruising (may be extreme), oozing at IV sites due to coagulopathy
- Muscle wasting, underweight, loss of subcutaneous fat
- Confusion, slurred speech, asterixis (liver flap), poor coordination
- May complain of SOB due to distended abdomen and fluid overload
- Pale or grey-colored stool

## A

How will you ASSESS this patient?

- Neuro assessment, evaluate level of encephalopathy, check for asterixis
- Monitor for increasing ascites and changes in respiratory effort/lung sounds
- Check for bleeding at all puncture sites, Foley catheter, gums, nares, wounds; note that bleeding can occur internally as well
- Monitor urine output closely; alterations in blood flow and blood vessel tone in the kidneys often leads to hepatorenal syndrome which culminates in renal failure
- Keep an eye out for sepsis due to increased risk for infection

## T

What TESTS will be ordered?

- Labs to assess: Hgb, Hct, PTT, PT, INR, bilirubin, AST, alkaline phosphatase, albumin, ammonia, BUN, creatinine, GFR, blood glucose, electrolytes, fibrin, fibrinogen, platelets
- ABG results vary widely; not uncommon to see metabolic acidosis with respiratory alkalosis
- Chest X-ray to assess for pulmonary edema, pleural effusion
- EKG to determine if electrolyte imbalances, hypoxemia, acidosis or cerebral edema are affecting myocardial function
- Abdominal US or CT scan may be performed to assess kidneys and ascites

## T

How will this condition be TREATED?

- Removal of excess fluid to facilitate effective breathing; usually this is a paracentesis to decrease ascites, but can be done for pleural effusion if present
- Give lactulose to decrease ammonia levels and encephalopathy
- Administer Vit K, FFP, platelets to reduce coagulopathies; blood transfusions as needed
- Treat hypoglycemia and electrolyte imbalances as they occur
- Dietary restrictions include fluid and sodium limits to decrease ascites; note that patients who become septic will require fluids which often leads to intubation due to pulmonary edema
- If your patient is well enough to eat they will have very specific needs due to malabsorption, vitamin deficiencies and abnormal nutrient metabolism; small and frequent meals are preferred as patient may have decreased appetite; provide soft foods if esophageal varices are present
- Provide thiamine, folic acid and a multivitamin if patient has a history of ETOH
- Albumin may be given to increase oncotic pressure and intravascular volume
- Dialysis may be indicated if renal failure develops; intubation if respiratory failure occurs
- Reduce ICP with mannitol, elevate HOB, reduce stimulation, correct hypercapnia and hypoxemia, treat fever/infection
- Vasoactive medications may be necessary if hypoperfusion/sepsis present

## E

How will you EDUCATE the patient/family?

- If encephalopathy present, explain need for restraints and any other safety measures
- If ETOH, discuss resources available for patient and family such as AA
- Explain need for frequent interventions and monitoring
- Instruct patient to alert RN if experiencing increased SOB, headache, worsening neurological status
- If referral to a transplant center is appropriate, discuss this option with the patient/family
- Educate patient and family about dietary restrictions as needed
- Educate patient as to the specific cause of their condition and prevention of future complications