Liver cancer (HCC) Algorithm
Please review definition and pathophysiology when using the algorithm

Assess for the presence of risk factors, both major and minor or contributing
Arises in the setting of cirrhosis, appearing 20-30 years following the initial insult to the liver.
25% of patients have no history or risk factors for the development of cirrhosis
Alcohol
Hepatitis B
Hepatitis C
Hemochromatosis:
Aflatoxin, a byproduct of fungal contamination of foodstuffs in sub-Saharan Africa and East and Southeast Asia
nonalcoholic steatohepatitis (NASH).especially associated with DM and obesity
Source: http://www.emedicine.com/MED/topic2664.htm#section~Clinical

- Are Risk Factors Present?
- Negative
- Perform Hepatitis profile if risk is present
- Are positive findings present?
- Potentially unstable?
- Newly diagnosed?
- Follow collaborative plan of care for a client with liver cancer
  - See cirrhosis algorithm
  - See cancer care algorithm
  - Surgical care algorithm
- YES
- NO

Initiate client education for Health Seeking Behaviors to identify:
Maintain ideal body weight and exercise regularly
Don't drink alcohol
Avoid exposure to contaminated blood (see HIV infection)
Avoid hepatotoxins that contribute to cirrhosis
Seek periodic evaluation if you have known risk factors for steatohepatitis
If high risk, AFP monitoring and CT surveillance may be employed to early identify clients at risk
Teach s/s of liver cancer to report

Initiate the plan of care for a Risk for Ineffective Therapeutic Regimen management:
- Review course and progression of disease
- Discuss sites of liver cancer metastasis (lung, portal vein, periportal nodes, bone, or brain) and risk for recurrence.
- Review treatment strategies for cirrhosis; diuretics & paracentesis for ascites, lactulose for encephalopathy, ursodiol for pruritus, sclerosis or banding for variceal bleeding, and antibiotics for spontaneous bacterial peritonitis.
- Teach client about treatment strategies for liver cancer; surgery, chemotherapy, systemic vs. intrahepatic, radiation, tumor ablation
- Note that surgical resection and liver transplantation are the only chances of cure
- Teach client s/s of recurrence and complications; cachexia, pleural effusion, hepatic failure, peritoneal effusions, Variceal bleeding, tumor rupture and hemorrhage
- Review Lifestyle modifications
- Periodic follow-up using LFTs and AFP levels monthly
http://www.emedicine.com/MED/topic2664.htm#section~Treatment

Susan McCabe revised 10/1/08
### Collaborative Problem

#### OUTCOMES/BENCHMARKS:
- No hepatosplenomegaly, no pruritis, no weight loss, no mental status changes, no GI bleeding, no ascites, no edema
- No bone pain or myelosuppression, respiration even unlabored, no focal neurological deficits

#### Potential Complication: Hepatocellular cancer metastasis (mets)

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<th>DO</th>
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| **Perform nursing actions that minimize metastasis**  
*Provide therapy according to stage*  
*Clients may receive, ablation and radiation in addition to surgical resection*  
*Expect client to undergo downstaging with chemoembolization prior to transplantation*  
*Expect chemotherapy in advanced disease*  
*Administers prescribed chemotherapy according to agency protocol*  
*Prepare client for radiation therapy and intrahepatic therapies as ordered & monitor for side effects*  
*Provide cancer care to address side effects of chemo/radiation and surgery, pain, fatigue, nausea, myelosuppression, DVT, depression, caregiver role strain, protein calorie malnutrition, pathological fracture, constipation vs. diarrhea* | **Monitor for presence of Hepatocellular cancer metastasis (mets)**  
*Monitor for elevated LFTs, decreased albumin, and prolonged prothrombin time*  
*Monitor results of liver imaging using ultrasonography, CT scanning, or MRI*  
*Monitor results of biopsy*  
**Additional assessment includes monitoring from presence of complications**  
*Monitor CBC to identify myelosuppression of bone mets*  
*Monitor results of bone scan or bone marrow aspiration if indicated*  
*Monitor chest Xray/CT scans results to identify lesions*  
*Monitor MRI brain results*  
*Monitor for labs indicating acute liver failure*  
*Call MD for s/s of hepatic failure, recurrence, complications of pleural effusion, myelosuppression, variceal bleeding, s/s of peritoneal effusion (Ascites), tumor rupture and hemorrhage*  
*If present, ensure adequate airway, breathing establish IV access and initiate shock management of bleeding is present, provide supportive care and contact ready response team and MD* |

**s/s of metastasis**  
- Lung: pleural effusion  
- Brain: focal neurological deficit  
- Bone: pain, infection, fatigue and bleeding  

**Assess for contributing factors:**  
Cirrhosis, Chronic Hepatitis B/C infection, exposure to hepatotoxins, hemochromatosis  

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