Collecting Cancer Data: Liver

2013-2014 NAACCR Webinar Series

June 5, 2014

Q&A

Please submit all questions concerning webinar content through the Q&A panel.

Reminder:

- If you have participants watching this webinar at your site, please collect their names and emails.
  - We will be distributing a Q&A document in about one week. This document will fully answer questions asked during the webinar and will contain any corrections that we may discover after the webinar.
Fabulous Prizes

Agenda

- Overview
  - Quiz 1
- Staging
  - Quiz 2
- Treatment
  - Quiz 3
- Case Scenarios
Overview

At a Glance

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<table>
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<tr>
<td>Estimated New Cases in 2014</td>
<td>33,190</td>
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<td>% of All New Cancer Cases</td>
<td>2.0%</td>
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<td>Estimated Deaths in 2014</td>
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<td>% of All Cancer Deaths</td>
<td>3.9%</td>
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Number of New Cases and Deaths per 100,000: The number of new cases of liver and intrahepatic bile duct cancer was 7.9 per 100,000 men and women per year. The number of deaths was 5.6 per 100,000 men and women per year. These rates are age-adjusted and based on 2007-2011 cases and 2006-2010 deaths.

Lifetime Risk of Developing Cancer: Approximately 0.9 percent of men and women will be diagnosed with liver and intrahepatic bile duct cancer at some point during their lifetime, based on 2008-2010 data.

Prevalence of this Cancer: In 2011, there were an estimated 45,942 people living with liver and intrahepatic bile duct cancer in the United States.

**Hepatitis**

**Hepatitis C**
- 2.7-3.9 million in the U.S.
- 170 million worldwide
- Chronic Hepatitis C can progress to:
  - Liver failure
  - Cirrhosis
  - Liver Cancer

**Hepatitis B**
- 800,000 to 1.4 million in the U.S.
- 350 million chronic carriers worldwide
- Chronic Hepatitis B can progress to:
  - Liver failure
  - Cirrhosis
  - Liver Cancer

**Fibrosis**
- The accumulation of tough, fibrous scar tissue in the liver.
- As the inflammation and liver injury continue, scar tissue builds up and connects with existing scar tissue.
- If the disease progresses, it can lead to cirrhosis, a condition in which the liver is severely scarred, its blood flow is restricted, and its ability to function is impaired.
ISHAK FIBROSIS SCORE

- Score of 1-2
  - Minimal liver scarring around liver blood vessels
- Score of 3
  - Scarring extended out from liver blood vessels
- Score of 4
  - Scarring that forms “bridges” between blood vessels
- Score of 5-6
  - Extensive scarring or cirrhosis

Cirrhosis

- Healthy liver tissue is replaced with scar tissue
- Scar tissue blocks the flow of blood through the liver
- Slows the processing of nutrients, hormones, drugs and naturally produced toxins

http://www.keepuhealth.net/cirrhosis-of-the-liver-information-and-treatment/
Lymph Nodes

- Liver
  - Hilar
  - Hepatoduodenal ligament lymph nodes
  - Hepatic artery
  - Portal vein

Lymph Nodes

- Intrahepatic bile duct
  - Different for the left and right lobe
  - Hilar
  - Gastrohepatic (left lobe)
  - Periduodenal (right lobe)
  - Peripancreatic (right lobe)
  - Inferior phrenic nodes
Distant Metastases

- Common metastatic sites for hepatocellular carcinoma include...
  - Lung
  - Abdominal lymph nodes
  - Peritoneum
  - Bone

Primary Site

- C22.0
  - Liver
  - Hepatic, NOS
- C22.1
  - Intrahepatic bile duct

http://www.aokainc.com/liver-anatomy/
Hepatocellular Carcinoma

- Hepatocellular carcinoma, NOS (8170/3)
  - Liver cell carcinoma
  - Hepatocarcinoma
  - Hepatoma, malignant
  - Hepatoma, NOS
- Hepatocellular carcinoma, fibrolamellar (8171/3)
- Hepatocellular carcinoma, scirrhous (8172/3)
- Hepatocellular carcinoma, sarcomatoid variant (8173/3)
- Hepatocellular carcinoma, Clear Cell Type (8174/3)
- Hepatocellular carcinoma, pleomorphic type (8175/3)

Cholangiocarcinoma

- Cholangiocarcinoma (8160/3)
  - Bile duct carcinoma
  - Bile duct adenocarcinoma
- Bile duct cystadenocarcinoma (8161/3)
- Klatskin tumor (8162/3)
Klatskin Tumor

http://www.aokainc.com/liver-anatomy/

Questions?
Quiz
Staging Systems
Liver and Intrahepatic Bile Duct

Collaborative Stage Data Collection System
V02.05
Liver and Intrahepatic Bile Duct
CS Tumor Size: Liver

- Tumor size is a determinant in AJCC T2 and T3a categories

CS Extension: Liver

- Multiple satellite nodules/tumors
  - Satellitosis, multifocal tumors, intrahepatic metastases
- Major vascular invasion: CS Extension = 630
  - Invasion of main portal vein OR 1 or more of the 3 hepatic veins
- Hepatic artery or vena cava invasion = 660
- CS Extension = 390, 400, 420, or 440
  - T category is based on value of CS Tumor Size
Pop Quiz

- On staging MRI tumor is described as 8 cm hepatoma of right liver lobe with no evidence of vascular invasion. Chemoembolization and arteriography describes tumor as hypervascular hepatoma.

- What is the code for CS Extension?
  - 100: Single lesion (1 lobe) WITHOUT intrahepatic vascular invasion, including vascular invasion not stated
  - 170: Confined to liver NOS; Localized, NOS
  - 350: Single lesion (1 lobe ) WITH intrahepatic vascular invasion
  - 999: Unknown

CS Lymph Nodes: Liver

- Code 100
  - Hepatic NOS: Hepatic artery; hepatic pedicle; inferior vena cava; porta hepatis (hilar) (in hilus of liver)
  - Hepatoduodenal ligament
  - Periportal
  - Portal vein
  - Regional lymph nodes NOS

- Code 200
  - Inferior phrenic nodes
Pop Quiz

- MRI: 8 cm hepatoma confined to right liver lobe with sub-centimeter sized lymph nodes of the porta hepatis.
- What is the code for CS Lymph Nodes?
  - 000: No regional lymph node involvement
  - 100: Hepatic NOS: Porta hepatis (hilar) (in hilus of liver)
  - 805: Lymph nodes NOS
  - 999: Unknown

CS Mets at DX: Liver

- Distant nodes
  - Code 11
    - Cardiac; lateral (aortic) (lumbar); pericardial (pericardiac); posterior mediastinal (tracheoesophageal) including juxtaphrenic nodes; retroperitoneal, NOS
  - Code 12
    - Coronary artery; renal artery
  - Code 13
    - Aortic (para-, peri-); diaphragmatic NOS; peripancreatic (near head of pancreas only)
  - Code 40: Distant metastasis except distant lymph nodes; carcinomatosis
**SSF1: Alpha Fetoprotein (AFP) Interpretation**

**SSF3: AFP Lab Value**

- **AFP**
  - Is a plasma protein
  - Is a predictive factor
- **SSF1**
  - Record interpretation of highest AFP test result prior to treatment
- **SSF3**
  - Record the range for highest AFP lab value in ng/ml prior to treatment
    - Code measured value less than or equal to 1.0 ng/ml as 001
  - Use same test to record SSF1 and SSF3

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**SSF2: Fibrosis Score**

- Indicator of underlying liver disease
  - Also called Ishak score
- Prognostic of overall survival

- **F0:** Fibrosis score 0-4 (none to moderate fibrosis)
- **F1:** Fibrosis score 5-6 (severe fibrosis or cirrhosis)
Pop Quiz

- MRI: 8 cm hepatoma confined to right liver lobe. Vascular invasion is not evident. Lymphadenopathy is not present. Hepatic cirrhosis is present.
- What is the code for SSF2?
  - 000: F0 Fibrosis score 0-4 (None to moderate fibrosis)
  - 001: F1 Fibrosis score 5-6 (Severe fibrosis or cirrhosis)
  - 999: Unknown

MELD Score

- Model for End-Stage Liver Disease (MELD)
  - Creatinine value and unit of measure
  - Total bilirubin lab value and unit of measure
  - International normalized ratio for prothrombin time (INR)
**SSF4: Creatinine Value**

- **Creatinine**
  - Is a chemical waste product produced by muscle metabolism
- **SSF4**
  - Record the highest blood or serum creatinine value prior to treatment
- **SSF5**
  - Record method used to describe concentration of creatinine as recorded in SSF4
    - By weight: Milligrams/deciliter (mg/dl)
    - By molecular count: Micromoles/liter (umol/l)
- Use same test to record SSF4 and SSF5

**SSF6: Total Bilirubin Value**

- **Bilirubin**
  - Is the breakdown of hemoglobin in red blood cells
- **SSF6**
  - Record to the nearest 10th the highest total bilirubin value prior to treatment
- **SSF7**
  - Record method used to describe concentration of bilirubin
    - By weight: Milligrams/deciliter (mg/dl)
    - By molecular count: Micromoles/liter (umol/l)
- Use same test to record SSF6 and SSF7
SSF8: International Normalized Ratio for Prothrombin Time (INR)

- INR
  - Is a measure of how quickly blood clots
  - Record highest INR value prior to treatment

CS Tumor Size: Intrahepatic Bile Duct

- Tumor size is not a determinant in 7th Edition AJCC T category
CS Extension: Intrahepatic Bile Duct

- Multiple satellite nodules/tumors
  - Satellitosis, multifocal tumors, intrahepatic metastases
- Major vascular invasion
  - Invasion of main portal vein OR 1 or more of the 3 hepatic veins
- Hepatic artery or vena cava invasion = 660
- CS Extension = 100-520, 580, 620, 631-650, 660-665, 675-755, 765-800, or 999
  - Derived T category is based on tumor growth pattern (SSF10)
  - Periductal infiltrating growth pattern is T4 in AJCC

CS Lymph Nodes: Intrahepatic Bile Duct

- Code 110
  - Hilary
    - Common bile duct
    - Cystic duct
    - Hepatic NOS
      - Hepatic artery
      - Hepatic pedicle
    - Hepatoduodenal ligament
    - Portal vein
      - Porta hepatis
      - Periportal
    - Regional lymph nodes NOS
CS Lymph Nodes: Intrahepatic Bile Duct

- Code 120
  - Primary tumor in left liver (segments 2-4): Gastrohepatic
- Code 130
  - Primary tumor in right liver (segments 5-8): Periduodenal; peripancreatic
- Code 140
  - Primary tumor involves both liver lobes: Gastrohepatic; periduodenal; peripancreatic
- Code 200: Inferior phrenic nodes

CS Mets at DX: Intrahepatic Bile Duct

- Distant nodes
  - Code 07
    - Caval (inferior vena cava)
  - Code 11
    - Cardiac; lateral (aortic) (lumbar); pericardial (pericardiac); posterior mediastinal (tracheoesophageal) including juxtaphrenic nodes; retroperitoneal NOS
  - Code 12
    - Coronary artery; renal artery
Liver 6/5/14

CS Mets at DX: Intrahepatic Bile Duct

- Distant nodes
  - Code 17
    - Aortic: Para-aortic; periaortic
    - Diaphragmatic NOS
    - Left liver (segments 2-4): Periduodenal; peripancreatic
    - Right liver (segments 5-8): Gastrohepatic
  - Code 40: Distant metastasis except distant lymph nodes; carcinomatosis

SSF1: Alpha Fetoprotein (AFP) Interpretation

- AFP
  - Is a plasma protein
  - Is a predictive factor
  - Record interpretation of highest AFP test result prior to treatment
**SSF2: Fibrosis Score**

- Indicator of underlying liver disease
  - Also called Ishak score
  - Prognostic of overall survival

- F0: Fibrosis score 0-4 (none to moderate fibrosis)
- F1: Fibrosis score 5-6 (severe fibrosis or cirrhosis)

**SSF10: Tumor Growth Pattern**

- Growth patterns of intrahepatic cholangiocarcinoma
  - Mass forming type
  - Periductal infiltrating type
  - Mixed type

- Record absence or presence of infiltrating periductal component
Pop Quiz

- Abdominal CT scan: Intrahepatic 3x5 cm mass consistent with cholangiocarcinoma.
- What is the code for SSF10?
  - 000: Absence of periductal component
  - 010: Presence of periductal component
  - 999: Unknown

SSF11: Primary Sclerosing Cholangitis (PSC)

- PSC
  - Is inflammation of bile ducts
  - Record absence or presence of PSC
AJCC Cancer Stage
Liver: Chapter 18
Intrahepatic Bile Ducts: Chapter 19

AJCC Cancer Stage: Liver

- Classification
  - Clinical staging
    - Depends on imaging procedures designed to demonstrate size of primary tumor and vascular invasion
  - Pathologic staging
    - Consists of evaluation of primary tumor, including histologic grade, regional lymph node status, and underlying liver disease
AJCC Cancer Stage: Liver

- ICD-O-3 Topography Codes
  - C22.0 (liver)

- ICD-O-3 Histology Code Ranges: 8170-8175
  - 8170/3: Hepatocellular carcinoma
  - 8171/3: Hepatocellular carcinoma, fibrolamellar
  - 8172/3: Hepatocellular carcinoma, scirrhous
  - 8173/3: Hepatocellular carcinoma, spindle cell variant
  - 8174/3: Hepatocellular carcinoma, clear cell type
  - 8175/3: Hepatocellular carcinoma, pleomorphic type

AJCC Cancer Stage: Liver

T Category

- Presence or absence of vascular invasion
  - Radiographic or pathologic
  - Pathologic classification includes gross as well as microscopic involvement

- Number of tumor nodules
  - Satellitosis, multifocal tumors, intrahepatic metastases = multiple tumors

- Size of largest tumor
  - < or = 5 cm vs. > 5 cm
AJCC Cancer Stage: Liver

T Category

- T1: Solitary tumor without vascular invasion
- T2: Solitary tumor with vascular invasion or multiple tumors none more than 5 cm
- T3a: Multiple tumors more than 5 cm
- T3b: Single tumor or multiple tumors of any size involving major branch of portal vein or hepatic vein
- T4: Tumor(s) with direct invasion of adjacent organs other than gallbladder or perforation of visceral peritoneum

AJCC Cancer Stage: Liver

N Category

- N1: Regional node metastasis
  - Caval
    - Hepatic artery
    - Portal vein
  - Hepatoduodenal ligament
  - Hilar (in hilus of liver)
  - Inferior phrenic
## AJCC Cancer Stage: Liver

### M Category
- **M1:** Distant metastasis
  - Lungs
  - Bones

### AJCC Cancer Stage: Liver

#### Anatomic Stage/Prognostic Groups

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Pop Quiz

- MRI: 8 cm hepatoma confined to right liver lobe. Vascular invasion is not evident. Lymphadenopathy is not present. Hepatic cirrhosis is present.
- CT scan chest: No abnormalities in lungs.
- Liver biopsy: Hepatocellular carcinoma, grade 2.

Pop Quiz

- What is the AJCC clinical stage?
  - cT1 cN0 cM0 stage I

- What is the AJCC pathologic stage?
  - pT1 pNX cM0 stage 99
AJCC Cancer Stage: Intrahepatic Bile Duct

- Classification
  - Clinical staging
    - Depends on imaging procedures designed to demonstrate tumor growth pattern of intrahepatic cholangiocarcinoma, number of intrahepatic masses, and presence or absence of vascular invasion
  - Pathologic staging
    - Consists of evaluation of primary tumor, including tumor number, involvement of local regional lymph nodes, and presence or absence of vascular invasion

AJCC Cancer Stage: Intrahepatic Bile Duct

- ICD-O-3 Topography Codes
  - C22.1 (Intrahepatic bile duct)
- ICD-O-3 Histology Code Ranges: 8160, 8161, 8180
  - 8160/3: Cholangiocarcinoma
  - 8161/3: Bile duct cystadenocarcinoma
  - 8180/3: Combined hepatocellular carcinoma and cholangiocarcinoma
**AJCC Cancer Stage: Intrahepatic Bile Duct**

**T Category**

- Number of tumors
  - Satellitosis, multifocal tumors, intrahepatic metastases = multiple tumors
- Presence of vascular invasion
  - Major vessel invasion
  - Microscopic invasion of smaller intraparenchymal vascular structures
- Presence of visceral peritoneal perforation

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**AJCC Cancer Stage: Intrahepatic Bile Duct**

**T Category**

- Tis: Carcinoma in situ (intraductal tumor)
- T1: Solitary tumor without vascular invasion
- T2a: Solitary tumor with vascular invasion
- T2b: Multiple tumors, with or without vascular invasion
- T3: Tumor perforating visceral peritoneum or involving local extra hepatic structures by direct invasion
- T4: Tumor with periductal invasion
AJCC Cancer Stage: Intrahepatic Bile Duct

N Category

- N1: Regional node metastasis
  - Left liver (segments 2-4)
    - Hilar; gastrohepatic
  - Right liver (segments 5-8)
    - Hilar (common bile duct, hepatic artery, portal vein, cystic duct); periduodenal; peripancreatic

M Category

- M1: Distant metastasis
  - Peritoneum
  - Lungs
  - Pleura
### AJCC Cancer Stage: Common Bile Duct

**Anatomic Stage/Prognostic Groups**

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### Pop Quiz

- MRI: 2 cm malignant tumor confined to left liver lobe with vascular invasion. No lymphadenopathy.
- CT scan chest: No abnormalities in lungs.
- Hepatic biopsy: Combined hepatocellular carcinoma and cholangiocarcinoma, grade 2; vascular invasion present.
Pop Quiz

▪ What is the AJCC clinical stage?
  ▪ cT2a cN0 cM0 stage II

▪ What is the AJCC pathologic stage?
  ▪ pT2a pNX cM0 stage 99

Summary Stage 2000
Liver and Intrahepatic Bile Ducts
Summary Stage 2000

- In situ (0)
  - Noninvasive; intraepithelial
- Localized (1)
  - Confined to 1 lobe with or without vascular invasion
  - Multiple (satellite) nodules/tumors confined to 1 lobe
  - Confined to liver NOS
  - Localized NOS

Summary Stage 2000

- Regional by Direct Extension (2)
  - More than 1 lobe involved by contiguous growth (single lesion)
  - Extension to:
    - Diaphragm; extrahepatic bile duct; extrahepatic blood vessel (hepatic artery, portal vein, vena cava); gallbladder; lesser omentum; ligament (coronary, falciform, hepatoduodenal, hepatogastric, triangular); peritoneum NOS (parietal, visceral)
  - Multiple (satellite) nodules/tumors in more than 1 lobe of liver or on surface of parenchyma
  - Satellite nodules NOS
Summary Stage 2000

- Regional lymph nodes(s) involved only (3)
  - Hepatic NOS: Hepatic artery, hepatic pedicle, inferior vena cava, porta hepatis (portal) (hilar) [in hilus of liver]
  - Periportal
  - Regional lymph nodes NOS
- Regional by BOTH direct extension AND regional lymph node(s) involved (4)
  - Summary Stage 2000 codes 2 + 3
- Regional NOS (5)

Summary Stage 2000

- Distant site(s)/lymph node(s) involved (7)
  - Distant lymph nodes
    - Aortic, NOS [lateral (lumbar), para-aortic, periaortic]; cardiac; coronary artery; diaphragmatic [pericardial (pericardiac)]; peripancreatic; posterior mediastinal (tracheoesophageal) including juxtaphrenic nodes; renal artery; retroperitoneal, NOS; other distant lymph nodes
  - Extension to
    - Pancreas; pleura; stomach
    - Further contiguous extension
  - Metastasis
Pop Quiz

- MRI: 12 cm hepatoma with vascular invasion involves right and left liver lobes. Lymphadenopathy is not present. Hepatic cirrhosis is present.
- CT scan chest: No abnormalities in lungs.
- Liver biopsy: Hepatocellular carcinoma, grade 2.
- What is the Summary Stage 2000?
  - 2 Regional by direct extension

Questions?
Quiz
Diagnosis and Treatment

Screening for Hepatocellular Carcinoma

- Populations at risk are those with liver cirrhosis
  - Alpha-fetoprotein
  - Ultrasound
Presentation

- Often asymptomatic
- May present with non-specific symptoms
  - Jaundice
  - Anorexia
  - Malaise
  - Upper abdominal pain
  - Hepatomegaly
  - Ascites

Imaging

- Hepatocellular carcinoma presents as a hypervascular lesion
- Diagnostic imaging should involve one or more of the following modalities
  - 4-phase helical CT
  - 4-phase dynamic contrast enhanced MRI
  - Contrast enhanced ultrasound
FNAB vs Core Needle Biopsy

**FNAB**
- Associated with fewer complications
- Sample can be stained and provide immediate feedback
- FNAB requires a skilled cytopathologist

**Core Needle Biopsy**
- Is more invasive
- Provides both cytologic and cell structure information
- Additional immunohistochemical testing can be done on the sample.

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**Initial Workup**

- Should include a multidisciplinary investigation into the etiologic origin of liver the liver disease.
  - Hepatitis screening (A&B)
    - Viral load evaluation for patients positive for hepatitis
  - Presence of comorbidities
  - Evaluation of liver function
    - Evaluation for portal hypertension
Assessment of Liver Function

- Child-Pugh classification for patients with cirrhosis
  - Based on laboratory measurements
  - Patients are assigned a score of A-C based on how well the liver is able to compensate for damaged tissue.

- Model for End Stage Liver Disease (MELD)
  - Developed for assessing patients on a liver transplant list
    - Based on three laboratory measurements
    - Used to predict a patient's 3 month mortality

Treatment Options-Surgery

- Partial hepatectomy
  - Potentially curative for patients with solitary tumors and no vascular invasion (Stage I)
  - Should only be done on patients with a Child-Pugh class A score or in some cases a Class B score
  - In some studies these patients have had a 5 year survival rate of approximately 70%
    - Recurrence rates at 5 years have been reported to exceed 70%
Liver Transplantation

- Ideal candidates include patients with Stage I or some Stage II patients with Child-Pugh scores of B or C that are not eligible for partial resection
- Overall survival is similar to that of patients that undergo partial resections

Bridge Therapy

- Done to keep that patient eligible for liver transplant
  - Radiofrequency Ablation (RFA)
  - Chemoembolization
    - Transarterial chemoembolization (TACE)
    - TACE with drug eluting beads (DEB-TACE)
  - Transarterial radioembolization (TARE)
  - Conformal radiation therapy
  - Chemotherapy
Treatment Options

- Downstaging Therapy
  - Used to reduce tumor burden in patients with advanced (but not metastatic) disease who do not meet transplant criteria
  - Locoregional therapies for downstaging include
    - Percutaneous ethanol injection (PEI)
    - RFA
    - TACE
    - TARE

Radiofrequency Ablation (RFA)

- A “heating probe” is used to destroy tumors in the liver
  - Generally done on smaller tumors
  - Can be performed during open surgery or laparoscopically
- Coded under Surgery
  - 16 Heat-Radio-frequency ablation (RFA)
    - Only if no specimen sent to pathology from the procedure
Percutaneous Ethanol Injection (PEI)

- In this technique, sterile, 100% alcohol is injected into liver cancers to kill the cancer cells.
  - The alcohol is injected through the skin (percutaneous) into the tumor using a very thin needle with the help of ultrasound or CT visual guidance.
  - Alcohol causes tumor destruction by drawing water out of tumor cells (dehydrating them) and thereby altering (denaturing) the structure of cellular proteins.
  - It may take up to five or six sessions of injections to completely destroy the cancer.
- Code as surgery (code 15)

Chemoembolization

- Transcatheter Arterial Chemoembolization (TACE)
  - 75% of the liver is supplied by the portal vein
  - Most hepatocellular carcinomas are supplied by the hepatic artery and are highly vascular
- Drug-Eluting Beads (DEB-TACE)
  - Microspheres used to embolize the tumor and release chemotherapy (doxorubicin)
- Code as chemotherapy-single or multiple agents
Transarterial Radioembolization (TARE)

- Same concept as DEB TACE, but rather than chemotherapy Yttrium-90 is used
- Code as follows
  - Regional Treatment Modality: 53 - Brachytherapy, interstitial, LDR
  - Radiation Treatment Volume: 14 – Liver
  - Regional Dose-cGy: 88888 - Not applicable (brachytherapy)
  - Boost Treatment Modality: 00 - None, no boost administered
  - Boost Dose-cGy: 88888 - Not applicable (brachytherapy)
- If embolization is done and there is no chemotherapy agent or radiation, code to Other

External Beam Radiation (EBRT)

- Often used on patients with 1-3 tumor with minimal or no extrahepatic disease
  - Stereotactic body radiation (SBRT)
    - Code as 41, 42, or 43
  - 3D Conformal
    - Code as 32
Systemic Therapy

- Systemic chemotherapy has traditionally played a limited role in the treatment of hepatocellular carcinoma
  - Other treatments are more effective on locoregional disease
  - Patients with advanced disease have not responded well to chemotherapy
- Sorafenib has shown significantly longer overall survival rates than patients in the placebo arm of the study (10.7 months vs 7.9 months*)
  - Oral multikinase inhibitor that suppresses cell proliferation and angiogenesis

*Phase III clinical SHARP Trial

Questions?
Quiz
Case Scenario
Coming Up...

- Topics in Survival Data
  - July 10, 2014
- Collecting Cancer Data: Lung
  - August 7, 2014

- Registration is open for 2014-2015 Cancer Registry & Surveillance Webinar Series

And the winners are...........
CE Certificate Quiz/Survey

- Phrase
  - Cirrhosis
- Link

Please send any questions to:
Jim Hofferkamp jhofferkamp@naaccr.org
Shannon Vann svann@naaccr.org

Thank You!!!!