MASSACHUSETTS

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Medical Policy

Radioembolization for Primary and Metastatic Tumors of the Liver

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Policy Number: 292

BCBSA Reference Number: 8.01.43

Related Policies

- Radiofrequency Ablation of Miscellaneous Solid Tumors Excluding Liver Tumors, #259
- Cryosurgical Ablation of Primary or Metastatic Liver Tumors, #633
- Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies, #634
- Radiofrequency Ablation of Primary or Metastatic Liver Tumors, #286

Policy

Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity Medicare HMO Blue[SM] and Medicare PPO Blue[SM] Members

Radioembolization may be **MEDICALLY NECESSARY** for the following conditions:

- To treat primary hepatocellular carcinoma that is unresectable and limited to the liver,
- In primary hepatocellular carcinoma as a bridge to liver transplantation,
- To treat hepatic metastases from neuroendocrine tumors (carcinoid and noncarcinoid) with diffuse and symptomatic disease when systemic therapy has failed to control symptoms, or
- To treat unresectable hepatic metastases from colorectal carcinoma that are both progressive and diffuse, in patients with liver-dominant disease who are refractory to chemotherapy or are not candidates for chemotherapy.

Radioembolization for all other hepatic metastases except for metastatic neuroendocrine tumors and metastases from colorectal cancer as noted above is **INVESTIGATIONAL.**

Radioembolization is **INVESTIGATIONAL** to treat primary intrahepatic cholangiocarcinoma.

Radioembolization is **INVESTIGATIONAL** for all other indications not described above.

Prior Authorization Information

Pre-service approval is required for all inpatient services for all products.
See below for situations where prior authorization may be required or may not be required for outpatient services.

Yes indicates that prior authorization is required.
No indicates that prior authorization is not required.

	Outpatient
Commercial Managed Care (HMO and POS)	No
Commercial PPO and Indemnity	No
Medicare HMO Blue℠	No
Medicare PPO Blue℠	No

CPT Codes / HCPCS Codes / ICD-9 Codes

The following codes are included below for informational purposes. Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member. A draft of future ICD-10 Coding related to this document, as it might look today, is included below for your reference.

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

CPT Codes

CPT codes:	Code Description
37243	Vascular embolization or occlusion, inclusive of all radiological supervision and interpretation, intraprocedural roadmapping, and imaging guidance necessary to complete the intervention; for tumors, organ ischemia, or infarction
75894	Transcatheter therapy, embolization, any method, radiological supervision and interpretation
77778	Interstitial radiation source application; complex
79445	Radiopharmaceutical therapy, by intra-arterial particulate administration

HCPCS Codes

HCPCS codes:	Code Description
C2616	Brachytherapy source, nonstranded, yttrium-90, per source
S2095	Transcatheter occlusion or embolization for tumor destruction, percutaneous, any method, using yttrium-90 microspheres

ICD-9 Diagnosis Codes

ICD-9-CM diagnosis codes:	Code Description
155.0	Malignant neoplasm of liver, primary
197.7	Malignant neoplasm of liver, secondary
209.72	Secondary neuroendocrine tumor of liver

ICD-10 Diagnosis Codes

ICD-10-CM Diagnosis codes:	Code Description
C22.0	Liver cell carcinoma
C22.2	Hepatoblastoma
C22.3	Angiosarcoma of liver
C22.4	Other sarcomas of liver
C22.7	Other specified carcinomas of liver

C22.8	Malignant neoplasm of liver, primary, unspecified as to type
C78.7	Secondary malignant neoplasm of liver and intrahepatic bile duct
C7B.02	Secondary carcinoid tumors of liver

Description

Hepatic tumors can arise either as primary liver cancer or by metastasis to the liver from other organs. Local therapy by surgical resection with tumor-free margins or liver transplantation is the only potentially curative treatments.

Various nonsurgical ablative techniques have been investigated that seek to cure or palliate unresectable hepatic tumors by improving locoregional control. These techniques rely on extreme temperature changes (cryosurgery; radiofrequency ablation), particle and wave physics (microwave or laser ablation), or arterial embolization therapy including chemoembolization, bland embolization, or radioembolization (chemoembolization) and gamma radiation (stereotactic radiosurgery).

Radioembolization, referred to as selective internal radiation therapy, is the intra-arterial delivery of small beads (microspheres) impregnated with yttrium-90 via the hepatic artery.

Patients with unresectable primary hepatocellular carcinoma (HCC) have shown a survival benefit using transarterial chemoembolization (TACE) therapy versus supportive care in patients with unresectable HCC.

Therapy for patients with unresectable metastatic neuroendocrine tumors include medical (somatostatin analogs like octreotide), systemic chemotherapy, ablation (radiofrequency or cryotherapy), transcatheter arterial embolization, TACE, or radiation.

Examples of yttrium-90 microspheres for radioembolization of primary and metastatic tumors of the liver include the TheraSphere® from MDS Nordion, Inc. and the SIR-Spheres® from Sirtex Medical Limited. All yttrium-90 microspheres for radioembolization of primary and metastatic tumors of the liver regardless of the commercial name, the manufacturer, or FDA approval status are investigational except as noted in the policy statement.

Summary

Radioembolization (RE), referred to as selective internal radiation therapy (SIRT) in older literature, is the intra-arterial delivery of small beads (microspheres) impregnated with yttrium-90 via the hepatic artery. The microspheres, which become permanently embedded, are delivered to tumor preferentially to normal liver, as the hepatic circulation is uniquely organized, whereby tumors greater than 0.5 cm rely on the hepatic artery for blood supply while normal liver is primarily perfused via the portal vein.

- Hepatocellular carcinoma (HCC): Studies have demonstrated that RE is comparable with transarterial chemoembolization (TACE) (which is considered to be therapy of choice) for patients with unresectable HCC in terms of tumor response and overall survival (OS). Disadvantages of TACE include the necessity of multiple treatment sessions and hospitalization, its contraindication in patients with portal vein thrombosis, and its poorer tolerance by patients.
- Intrahepatic cholangiocarcinoma (ICC): To date, studies on use of RE in patients with ICC consist of small case series. No studies have been published comparing RE with other treatments such as chemotherapy or chemoradiation. Available studies varied with respect to patient characteristics, particularly presence of extrahepatic disease, previous therapy, and performance status.
- Metastatic colorectal cancer: A major cause of morbidity and mortality in patients with colorectal disease metastatic to the liver is liver failure, as this disease tends to progress to diffuse, liver-dominant involvement. Therefore, the use of RE to decrease tumor bulk and/or halt the time to tumor progression and liver failure, may lead to prolonged progression-free and OS in patients with no other treatment options (ie, those with chemotherapy refractory liver-dominant disease). Other uses include palliation of symptoms from tumor bulk. Two phase 3 trials are currently underway that compare first-line chemotherapy with and without RE in patients with metastatic colorectal cancer.

- Metastatic neuroendocrine tumors: Studies have included heterogeneous patient populations, and interpretation of survival data using radioembolization is difficult. Few studies report relief of symptoms from carcinoid syndrome in a proportion of patients. Surgical debulking of liver metastases has shown palliation of hormonal symptoms; debulking by RE may lead to symptom relief in some patients.
- Miscellaneous: A few studies on the use of RE in metastatic breast cancer and melanoma to the liver have shown promising initial results; however, the qdata are limited and the studies have been small and composed of heterogeneous patients. The use of RE in other tumors metastatic to the liver is too limited to draw meaningful conclusions; this use is considered investigational.
- Limited data are available to assess the utility of RE (radiation lobectomy) as a technique to bridge to hepatic resection.

Policy History

Date	Action
5/2014	Updated Coding section with ICD10 procedure and diagnosis codes, effective 10/2015.
5/2014	BCBSA National medical policy review. Clarified coding information Investigational indications clarified. Effective 5/1/2014.
1/2014	Coding information clarified
9/2013	BCBSA National medical policy review. New investigational indications described. Effective 9/1/2013.
11/2011- 4/2012	Medical policy ICD 10 remediation: Formatting, editing and coding updates. No changes to policy statements.
12/1/2011	BCBSA National medical policy review. Changes to policy statements.
4/1/2011	Medical policy 292, effective 04/01/2011, describing covered and non-covered indication.

Information Pertaining to All Blue Cross Blue Shield Medical Policies

Click on any of the following terms to access the relevant information:
Medical Policy Terms of Use
Managed Care Guidelines
Indemnity/PPO Guidelines
Clinical Exception Process
Medical Technology Assessment Guidelines

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