



# Louisiana

## **Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies**

**Policy #** 00227

**Original Effective Date:** 03/19/2008

**Current Effective Date:** 06/08/2020

*Applies to all products administered or underwritten by Blue Cross and Blue Shield of Louisiana and its subsidiary, HMO Louisiana, Inc. (collectively referred to as the "Company"), unless otherwise provided in the applicable contract. Medical technology is constantly evolving, and we reserve the right to review and update Medical Policy periodically.*

*Note: Radioembolization for Primary and Metastatic Tumors of the Liver is addressed separately in medical policy 00110.*

*Note: Radiofrequency Ablation of Primary or Metastatic Liver Tumors is addressed separately in medical policy 00182.*

*Note: Cryosurgical Ablation of Primary or Metastatic Liver Tumors is addressed separately in medical policy 00220.*

### **When Services Are Eligible for Coverage**

*Coverage for eligible medical treatments or procedures, drugs, devices or biological products may be provided only if:*

- *Benefits are available in the member's contract/certificate, and*
- *Medical necessity criteria and guidelines are met.*

Based on review of available data, the Company may consider transcatheter arterial chemoembolization (TACE) of the liver to treat patients with the following conditions to be **eligible for coverage:\*\***

- Liver metastasis in symptomatic patients with metastatic neuroendocrine tumor whose symptoms persist despite systemic therapy and who are not candidates for surgical resection;  
or
- Liver-dominant metastatic uveal melanoma.

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

## When Services May Be Eligible for Coverage

*Coverage for eligible medical treatments or procedures, drugs, devices or biological products may be provided only if:*

- *Benefits are available in the member's contract/certificate, and*
- *Medical necessity criteria and guidelines are met.*

Based on review of available data, the Company may consider transcatheter arterial chemoembolization (TACE) of the liver to treat hepatocellular cancer (HCC) to be **eligible for coverage.\*\***

### Patient Selection Criteria

Coverage eligibility for TACE of the liver to treat HCC will be considered when all of the following criteria are met:

- Tumor is unresectable; and
- Confined to the liver; and
- Not associated with portal vein thrombosis; and
- Child-Pugh class is either A or B.

Based on review of available data, the Company may consider the use of transcatheter arterial chemoembolization (TACE) of the liver as a bridge to transplant in patients with hepatocellular cancer (HCC) where the intent is to prevent further tumor growth and to maintain a patient's candidacy for liver transplant to be **eligible for coverage.\*\***

### Patient Selection Criteria

Coverage eligibility when using TACE of the liver as a bridge to transplantation to prevent further tumor growth and to maintain a patient's candidacy for liver transplant will be considered when all of the following criteria are met:

- A single tumor less than 5cm or no more than 3 tumors each less than 3cm in size; and
- Absence of extrahepatic disease or vascular invasion; and
- Child-Pugh class of either A or B.

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

Child-Pugh Score Calculator:

<https://www.mdcalc.com/child-pugh-score-cirrhosis-mortality>

## When Services Are Considered Investigational

*Coverage is not available for investigational medical treatments or procedures, drugs, devices or biological products.*

Based on review of available data, the Company considers the use of transcatheter arterial chemoembolization (TACE) of the liver as neoadjuvant or adjuvant therapy in hepatocellular cancer (HCC) that is considered resectable to be **investigational**.\*

Based on review of available data, the Company considers the use of transcatheter arterial chemoembolization (TACE) of the liver to treat hepatocellular tumors prior to liver transplantation, except as noted above, to be **investigational**.\*

Based on review of available data, the Company considers the use of transcatheter arterial chemoembolization (TACE) of the liver to treat liver metastases from any other tumors or to treat hepatocellular cancer (HCC) for those conditions not listed as eligible for coverage, including recurrent HCC, to be **investigational**.\*

Based on review of available data, the Company considers the use of transcatheter arterial chemoembolization (TACE) of the liver to treat unresectable cholangiocarcinoma to be **investigational**.\*

The use of transcatheter arterial chemoembolization (TACE) of the liver when the patient selection criteria are not met is considered to be **investigational**.\*

## Background/Overview

### **Transcatheter Arterial Chemoembolization**

TACE is a minimally invasive procedure performed by interventional radiologists who inject highly concentrated doses of chemotherapeutic agents into the tumor tissues and to restrict tumor blood supply. The embolic agent(s) causes ischemia and necrosis of the tumor and slows anticancer drug

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

washout. The most common anticancer drugs used in published TACE studies for hepatocellular carcinoma include doxorubicin (36%), followed by cisplatin (31%), epirubicin (12%), mitoxantrone (8%), and mitomycin C (8%).

The TACE procedure requires hospitalization for placement of a hepatic artery catheter and workup to establish eligibility for chemoembolization. Before the procedure, the patency of the portal vein must be demonstrated to ensure an adequate posttreatment hepatic blood supply. With the patient under local anesthesia and mild sedation, a superselective catheter is inserted via the femoral artery and threaded into the hepatic artery. Angiography is then performed to delineate the hepatic vasculature, followed by injection of the embolic chemotherapy mixture. Embolic material varies but may include a viscous collagen agent, polyvinyl alcohol particles, or ethiodized oil. Typically, only one lobe of the liver is treated during a single session, with subsequent embolization procedures scheduled five days to six weeks later. In addition, because the embolized vessel recanalizes, chemoembolization can be repeated as many times as necessary.

### **Adverse Events**

TACE of the liver has been associated with potentially life-threatening toxicities and complications, including severe postembolization syndrome, hepatic insufficiency, abscess, or infarction. TACE has been investigated to treat resectable, unresectable, and recurrent hepatocellular carcinoma, cholangiocarcinoma, liver metastases, and in the liver transplant setting. Treatment alternatives include resection when possible, chemotherapy administered systemically or by hepatic artery infusion. Hepatic artery infusion involves the continuous infusion of chemotherapy with an implanted pump, while TACE is administered episodically. Hepatic artery infusion does not involve the use of embolic material.

## **FDA or Other Governmental Regulatory Approval**

### **U.S. Food and Drug Administration (FDA)**

Chemoembolization for hepatic tumors is a medical procedure and, as such, is not subject to regulation by the U.S. Food and Drug Administration. However, the embolizing agents and drugs are subject to Food and Drug Administration approval.

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

## **Rationale/Source**

Transcatheter arterial chemoembolization (TACE) of the liver is a proposed alternative to conventional systemic or intra-arterial chemotherapy and to various nonsurgical ablative techniques, to treat resectable and nonresectable tumors. TACE combines the infusion of chemotherapeutic drugs with particle embolization. Tumor ischemia secondary to the embolization raises the drug concentration compared with infusion alone, extending the retention of the chemotherapeutic agent and decreasing systemic toxicity. The liver is especially amenable to such an approach, given its distinct lobular anatomy, the existence of two independent blood supplies, and the ability of healthy hepatic tissue to grow and thus compensate for tissue mass lost during chemoembolization.

### **Unresectable and Resectable Hepatocellular Carcinoma**

For individuals who have unresectable HCC confined to the liver and not associated with portal vein thrombosis who receive TACE, the evidence includes several randomized controlled trials (RCTs), large observational studies, and systematic reviews. The relevant outcomes are overall survival (OS), disease-specific survival, quality of life (QOL), and treatment-related mortality and morbidity. Evidence from a limited number of RCTs has suggested that TACE offers a survival advantage compared with no therapy and survival with TACE is at least as good as with systemic chemotherapy. One systematic review has highlighted possible biases associated with these studies. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who have resectable HCC who receive neoadjuvant or adjuvant TACE, the evidence includes several RCTs and systematic reviews. The relevant outcomes are OS, disease-specific survival, QOL, and treatment-related mortality and morbidity. Studies have shown little to no difference in OS rates with neoadjuvant TACE compared with surgery alone. A meta-analysis found no significant improvements in survival or recurrence with preoperative TACE for resectable HCC. While both RCTs and the meta-analysis that evaluated TACE as adjuvant therapy to hepatic resection in HCC reported positive results, the quality of individual studies and the methodologic issues related to the meta-analysis preclude certainty when interpreting the results. Well-conducted multicentric trials from the U.S. or Europe representing relevant populations with adequate randomization procedures, blinded assessments, centralized oversight and publication in peer-

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

reviewed journals are required. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have resectable HCC who receive TACE plus radiofrequency ablation (RFA), the evidence includes a single RCT. The relevant outcomes are OS, disease-specific survival, QOL, and treatment-related mortality and morbidity. The RCT failed to show the superiority in survival benefit with combination TACE plus RFA treatment compared with surgery for HCC lesions 3 cm or smaller. Further, an ad hoc subgroup analysis showed a significant benefit for surgery in recurrence and OS in patients with lesions larger than 3 cm. It cannot be determined from this trial whether TACE plus RFA is as effective as a surgical resection for these small tumors. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have unresectable HCC who receive TACE plus RFA, the evidence includes multiple systematic reviews and RCTs. The relevant outcomes are OS, disease-specific survival, QOL, and treatment-related mortality and morbidity. Multiple meta-analyses and RCTs have shown a consistent benefit in survival and recurrence-free survival favoring combination TACE plus RFA over RFA alone. However, results of these meta-analyses are difficult to interpret because the pooled data included heterogeneous patient populations and, in a few cases, data from a study retracted due to questions about data veracity. A larger well-conducted RCT has reported a relative reduction in the hazard of death by 44% and a 14% difference in 4-year survival favoring combination therapy. The major limitations of this trial were its lack of a TACE-alone arm and the generalizability of its findings to patient populations that have unmet needs such as those with multiple lesions larger than 3 cm and Child-Pugh class B or C. Further, this single-center trial was conducted in China, and until these results have been reproduced in patient populations representative of pathophysiology and clinical stage more commonly found in the U.S. or Europe, the results may not be generalizable. The evidence is insufficient to determine the effects of the technology on health outcomes.

### **Bridge to Liver Transplant**

For individuals who have a single hepatocellular tumor less than 5 cm or no more than three tumors each less than 3 cm in size, absence of extrahepatic disease or vascular invasion, and Child-Pugh class A or B seeking to prevent further tumor growth and to maintain patient candidacy for liver transplant who receive pretransplant TACE, the evidence includes multiple small prospective studies. The relevant outcomes are OS, disease-specific survival, QOL, and treatment-related

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

mortality and morbidity. There is a lack of comparative trials on various locoregional treatments as a bridge therapy for liver transplantation. Multiple small prospective studies have demonstrated that TACE can prevent dropouts from the transplant list. TACE has become an accepted method to prevent tumor growth and progression while patients are on the liver transplant waiting list. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

### **Unresectable Cholangiocarcinoma**

For individuals who have unresectable cholangiocarcinoma who receive TACE, the evidence includes several retrospective observational studies and systematic reviews. The relevant outcomes are OS, disease-specific survival, QOL, and treatment-related mortality and morbidity. RCT evaluating the benefit of adding TACE to the standard of care for patients with unresectable cholangiocarcinoma are lacking. Results of three retrospective studies have shown a survival benefit with TACE over the standard of care. These studies lacked matched patient controls. Although the observational data are consistent, the lack of randomization limits definitive conclusions. The evidence is insufficient to determine the effects of the technology on health outcomes.

### **TACE for Symptomatic Unresectable Neuroendocrine Tumors**

For individuals who have symptomatic metastatic neuroendocrine tumors despite systemic therapy and are not candidates for surgical resection who receive TACE, the evidence includes retrospective single-cohort studies. The relevant outcomes are OS, disease-specific survival, QOL, and treatment-related mortality and morbidity. There is a lack of evidence from RCTs supporting the use of TACE. Uncontrolled trials have suggested that TACE reduces symptoms and tumor burden and improves hormone profiles. Generally, the response rates are over 50% and include patients with massive hepatic tumor burden. While many studies have demonstrated symptom control, survival benefits are less clear. Despite the uncertain benefit on survival, the use of TACE to palliate the symptoms associated with hepatic neuroendocrine metastases can provide a clinically meaningful improvement in net health outcome. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

### **Liver-Dominant Metastatic Uveal Melanoma**

For individuals who have liver-dominant metastatic uveal melanoma who receive TACE, the evidence includes observational studies and reviews. The relevant outcomes are OS, disease-specific

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

survival, QOL, and treatment-related mortality and morbidity. There is a lack of evidence from RCTs assessing the use of TACE. Noncomparative prospective and retrospective studies have reported improvements in tumor response and survival compared with historical controls. Given the very limited treatment response from systemic therapy and the rarity of this condition, the existing evidence may support conclusions that TACE meaningfully improves outcomes for patients with hepatic metastases from uveal melanoma. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

### **Other Unresectable Hepatic Metastases**

For individuals who have unresectable hepatic metastases from any other types of primary tumors (eg, colorectal or breast cancer) who receive TACE, the evidence includes multiple RCTs, observational studies, and systematic reviews. The relevant outcomes are OS, disease-specific survival, QOL, and treatment-related mortality and morbidity. Multiple RCTs and numerous nonrandomized studies have compared TACE with alternatives in patients who have colorectal cancer and metastases to the liver. Nonrandomized studies have reported that TACE can stabilize disease in 40% to 60% of treated patients but whether this translates into a prolonged survival benefit relative to systemic chemotherapy alone is uncertain. Two small RCTs have reported that TACE with drug-eluting beads has resulted in statistically significant improvements in response rate and progression-free survival. Whether this translates into a prolonged survival benefit relative to systemic chemotherapy alone is uncertain. For cancers other than colorectal, the evidence is extremely limited and no conclusions can be made. Studies have assessed small numbers of patients and the results have varied due to differences in patient selection criteria and treatment regimens used. The evidence is insufficient to determine the effects of the technology on health outcomes.

## **Supplemental Information**

### **Clinical Input From Physician Specialty Societies and Academic Medical Centers**

While the various physician specialty societies and academic medical centers may collaborate with and make recommendations during this process, through the provision of appropriate reviewers, input received does not represent an endorsement or position statement by the physician specialty societies or academic medical centers, unless otherwise noted.

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.





# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

In response to requests, input was received from 1 specialty medical society (2 reviewers) and 3 academic medical centers while this policy was under review in 2012. There was general agreement that the use of transcatheter arterial chemoembolization (TACE) was medically necessary for indications in the policy; however, reviewers were split for its use as a bridge to transplant. There was general support for the investigational policy statement for the use of TACE as neoadjuvant or adjuvant therapy in resectable hepatocellular carcinoma. Reviewers were split over the investigational policy statement to treat other liver metastases or for recurrent hepatocellular carcinoma. Four reviewers provided input on the use of TACE in unresectable cholangiocarcinoma; two reviewers considered it investigational and two others considered it investigational but also medically necessary, the latter citing data showing a survival benefit of TACE compared with supportive therapy.

### Practice Guidelines and Position Statements

#### National Comprehensive Cancer Network Guidelines

##### *Hepatocellular Carcinoma*

The NCCN(v.2.2019) guidelines on hepatocellular carcinoma list TACE as an option for patients, not candidates for surgically curative treatments or as a part of a strategy to bridge patients for other curative therapies (category 2A). The guidelines also recommend that patients with tumors size between 3 and 5 cm can be considered for combination therapy with ablation and arterial embolization and those with unresectable or inoperable tumors greater than 5 cm be treated using arterial embolic approaches or systemic therapies. Additionally, TACE in highly selected patients has been shown to be safe in the presence of limited tumor invasion of the portal vein.

##### *Intrahepatic Cholangiocarcinoma*

The NCCN (v.2.2019) guidelines on intrahepatic cholangiocarcinoma consider arterially directed therapies, including TACE, to be treatment options for unresectable and metastatic intrahepatic cholangiocarcinoma.

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

### ***Neuroendocrine Tumors, Carcinoid, and Islet Cell Tumors***

The NCCN (v.1.2019) guidelines on neuroendocrine tumors, carcinoid, and islet cell tumors consider chemoembolization as an effective approach for patients with hepatic-predominant metastatic disease (category 2A).

### ***Uveal Cancer***

No NCCN guidelines were identified for uveal malignancies as of May 2019.

### ***Colon Cancer***

An update discussion is in process to establish the NCCN guidelines on the use of TACE for colorectal liver metastases (v.2.2019). As of this guideline version, the NCCN can recommend TACE only for clinical trials.

### ***Breast Cancer***

The NCCN (v.1.2019) guidelines on breast cancer do not address TACE as a treatment option for breast cancer metastatic to the liver.

### **U.S. Preventive Services Task Force Recommendations**

Not applicable.

### **Medicare National Coverage**

There is no national coverage determination. In the absence of a national coverage determination, coverage decisions are left to the discretion of local Medicare carriers.

### **Ongoing and Unpublished Clinical Trials**

Some currently unpublished trials that might influence this review are listed in Table 1.

**Table 1. Summary of Key Trials**

<b>NCT No.</b>	<b>Trial Name</b>	<b>Planned Enrollment</b>	<b>Completion Date</b>
<b>Ongoing</b>			
NCT01004978	A Phase III Randomized, Double-Blind Trial of Chemoembolization With or Without Sorafenib in Unresectable Hepatocellular	400	Jul 2019

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

NCT No.	Trial Name	Planned Enrollment	Completion Date
	Carcinoma (HCC) in Patients With and Without Vascular Invasion		
NCT02936388	Transarterial Radioembolisation in Comparison to Transarterial Chemoembolisation in Uveal Melanoma Liver Metastasis (SirTac)	108	Dec 2018
NCT01906216	Sorafenib With or Without Transarterial Chemoembolization (TACE) in Advanced Hepatocellular Carcinoma: A Multicenter, Randomized, Controlled Trial	246	Dec 2018
NCT01833286	Radiofrequency Ablation Combined With Transcatheter Arterial Chemoembolization Versus Re-resection for Recurrent Hepatocellular Carcinoma	200	Jul 2019
<b>Unpublished</b>			
NCT01676194	Efficacy of Transarterial Chemoembolization With DC-BeadsR Prior to Liver Transplantation for Hepatocellular Carcinoma on Patient Survival: A Prospective Multicentre and Randomized Study	140	Aug 2017 Terminated
NCT01512407	Randomised Controlled Trial on Adjuvant Transarterial Chemoembolisation After Curative Hepatectomy for Hepatocellular Carcinoma	144	Jan 2018 (unknown)
NCT00908752 <sup>a</sup>	A Randomized, Double-blind, Multicenter Phase III Study of Brivanib Versus Placebo as Adjuvant Therapy to Trans-Arterial Chemo-Embolization (TACE) in Patients With Unresectable Hepatocellular Carcinoma (The BRISK TA Study)	734	Jan 2018 (completed)

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

NCT No.	Trial Name	Planned Enrollment	Completion Date
NCT01869088	Phase III Trial of Transcatheter Arterial Chemoembolization(TACE) Plus Recombinant Human Adenovirus Type 5 Injection for Unresectable Hepatocellular Carcinoma (HCC)	266	Jan 2018

NCT: national clinical trial.

<sup>a</sup> Denotes industry-sponsored or cosponsored trial.

## References

1. Blue Cross and Blue Shield Association, Medical Policy Reference Manual, “Transcatheter Arterial Chemoembolization to Treat Primary or Metastatic Liver Malignancies”, Policy 8.01.11, August 2019.
2. Marelli L, Stigliano R, Triantos C, et al. Transarterial therapy for hepatocellular carcinoma: which technique is more effective? A systematic review of cohort and randomized studies. *Cardiovasc Intervent Radiol.* Jan-Feb 2007;30(1):6-25. PMID 17103105
3. Blue Cross and Blue Shield Association Technology Evaluation Center (TEC). Transcatheter arterial chemoembolization of hepatic tumors. *TEC Assessments.* 2000;Volume 15;Tab 22.
4. National Cancer Institute, Surveillance Epidemiology and End Results Program. *Cancer Stat Facts: Liver and Intrahepatic Bile Duct Cancer.* n.d.;
5. <https://seer.cancer.gov/statfacts/html/livibd.html>.
6. Qi X, Wang D, Su C, et al. Hepatic resection versus transarterial chemoembolization for the initial treatment of hepatocellular carcinoma: A systematic review and meta-analysis. *Oncotarget.* Jul 30 2015;6(21):18715-18733. PMID 26243835
7. Tian X, Dai Y, Wang DQ, et al. Transarterial chemoembolization versus hepatic resection in hepatocellular carcinoma treatment: a meta-analysis. *Drug Des Devel Ther.* Aug 2015;9:4431-4440. PMID 26309396
8. Oliveri RS, Wetterslev J, Gluud C. Transarterial (chemo)embolisation for unresectable hepatocellular carcinoma. *Cochrane Database Syst Rev.* Mar 16 2011(3):CD004787. PMID 21412886

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

9. Xie F, Zang J, Guo X, et al. Comparison of transcatheter arterial chemoembolization and microsphere embolization for treatment of unresectable hepatocellular carcinoma: a meta-analysis. *J Cancer Res Clin Oncol*. Mar 2012;138(3):455-462. PMID 22179199
10. Bush DA, Smith JC, Slater JD, et al. Randomized clinical trial comparing proton beam radiation therapy with transarterial chemoembolization for hepatocellular carcinoma: results of an interim analysis. *Int J Radiat Oncol Biol Phys*. May 1 2016;95(1):477-482. PMID 27084661
11. Mabed M, Esmael M, El-Khodary T, et al. A randomized controlled trial of transcatheter arterial chemoembolization with lipiodol, doxorubicin and cisplatin versus intravenous doxorubicin for patients with unresectable hepatocellular carcinoma. *Eur J Cancer Care (Engl)*. Sep 2009;18(5):492-499. PMID 19453695
12. Lo CM, Ngan H, Tso WK, et al. Randomized controlled trial of transarterial lipiodol chemoembolization for unresectable hepatocellular carcinoma. *Hepatology*. May 2002;35(5):1164-1171. PMID 11981766
13. Llovet JM, Real MI, Montana X, et al. Arterial embolisation or chemoembolisation versus symptomatic treatment in patients with unresectable hepatocellular carcinoma: a randomised controlled trial. *Lancet*. May 18 2002;359(9319):1734-1739. PMID 12049862
14. Biederman DM, Titano JJ, Korff RA, et al. Radiation segmentectomy versus selective chemoembolization in the treatment of early-stage hepatocellular carcinoma. *J Vasc Interv Radiol*. Jan 2018;29(1):30-37 e32. PMID 29169782
15. Molinari M, Kachura JR, Dixon E, et al. Transarterial chemoembolisation for advanced hepatocellular carcinoma: results from a North American cancer centre. *Clin Oncol (R Coll Radiol)*. Nov 2006;18(9):684-692. PMID 17100154
16. Takayasu K, Arii S, Ikai I, et al. Prospective cohort study of transarterial chemoembolization for unresectable hepatocellular carcinoma in 8510 patients. *Gastroenterology*. Aug 2006;131(2):461-469. PMID 16890600
17. Biselli M, Andreone P, Gramenzi A, et al. Transcatheter arterial chemoembolization therapy for patients with hepatocellular carcinoma: a case-controlled study. *Clin Gastroenterol Hepatol*. Sep 2005;3(9):918-925. PMID 16234031
18. Si T, Chen Y, Ma D, et al. Preoperative transarterial chemoembolization for resectable hepatocellular carcinoma in Asia area: a meta-analysis of random controlled trials. *Scand J Gastroenterol*. Dec 2016;51(12):1512-1519. PMID 27598831

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

19. Zhou Y, Zhang X, Wu L, et al. Meta-analysis: preoperative transcatheter arterial chemoembolization does not improve prognosis of patients with resectable hepatocellular carcinoma. *BMC Gastroenterol.* Mar 19 2013;13:51. PMID 23509884
20. Chua TC, Liauw W, Saxena A, et al. Systematic review of neoadjuvant transarterial chemoembolization for resectable hepatocellular carcinoma. *Liver Int.* Feb 2010;30(2):166-174. PMID 19912531
21. Kaibori M, Tanigawa N, Kariya S, et al. A prospective randomized controlled trial of preoperative whole-liver chemolipiodolization for hepatocellular carcinoma. *Dig Dis Sci.* May 2012;57(5):1404-1412. PMID 22271410
22. Zhou WP, Lai EC, Li AJ, et al. A prospective, randomized, controlled trial of preoperative transarterial chemoembolization for resectable large hepatocellular carcinoma. *Ann Surg.* Feb 2009;249(2):195-202. PMID 19212170
23. Yeh ML, Huang CI, Huang CF, et al. Neoadjuvant transcatheter arterial chemoembolization does not provide survival benefit compared to curative therapy alone in single hepatocellular carcinoma. *Kaohsiung J Med Sci.* Feb 2015;31(2):77-82. PMID 25645985
24. Choi GH, Kim DH, Kang CM, et al. Is preoperative transarterial chemoembolization needed for a resectable hepatocellular carcinoma? *World J Surg.* Dec 2007;31(12):2370-2377. PMID 17912587
25. Zhang Z, Liu Q, He J, et al. The effect of preoperative transcatheter hepatic arterial chemoembolization on disease-free survival after hepatectomy for hepatocellular carcinoma. *Cancer.* Dec 15 2000;89(12):2606-2612. PMID 11135222
26. Liao M, Zhu Z, Wang H, et al. Adjuvant transarterial chemoembolization for patients after curative resection of hepatocellular carcinoma: a meta-analysis. *Scand J Gastroenterol.* Jun - Jul 2017;52(6-7):624-634. PMID 28276833
27. Li Q, Wang J, Sun Y, et al. Efficacy of postoperative transarterial chemoembolization and portal vein chemotherapy for patients with hepatocellular carcinoma complicated by portal vein tumor thrombosis--a randomized study. *World J Surg.* Nov 2006;30(11):2004-2011; discussion 2012-2003. PMID 17058027
28. Li Q, Wang J, Sun Y, et al. Postoperative transhepatic arterial chemoembolization and portal vein chemotherapy for patients with hepatocellular carcinoma: a randomized study with 131 cases. *Dig Surg.* 2006;23(4):235-240. PMID 16943671
29. Zhong C, Guo RP, Li JQ, et al. A randomized controlled trial of hepatectomy with adjuvant transcatheter arterial chemoembolization versus hepatectomy alone for Stage III A

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

- hepatocellular carcinoma. *J Cancer Res Clin Oncol.* Oct 2009;135(10):1437-1445. PMID 19408012
30. Peng BG, He Q, Li JP, et al. Adjuvant transcatheter arterial chemoembolization improves efficacy of hepatectomy for patients with hepatocellular carcinoma and portal vein tumor thrombus. *Am J Surg.* Sep 2009;198(3):313-318. PMID 19285298
  31. Liu H, Wang ZG, Fu SY, et al. Randomized clinical trial of chemoembolization plus radiofrequency ablation versus partial hepatectomy for hepatocellular carcinoma within the Milan criteria. *Br J Surg.* Mar 2016;103(4):348-356. PMID 26780107
  32. Ako S, Nakamura S, Nouse K, et al. Transcatheter arterial chemoembolization to reduce size of hepatocellular carcinoma before radiofrequency ablation. *Acta Med Okayama.* Feb 2018;72(1):47-52. PMID 29463938
  33. Haochen W, Jian W, Li S, et al. Transarterial chemoembolization plus multi-imaging-guided radiofrequency ablation for elimination of hepatocellular carcinoma nodules measuring 3.1 to 5.0 cm: a single-center study. *J Int Med Res.* Jan 1 2018:300060518768420. PMID 29683022
  34. Bholee AK, Peng K, Zhou Z, et al. Radiofrequency ablation combined with transarterial chemoembolization versus hepatectomy for patients with hepatocellular carcinoma within Milan criteria: a retrospective case-control study. *Clin Transl Oncol.* Jul 2017;19(7):844-852. PMID 28070766
  35. Lan T, Chang L, Rahmathullah MN, et al. Comparative efficacy of interventional therapies for early-stage hepatocellular carcinoma: a PRISMA-compliant systematic review and network meta-analysis. *Medicine (Baltimore).* Apr 2016;95(15):e3185. PMID 27082558
  36. Li L, Tian J, Liu P, et al. Transarterial chemoembolization combination therapy vs monotherapy in unresectable hepatocellular carcinoma: a meta-analysis. *Tumori.* Jun 02 2016;2016(3):301-310. PMID 27002950
  37. Lu Z, Wen F, Guo Q, et al. Radiofrequency ablation plus chemoembolization versus radiofrequency ablation alone for hepatocellular carcinoma: a meta-analysis of randomized controlled trials. *Eur J Gastroenterol Hepatol.* Feb 2013;25(2):187-194. PMID 23134976
  38. Wang X, Hu Y, Ren M, et al. Efficacy and safety of radiofrequency ablation combined with transcatheter arterial chemoembolization for hepatocellular carcinomas compared with radiofrequency ablation alone: a time-to-event meta-analysis. *Korean J Radiol.* Jan-Feb 2016;17(1):93-102. PMID 26798221

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

39. Peng ZW, Zhang YJ, Liang HH, et al. Recurrent hepatocellular carcinoma treated with sequential transcatheter arterial chemoembolization and RF ablation versus RF ablation alone: a prospective randomized trial. *Radiology*. Feb 2012;262(2):689-700. PMID 22157201
40. Morimoto M, Numata K, Kondou M, et al. Midterm outcomes in patients with intermediate-sized hepatocellular carcinoma: a randomized controlled trial for determining the efficacy of radiofrequency ablation combined with transcatheter arterial chemoembolization. *Cancer*. Dec 01 2010;116(23):5452-5460. PMID 20672352
41. Shibata T, Isoda H, Hirokawa Y, et al. Small hepatocellular carcinoma: is radiofrequency ablation combined with transcatheter arterial chemoembolization more effective than radiofrequency ablation alone for treatment? *Radiology*. Sep 2009;252(3):905-913. PMID 19567647
42. Cheng BQ, Jia CQ, Liu CT, et al. Chemoembolization combined with radiofrequency ablation for patients with hepatocellular carcinoma larger than 3 cm: a randomized controlled trial. *JAMA*. Apr 09 2008;299(14):1669- 1677. PMID 18398079
43. DeAngelis CD, Fontanarosa PB. Retraction: Cheng B-Q, et al. Chemoembolization combined with radiofrequency ablation for patients with hepatocellular carcinoma larger than 3 cm: a randomized controlled trial. *JAMA*. 2008;299(14):1669-1677. *JAMA*. May 13 2009;301(18):1931. PMID 19380477
44. Yi Y, Zhang Y, Wei Q, et al. Radiofrequency ablation or microwave ablation combined with transcatheter arterial chemoembolization in treatment of hepatocellular carcinoma by comparing with radiofrequency ablation alone. *Chin J Cancer Res*. Feb 2014;26(1):112-118. PMID 24653633
45. Peng ZW, Zhang YJ, Chen MS, et al. Radiofrequency ablation with or without transcatheter arterial chemoembolization in the treatment of hepatocellular carcinoma: a prospective randomized trial. *J Clin Oncol*. Feb 01 2013;31(4):426-432. PMID 23269991
46. Organ Procurement and Transplantation Network (OPTN). Organ Distribution: Allocation of Livers. 2013. [http://optn.transplant.hrsa.gov/PoliciesandBylaws2/policies/pdfs/policy\\_8.pdf](http://optn.transplant.hrsa.gov/PoliciesandBylaws2/policies/pdfs/policy_8.pdf).
47. Organ Procurement and Transplantation Network (OPTN). OPTN Policies. 2018; [https://optn.transplant.hrsa.gov/media/1200/optn\\_policies.pdf#nameddest=Policy\\_09](https://optn.transplant.hrsa.gov/media/1200/optn_policies.pdf#nameddest=Policy_09).
48. Mazzaferro V, Regalia E, Doci R, et al. Liver transplantation for the treatment of small hepatocellular carcinomas in patients with cirrhosis. *N Engl J Med*. Mar 14 1996;334(11):693-699. PMID 8594428

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.





# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

49. Pomfret EA, Washburn K, Wald C, et al. Report of a national conference on liver allocation in patients with hepatocellular carcinoma in the United States. *Liver Transpl.* Mar 2010;16(3):262-278. PMID 20209641
50. Si T, Chen Y, Ma D, et al. Transarterial chemoembolization prior to liver transplantation for patients with hepatocellular carcinoma: A meta-analysis. *J Gastroenterol Hepatol.* Jul 2017;32(7):1286-1294. PMID 28085213
51. Graziadei IW, Sandmueller H, Waldenberger P, et al. Chemoembolization followed by liver transplantation for hepatocellular carcinoma impedes tumor progression while on the waiting list and leads to excellent outcome. *Liver Transpl.* Jun 2003;9(6):557-563. PMID 12783395
52. Maddala YK, Stadheim L, Andrews JC, et al. Drop-out rates of patients with hepatocellular cancer listed for liver transplantation: outcome with chemoembolization. *Liver Transpl.* Mar 2004;10(3):449-455. PMID 15004776
53. Obed A, Beham A, Pullmann K, et al. Patients without hepatocellular carcinoma progression after transarterial chemoembolization benefit from liver transplantation. *World J Gastroenterol.* Feb 7 2007;13(5):761-767. PMID 17278200
54. Yao FY. Liver transplantation for hepatocellular carcinoma: beyond the Milan criteria. *Am J Transplant.* Oct 2008;8(10):1982-1989. PMID 18727702
55. Lewandowski RJ, Kulik LM, Riaz A, et al. A comparative analysis of transarterial downstaging for hepatocellular carcinoma: chemoembolization versus radioembolization. *Am J Transplant.* Aug 2009;9(8):1920-1928. PMID 19552767
56. Gabr A, Abouchaleh N, Ali R, et al. Comparative study of post-transplant outcomes in hepatocellular carcinoma patients treated with chemoembolization or radioembolization. *Eur J Radiol.* Aug 2017;93:100-106. PMID 28668402
57. Park SY, Kim JH, Yoon HJ, et al. Transarterial chemoembolization versus supportive therapy in the palliative treatment of unresectable intrahepatic cholangiocarcinoma. *Clin Radiol.* Apr 2011;66(4):322-328. PMID 21356394
58. Boehm LM, Jayakrishnan TT, Miura JT, et al. Comparative effectiveness of hepatic artery based therapies for unresectable intrahepatic cholangiocarcinoma. *J Surg Oncol.* Feb 2015;111(2):213-220. PMID 25176325
59. Knppel M, Kubicka S, Vogel A, et al. Combination of conservative and interventional therapy strategies for intra- and extrahepatic cholangiocellular carcinoma: a retrospective survival analysis. *Gastroenterol Res Pract.* Jul 2012;2012:190708. PMID 21776251

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

60. Shen WF, Zhong W, Liu Q, et al. Adjuvant transcatheter arterial chemoembolization for intrahepatic cholangiocarcinoma after curative surgery: retrospective control study. *World J Surg.* Sep 2011;35(9):2083-2091. PMID 21698503
61. Nazario J, Gupta S. Transarterial liver-directed therapies of neuroendocrine hepatic metastases. *Semin Oncol.* Apr 2010;37(2):118-126. PMID 20494704
62. Ruutiainen AT, Soulen MC, Tuite CM, et al. Chemoembolization and bland embolization of neuroendocrine tumor metastases to the liver. *J Vasc Interv Radiol.* Jul 2007;18(7):847-855. PMID 17609443
63. Gupta S, Yao JC, Ahrar K, et al. Hepatic artery embolization and chemoembolization for treatment of patients with metastatic carcinoid tumors: the M.D. Anderson experience. *Cancer J.* Jul-Aug 2003;9(4):261-267. PMID 12967136
64. Osborne DA, Zervos EE, Strosberg J, et al. Improved outcome with cytoreduction versus embolization for symptomatic hepatic metastases of carcinoid and neuroendocrine tumors. *Ann Surg Oncol.* Apr 2006;13(4):572- 581. PMID 16511671
65. Sato T. Locoregional management of hepatic metastasis from primary uveal melanoma. *Semin Oncol.* Apr 2010;37(2):127-138. PMID 20494705
66. Huppert PE, Fierlbeck G, Pereira P, et al. Transarterial chemoembolization of liver metastases in patients with uveal melanoma. *Eur J Radiol.* Jun 2010;74(3):e38-44. PMID 19467811
67. Sharma KV, Gould JE, Harbour JW, et al. Hepatic arterial chemoembolization for management of metastatic melanoma. *AJR Am J Roentgenol.* Jan 2008;190(1):99-104. PMID 18094299
68. Bedikian AY, Legha SS, Mavligit G, et al. Treatment of uveal melanoma metastatic to the liver: a review of the M. D. Anderson Cancer Center experience and prognostic factors. *Cancer.* Nov 1 1995;76(9):1665-1670. PMID 8635073
69. Patel K, Sullivan K, Berd D, et al. Chemoembolization of the hepatic artery with BCNU for metastatic uveal melanoma: results of a phase II study. *Melanoma Res.* Aug 2005;15(4):297-304. PMID 16034309
70. Zacharias AJ, Jayakrishnan TT, Rajeev R, et al. Comparative effectiveness of hepatic artery based therapies for unresectable colorectal liver metastases: a meta-analysis. *PLoS One.* Oct 2015;10(10):e0139940. PMID 26448327
71. Richardson AJ, Laurence JM, Lam VW. Transarterial chemoembolization with irinotecan beads in the treatment of colorectal liver metastases: systematic review. *J Vasc Interv Radiol.* Aug 2013;24(8):1209-1217. PMID 23885916

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

72. Riemsma RP, Bala MM, Wolff R, et al. Percutaneous ethanol injection for liver metastases. *Cochrane Database Syst Rev*. May 31 2013(5):CD008717. PMID 23728679
73. Fiorentini G, Aliberti C, Tilli M, et al. Intra-arterial infusion of irinotecan-loaded drug-eluting beads (DEBIRI) versus intravenous therapy (FOLFIRI) for hepatic metastases from colorectal cancer: final results of a phase III study. *Anticancer Res*. Apr 2012;32(4):1387-1395. PMID 22493375
74. Martin RC, 2nd, Scoggins CR, Schreeder M, et al. Randomized controlled trial of irinotecan drug-eluting beads with simultaneous FOLFOX and bevacizumab for patients with unresectable colorectal liver-limited metastasis. *Cancer*. Oct 15 2015;121(20):3649-3658. PMID 26149602
75. Vogl TJ, Gruber T, Balzer JO, et al. Repeated transarterial chemoembolization in the treatment of liver metastases of colorectal cancer: prospective study. *Radiology*. Jan 2009;250(1):281-289. PMID 19092099
76. Vogl TJ, Mack MG, Balzer JO, et al. Liver metastases: neoadjuvant downsizing with transarterial chemoembolization before laser-induced thermotherapy. *Radiology*. Nov 2003;229(2):457-464. PMID 14500854
77. Hong K, McBride JD, Georgiades CS, et al. Salvage therapy for liver-dominant colorectal metastatic adenocarcinoma: comparison between transcatheter arterial chemoembolization versus yttrium-90 radioembolization. *J Vasc Interv Radiol*. Mar 2009;20(3):360-367. PMID 19167245
78. Vogl TJ, Naguib NN, Nour-Eldin NE, et al. Transarterial chemoembolization (TACE) with mitomycin C and gemcitabine for liver metastases in breast cancer. *Eur Radiol*. Jan 2010;20(1):173-180. PMID 19657653
79. National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): Hepatobiliary Cancers, Version 2.2019. Updated March 6, 2019. [https://www.nccn.org/professionals/physician\\_gls/pdf/hepatobiliary.pdf](https://www.nccn.org/professionals/physician_gls/pdf/hepatobiliary.pdf).
80. National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): Neuroendocrine and Adrenal Tumors, Version 1.2019. Updated March 5, 2019. [https://www.nccn.org/professionals/physician\\_gls/pdf/neuroendocrine.pdf](https://www.nccn.org/professionals/physician_gls/pdf/neuroendocrine.pdf).
81. National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): Colon Cancer, Version 2.2019. Updated May 15, 2019. [https://www.nccn.org/professionals/physician\\_gls/pdf/colon.pdf](https://www.nccn.org/professionals/physician_gls/pdf/colon.pdf).

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

82. National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): Breast Cancer, Version 1.2019. Updated March 14, 2019. [https://www.nccn.org/professionals/physician\\_gls/pdf/breast.pdf](https://www.nccn.org/professionals/physician_gls/pdf/breast.pdf).

## **Policy History**

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

03/12/2008 Medical Director review

03/19/2008 Medical Policy Committee approval.

03/04/2009 Medical Director review

03/18/2009 Medical Policy Committee approval. No change to coverage.

06/03/2010 Medical Policy Committee approval

06/16/2010 Medical Policy Implementation Committee approval. Coverage eligibility unchanged.

05/05/2011 Medical Policy Committee review

05/18/2011 Medical Policy Implementation Committee approval. Added that the use of transcatheter hepatic arterial chemoembolization as neoadjuvant or adjuvant therapy in hepatocellular cancer that is considered resectable is considered to be investigational.

05/03/2012 Medical Policy Committee review

05/16/2012 Medical Policy Implementation Committee approval. Added that TACE for unresectable cholangio-carcinoma is considered investigational. Revised the format of the remaining investigational statements while preserving their intent.

05/02/2013 Medical Policy Committee review

05/22/2013 Medical Policy Implementation Committee approval. Format Coverage eligibility unchanged.

05/01/2014 Medical Policy Committee review

05/21/2014 Medical Policy Implementation Committee approval. Coverage eligibility unchanged.

05/07/2015 Medical Policy Committee review

05/20/2015 Medical Policy Implementation Committee approval. Coverage eligibility unchanged

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

- 08/03/2015 Coding update: ICD10 Diagnosis code section added; ICD9 Procedure code section removed.
- 05/05/2016 Medical Policy Committee review
- 05/18/2016 Medical Policy Implementation Committee approval. Coverage eligibility unchanged
- 01/01/2017 Coding update: Removing ICD-9 Diagnosis Codes
- 05/04/2017 Medical Policy Committee review
- 05/17/2017 Medical Policy Implementation Committee approval. Coverage eligibility unchanged
- 05/03/2018 Medical Policy Committee review
- 05/16/2018 Medical Policy Implementation Committee approval. Changed formatting from one statement to bulleted conditions in the “When Services Are Eligible for Coverage” section. Changed formatting by grouping individual coverage statements into 2 separate coverage statements for TACE with criteria by adding a “When Services May Be Eligible for Coverage” section. Added “Child-Pugh class is either A or B” as criteria for TACE to treat HCC. Replaced “hepatic” with “of the liver” in all statements in the coverage section. Added a link for the Child-Pugh Score calculator in the coverage section.
- 05/02/2019 Medical Policy Committee review
- 05/15/2019 Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
- 11/21/2019 Minor revision for clarity changing “and” to “or” to separate bulleted conditions that are eligible for coverage for transcatheter arterial chemoembolization (TACE) of the liver to treat patients.
- 12/10/2019 Coding update
- 05/07/2020 Medical Policy Committee review
- 05/13/2020 Medical Policy Implementation Committee approval. Coverage eligibility unchanged.

Next Scheduled Review Date: 05/2021

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

## **Coding**

*The five character codes included in the Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines are obtained from Current Procedural Terminology (CPT®)†, copyright 2019 by the American Medical Association (AMA). CPT is developed by the AMA as a listing of descriptive terms and five character identifying codes and modifiers for reporting medical services and procedures performed by physician.*

*The responsibility for the content of Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines is with Blue Cross and Blue Shield of Louisiana and no endorsement by the AMA is intended or should be implied. The AMA disclaims responsibility for any consequences or liability attributable or related to any use, nonuse or interpretation of information contained in Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines. Fee schedules, relative value units, conversion factors and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein. Any use of CPT outside of Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines should refer to the most current Current Procedural Terminology which contains the complete and most current listing of CPT codes and descriptive terms. Applicable FARS/DFARS apply.*

CPT is a registered trademark of the American Medical Association.

Codes used to identify services associated with this policy may include (but may not be limited to) the following:

Code Type	Code
CPT	37243, 75894
HCPCS	Q0083 Code added eff 1/1/2020: C1982
ICD-10 Diagnosis	C22.0-C22.9, C78.7

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

## Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

\*Investigational – A medical treatment, procedure, drug, device, or biological product is Investigational if the effectiveness has not been clearly tested and it has not been incorporated into standard medical practice. Any determination we make that a medical treatment, procedure, drug, device, or biological product is Investigational will be based on a consideration of the following:

- A. Whether the medical treatment, procedure, drug, device, or biological product can be lawfully marketed without approval of the U.S. Food and Drug Administration (FDA) and whether such approval has been granted at the time the medical treatment, procedure, drug, device, or biological product is sought to be furnished; or
- B. Whether the medical treatment, procedure, drug, device, or biological product requires further studies or clinical trials to determine its maximum tolerated dose, toxicity, safety, effectiveness, or effectiveness as compared with the standard means of treatment or diagnosis, must improve health outcomes, according to the consensus of opinion among experts as shown by reliable evidence, including:
  1. Consultation with the Blue Cross and Blue Shield Association technology assessment program (TEC) or other nonaffiliated technology evaluation center(s);
  2. Credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community; or
  3. Reference to federal regulations.

\*\*Medically Necessary (or “Medical Necessity”) - Health care services, treatment, procedures, equipment, drugs, devices, items or supplies that a Provider, exercising prudent clinical judgment, would provide to a patient for the purpose of preventing, evaluating, diagnosing or treating an illness, injury, disease or its symptoms, and that are:

- A. In accordance with nationally accepted standards of medical practice;
- B. Clinically appropriate, in terms of type, frequency, extent, level of care, site and duration, and considered effective for the patient's illness, injury or disease; and
- C. Not primarily for the personal comfort or convenience of the patient, physician or other health care provider, and not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of that patient's illness, injury or disease.

For these purposes, “nationally accepted standards of medical practice” means standards that are based on credible scientific evidence published in peer-reviewed medical literature generally

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.



# Louisiana

Transcatheter Arterial Chemoembolization (TACE) to Treat Primary or Metastatic Liver Malignancies

Policy # 00227

Original Effective Date: 03/19/2008

Current Effective Date: 06/08/2020

recognized by the relevant medical community, Physician Specialty Society recommendations and the views of Physicians practicing in relevant clinical areas and any other relevant factors.

‡ Indicated trademarks are the registered trademarks of their respective owners.

**NOTICE:** If the Patient's health insurance contract contains language that differs from the BCBSLA Medical Policy definition noted above, the definition in the health insurance contract will be relied upon for specific coverage determinations.

**NOTICE:** Medical Policies are scientific based opinions, provided solely for coverage and informational purposes. Medical Policies should not be construed to suggest that the Company recommends, advocates, requires, encourages, or discourages any particular treatment, procedure, or service, or any particular course of treatment, procedure, or service.

©2020 Blue Cross and Blue Shield of Louisiana

Blue Cross and Blue Shield of Louisiana is an independent licensee of the Blue Cross and Blue Shield Association and incorporated as Louisiana Health Service & Indemnity Company.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from Blue Cross and Blue Shield of Louisiana.