

## Transcatheter Hepatic Arterial Chemoembolization

### DESCRIPTION

Transcatheter arterial chemoembolization (TACE) was developed as an alternative to conventional systemic or intra-arterial chemotherapy. Transcatheter hepatic arterial chemoembolization has been investigated as a treatment of isolated liver metastases and for hepatocellular carcinoma.

The rationale for TACE is that infusions of viscous material will occlude arterial blood, causing an infarct and subsequent necrosis of tumors in the infarcted region. The cytotoxic effect of arterial occlusion can be potentiated by labeling the infusion with radioactive isotopes or by adding cytotoxic drugs. The liver is especially amenable to such an approach given the distinct lobular anatomy of the liver, the existence of two independent blood supplies, and the ability of healthy hepatic tissue to compensate for tissue mass lost during chemoembolization. Another rationale is that TACE provides for effective local dose intensity while avoiding systemic toxicities associated with intravenous chemotherapy. However, TACE of the liver is associated with its own constellation of potentially life-threatening toxicities and complications, such as severe postembolization syndrome, hepatic insufficiency, abscess, or infarction.

The chemoembolization procedure requires hospitalization. Prior to the procedure, the patency of the portal vein must be demonstrated in order to ensure an adequate post-treatment hepatic blood supply. 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 from 5 days to 6 weeks later. In addition, since the embolized vessel recanalizes, chemoembolization can be repeated as many times as necessary.

### POLICY

- Transcatheter hepatic arterial chemoembolization for the treatment of surgically unresectable hepatocellular carcinoma is considered **medically necessary** if the medical appropriateness criteria are met. **(See Medical Appropriateness below.)**
- Transcatheter hepatic arterial chemoembolization for the treatment of metastatic neuroendocrine tumors is considered **medically necessary** if the medical appropriateness criteria are met. **(See Medical Appropriateness below.)**
- Transcatheter hepatic arterial chemoembolization for the treatment of liver-dominant metastatic uveal melanoma is considered **medically necessary**.
- Transcatheter hepatic arterial chemoembolization as a bridge to transplant in individuals with hepatocellular cancer where the intent is to prevent further tumor growth and to maintain an individual's candidacy for liver transplant is considered **medically necessary** if the medical appropriateness criteria are met. **(See Medical Appropriateness below.)**
- Transcatheter hepatic arterial chemoembolization, for all other indications, is considered **investigational**.

### MEDICAL APPROPRIATENESS

- Transcatheter hepatic arterial chemoembolization is considered **medically appropriate** if **ALL** of the following criteria are met:



- **ANY ONE** of the following:
  - For the treatment of surgically unresectable hepatocellular carcinoma
  - For the treatment of metastatic neuroendocrine tumors with **ALL** of the following:
    - Individuals whose symptoms persist despite systemic therapy
    - Individuals who are not candidates for surgical resection
  - As a bridge to transplant in individual's with hepatocellular cancer where the intent is to prevent further tumor growth and to maintain an individual's candidacy for liver transplant
- **ALL** of the following criteria are met:
  - Individual must have a Child-Pugh score A or Child-Pugh score B liver function
  - Individual must have a negative metastatic evaluation (should included negative chest x-ray, CT or MRI of the abdomen)
  - Individual should have a single tumor, 5 cm or less in diameter, or no more than 3 tumors each, 3 cm in diameter
  - Portal venous flow to the affected area of the liver must be demonstrated prior to the procedure

## ADDITIONAL INFORMATION

[Child-Pugh score](#) is a scoring system for liver function based on the presence of encephalopathy and/or ascites, and laboratory measures of bilirubin, albumin, and prothrombin time.

There is lack of randomized controlled trials that provide evidence of the efficacy of transcatheter hepatic arterial chemoembolization for other indications.

## SOURCES

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