



# Interventional Radiology in Oncology: Clinical Management of Patients Undergoing Transarterial Chemoembolization for Hepatic Malignancies

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Interventional radiology procedures treat a variety of solid tumor malignancies. Transarterial chemoembolization (TACE) is a minimally invasive procedure performed under fluoroscopic guidance that is used in treatment of hepatic malignancies because of hepatocellular carcinoma or malignancy that has metastasized to the liver. Patients undergoing a TACE procedure may manifest postembolization symptoms such as fever, nausea, vomiting, and abdominal pain, which may persist after discharge. Patients need to be educated on the importance of compliance with prescribed medications, clinical symptoms to be expected, and signs of potential complications that need to be reported.

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Digital Object Identifier: 10.1188/12.CJON.83-85

**T**ransarterial chemoembolization (TACE) is a local, catheter-based, minimally invasive therapeutic option for unresectable liver tumors (Brown et al., 2006). As a treatment modality in hepatocellular carcinoma, TACE is used to bridge the waiting time between diagnosis and liver transplantation. Other TACE indications include control of tumor burden and palliation for symptom management in hepatic malignancies (Sofocleous & Nascimento, 2008).

## Pretreatment

The decision to treat a patient with TACE requires multidisciplinary consideration. The process is initiated with a referral from medical oncology, hepatology, or liver transplantation services to interventional radiology. Latest imaging studies, such as a triple-phase computerized axial tomography (CAT) scan, liver ultrasound, or magnetic resonance imaging (MRI), are reviewed by the multidisciplinary team, including the interventional radiologist, to confirm criteria for undergoing TACE.

For example, in patients with thrombosed portal veins, the hepatic arteries are the main nutritional support for the liver parenchyma. Embolization of hepatic arteries in those patients can be devastating (Atherton, Beheshti, Meek, & Culp, 2010). Upon confirming TACE as a viable treatment option, a consultation visit with the interventional radiology team is scheduled.

On the day of consultation, the patient meets with the nurse practitioner and interventional radiologist. Evaluating patients with cancer in the interventional radi-

ology clinic is critical prior to scheduling the TACE procedure. During that visit, a medical history is taken, physical examination is performed, appropriate imaging and laboratory studies are reviewed, and the risks and benefits of TACE are discussed with the patient. The expectations of the patient, family, referring physician, and interventional radiologist are established (Brown et al., 2006). The consultation allows for adequate time to educate the patient and explain the procedure and what to expect after the procedure. Patients are encouraged to ask questions and verbalize any concerns.

Patients with hepatic malignancies can present with liver disease-associated symptoms such as fatigue, ascites, jaundice, and hepatic encephalopathy (Zhu, 2008). The interventional radiology

TABLE 1. ECOG Performance Status

| Grade | ECOG                                                                                                                                                       |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0     | Fully active, able to carry on all predisease performance without restriction                                                                              |
| 1     | Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature (e.g., light house work, office work) |
| 2     | Ambulatory and capable of all self-care but unable to carry out any work activities; up and about more than 50% of waking hours                            |
| 3     | Capable of only limited self-care; confined to bed or chair more than 50% of waking hours                                                                  |
| 4     | Completely disabled; cannot carry on any self-care; totally confined to bed or chair                                                                       |
| 5     | Dead                                                                                                                                                       |

ECOG—Eastern Cooperative Oncology Group

Note. From "Toxicity and Response Criteria of the Eastern Cooperative Oncology Group," by M.M. Oken, R.H. Creech, D.C. Tormey, J. Horton, T.E. Davis, E.T. McFadden, & P.P. Carbone, 1982, *American Journal of Clinical Oncology*, 5, p. 654. Courtesy of ECOG, Robert Comis, MD, group chair.