Survival and Adverse Events of Transarterial Chemoembolization vs Radioembolization in Cholangiocarcinoma

Authors: Nikitha Harikumar, BS[1]; Quincy Tran MD, PhD, FACEP, FCCM[2,3], Navesh Sharma, DO, PhD, FACO[4]; Rahul Kashyap MBBS, MBA, FCCM[1, 5]

Affiliations:

1. Drexel University College of Medicine, Philadelphia, PA, USA
2. Department of Emergency Medicine, University of Maryland School of Medicine, Baltimore, MD, USA
3. Program in Trauma, R Adam Cowley Shock Trauma Center, University of Maryland School of Medicine, Baltimore, MD, USA
4. Department of Radiation Oncology, Wellspan Health, York, PA, USA
5. Department of Research, Wellspan Health, York, PA, USA

Objectives

Cholangiocarcinoma (CCA) is an aggressive malignancy of the biliary tract that is increasingly rising in incidence across the US. Intra-arterial therapies (IAT) such as transarterial radioembolization (TARE) and transarterial chemoembolization (TACE) have recently emerged as management options for unresectable disease, but there is limited data on outcomes of these interventions specifically in CCA. We aim to assess differences in overall survival and adverse events between TACE and TARE in patients with unresectable CCA. We hypothesized that outcomes were similar between modalities.

Methods

We conducted a retrospective cohort study using the TriNetX Global Research Network, a federated multi-institutional database with de-identified patient data. Patients with unresectable CCA who underwent TACE or TARE were identified using ICD-10, CPT and SNOMED codes, and patients with hepatocellular carcinoma and gallbladder malignancy were excluded. The index event was defined as the first documented IAT procedure, and outcomes were measured up to 1 year after. The cohorts were balanced with 1:1 propensity score matching based on age, diagnosis, sex, race, ethnicity, prior hepatectomy and comorbidities including diabetes, hypertension, and cirrhosis. The primary outcome measured was overall survival at 3, 6, and 12 months. Secondary outcomes included number of hospitalizations and hepato-biliary adverse events.

Results

After matching, a total of 2778 patients, 1389 per group, were included. Between these groups, overall one-year survival was not statistically different (HR 0.94, 95%CI 0.81-1.09, P= 0.31). Additionally, no differences were found in related hepatobiliary adverse events: liver failure (OR 1.02, 95%CI 0.81-1.29, P=0.87), biliary obstruction (OR 0.95, 95% CI 0.71-1.29, P= 0.77), ascites (OR 0.98, 95%CI 0.86-1.13, P=0.81), portal hypertension (OR 1.03, 95% CI 0.81-1.30, P=0.84), hepatic encephalopathy (OR 1, 95% CI 0.65- 1.53, P=1), cholangitis (OR 1.03, 95% CI 0.71-1.49, 0.88). Sepsis (OR 1.04, 95%CI 0.84-1.27, P=0.74) and hospitalizations (OR 1.03, 95%CI 0.82-1.29, P=0.8) after TACE or TARE similarly showed no differences either.

Conclusion

In adult patients with cholangiocarcinoma, treatment with TACE and TARE hold similar survival outcomes at one-year follow-up without a clear advantage. Treatment decisions should rather be made on a more individualized basis.