Propensity Matched Analysis of Patients with Mixed Hepatocellular-Cholangiocarcinoma, Intrahepatic Cholangiocarcinoma, and Hepatocellular Carcinoma Undergoing Resection

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Mixed hepatocellular-cholangiocarcinoma (HCC-CC) is part of a spectrum of primary liver tumors that arise primarily in patients with underlying chronic liver disease and exhibit varying degrees of hepatocellular and biliary differentiation. The limited literature concerning these tumors suggests a poor prognosis. The aim of this analysis was to report outcomes in a Western cohort of patients with mixed HCC-CC who underwent resection, and compare outcomes to pure intrahepatic cholangiocarcinoma (ICC) and hepatocellular carcinoma (HCC).

Methods

A retrospective review identified 47 patients with mixed HCC-CC who underwent resection from 2001-2014. Patients with HCC-CC were propensity score-matched 1:8 to HCC (n=637) and 1:1 to ICC (n=121) on pathologic tumor size. To account for the effects of underlying cirrhosis, a second match was performed matching HCC-CC 1:3 to HCC (n=141) on tumor size and histologic cirrhosis. Comparative outcomes for all patients with early-stage tumors (≤5cm) were also evaluated.

Results

- Overall 1-, 3-, and 5-year survival rates for mixed HCC-CC were 89%, 69%, and 50% with a median time to recurrence of 24.6 months.
- Patients with early-stage (≤5cm) tumors (mixed HCC-CC=24, ICC=31, HCC=238) had similar 5-year overall survival (62% vs. 64% vs. 78%, p=0.65)
- Compared to HCC matched 1:8 on pathologic tumor size (n=376), mixed HCC-CC had more poorly differentiated tumors (68% vs. 26%, p<0.01)
- Overall survival between mixed HCC-CC, HCC, and ICC matched on tumor size was similar at 5-years (50% vs. 53% vs. 60%, p=0.15)
- Compared to ICC matched 1:1 on pathologic tumor size (n=47), mixed HCC-CC had higher rates of underlying cirrhosis (43% vs. 11%, p<0.01) and more poorly differentiated tumors (68% vs. 40%, p=0.02)
- Disease-free survival rates at 5 years for mixed HCC-CC, HCC, and ICC were 42%, 36%, and 38%, respectively (p=0.57)

Conclusion

Patients with mixed HCC-CC can achieve acceptable long-term outcomes following resection, comparable to HCC and ICC with similar tumor size. Further, the presence of underlying cirrhosis does not adversely affect post-resection outcomes for mixed HCC-CC, compared to those with HCC. Recurrence and survival are likewise similar for early-stage HCC-CC, HCC, and ICC following resection.