

Supplementary Figure 1: Intrahepatic CCA staging is conducted most commonly in accordance with the TNM staging classification of the American Joint Committee on Cancer (AJCC)/Union for International Cancer Control (UICC). As of 2018, the staging criteria are in their 8th edition and reflected below

Primary tumour (T)

TX: primary tumour cannot be assessed

T0: no evidence of primary tumour

Tis: carcinoma in situ (intraductal tumour)

T1: solitary tumour without vascular invasion

T1a: solitary tumour ≤ 5 cm without vascular invasion

T1b: solitary tumour > 5 cm without vascular invasion

T2:

solitary tumour with intrahepatic vascular invasion or,
multiple tumours, with or without vascular invasion

T3: tumour perforating the visceral peritoneum

T4: tumour involving local extrahepatic structures by direct invasion

Regional lymph node (N)

NX: regional lymph nodes cannot be assessed

N0: no regional lymph node metastasis

N1: regional lymph node metastasis present

Distant metastases (M)

cM0: no evidence of metastases

cM1: distant metastasis

pM1: distant metastasis, microscopically confirmed

Stage groups

stage 0

Tis, N0, M0

stage IA

T1a, N0, M0

stage IB

T1b, N0, M0

stage II

T2, N0, M0

stage IIIA

T3, N0, M0

stage IIIB

T4, N0, M0

[Any T], N1, M0

stage IV

[Any T], [Any N], M1

Prognosis

The 5-year survival for each stage of iCCA in the AJCC 8th edition is as follows:

stage IA: 58%

stage IB: 45%

stage II: 31%

stage IIIA: 24%

stage IIIB: 12%

stage IV: 9%

Supplementary Figure 2: Perihilar CCA staging is, for prognostication, most commonly conducted using the TNM staging classification of the American Joint Committee on Cancer (AJCC)/Union for International Cancer Control (UICC).

Primary tumour (T)

TX: primary tumour cannot be assessed

T0: no evidence of primary tumour

Tis: carcinoma in situ/high-grade dysplasia

T1: tumour confined to the bile duct, with extension up to the muscle layer or fibrous tissue

T2:

T2a: tumour invades beyond the wall of the bile duct to surrounding adipose tissue

T2b: tumour invades adjacent hepatic parenchyma

T3: tumour invades unilateral branches of the portal vein or hepatic artery

T4:

tumour invades the main portal vein or its branches bilaterally, or

unilateral second-order biliary radicals with contralateral portal vein or hepatic artery involvement

Regional lymph node (N)

The regional lymph nodes are hilar, cystic duct, common bile duct, hepatic artery, posterior pancreaticoduodenal, and portal vein lymph nodes.

NX: regional lymph nodes cannot be assessed

N0: no regional lymph node metastasis

N1: 1-3 positive regional lymph nodes

N2: 4 or more positive regional lymph nodes

Distant metastases (M)

cM0: no evidence of metastases

cM1: distant metastasis

pM1: distant metastasis, microscopically confirmed

Stage groups

stage 0

Tis, N0, M0

stage I

T1, N0, M0

stage II

[T2a, T2b], N0, M0

stage IIIA

T3, N0, M0

stage IIIB

T4, N0, M0

stage IIIC

[Any T], N1, M0

stage IVA

[Any T], N2, M0

stage IVB

[Any T], [Any N], M1

Supplementary Figure 3: Distal CCA staging is defined according to the TNM staging classification of the American Joint Committee on Cancer (AJCC)/Union for International Cancer Control (UICC). As of 2018, the staging criteria are in their 8th edition and reflected below

Primary tumour (T)

TX: primary tumour cannot be assessed

Tis: carcinoma in situ/high-grade dysplasia

T1: tumour invades the bile duct wall with depth <5 mm

T2: tumour invades the bile duct wall with depth 5–12 mm

T3: tumour invades the bile duct wall with depth >12 mm

T4: tumour involves the coeliac axis, superior mesenteric artery, and/or common hepatic artery

Regional lymph node (N)

NX: regional lymph nodes cannot be assessed

N0: no regional lymph node metastasis

N1: 1-3 positive regional lymph nodes

N2: 4 or more positive regional lymph nodes

Distant metastases (M)

cM0: no evidence of metastases

cM1: distant metastasis

pM1: distant metastasis, microscopically confirmed

Stage groups

stage 0

Tis, N0, M0

stage I

T1, N0, M0

stage IIA

T1, N1, M0

T2, N0, M0

stage IIB

T2, N1, M0

T3, [N0, N1], M0

stage IIIA

[T1, T2, T3], N2, M0

stage IIIB

T4, [N0, N1, N2], M0

stage IV

[Any T], [Any N], M1