

Supplementary Table 1. Biliary tract cancers TNM UICC-AJCC classification (8<sup>th</sup> edition, 2017)

		Cholangiocarcinoma			Gallbladder cancer (including cystic duct)	
		Intrahepatic	Perihilar	Distal		
<b>T</b>	<b>TX</b>	Primary tumor cannot be assessed				
	<b>T0</b>	No evidence of primary tumor				
	<b>Tis</b>	Carcinoma <i>in situ</i> (intraductal tumor)	Carcinoma <i>in situ</i> , high grade dysplasia		Carcinoma <i>in situ</i>	
	<b>T1</b>	Unique tumor without vascular invasion	Tumor invading bile duct wall until the muscle layer or the fibrous tissue	Tumor invading bile duct wall to a depth < 5 mm	Tumor invading bile duct wall	
		<b>T1a</b> ≤ 5 cm on major axis			<b>T1a</b>	Until the lamina propria
		<b>T1b</b> > 5 cm on major axis			<b>T1b</b>	Until the muscular layer
	<b>T2</b>	Unique tumor with vascular invasion or multiple tumors (with or without vascular invasion)	Tumor invasion beyond the bile duct wall		Tumor invading the perimuscular connective tissue	
<b>T2a</b>			until adipose tissue	<b>T2a</b>	with no extension beyond the serosa (peritoneal side)	
<b>T2b</b>			until adjacent liver		<b>T2b</b>	with no extension beyond the liver (hepatic side)
<b>T3</b>	Tumor perforating visceral peritoneum	Tumor invading unilateral branches of the portal vein or the hepatic artery		Tumor invading bile duct wall to a depth >12 mm	Tumor perforating the visceral peritoneum and/or directly invading the liver and/or other adjacent organ or structure (stomach, duodenum, colon, pancreas, omentum or	

					extrahepatic bile ducts)
	<b>T4</b>	Tumor invading extrahepatic structures via direct hepatic invasion	Tumor invading the main portal vein or its branches bilaterally; or the common hepatic artery; or second-order biliary radicals bilaterally; or unilateral second-order biliary radicals with contralateral portal vein or hepatic artery	Tumor invading the coeliac trunk, superior mesenteric artery and/or the common hepatic artery	Tumor invading the main portal vein or the common hepatic artery or two or more extrahepatic organs or structures
<b>N</b>	<b>NX</b>	Regional lymph nodes cannot be assessed			
	<b>N0</b>	No regional lymph node metastasis			
	<b>N1</b>	Regional lymph node(s) invasion	1 to 3 regional lymph nodes invasion		
	<b>N2</b>	-	≥ 4 regional lymph nodes invasion		
<b>M</b>	<b>M0</b>	No distant metastasis			
	<b>M1</b>	Distant metastasis			

**Supplementary Table 2. Biliary tract cancers prognostic stages according toTNM UICC-AJCC classification.**

dCCA, distal cholangiocarcinoma; GBC, Gallbladder carcinoma; iCCA, intrahepatic cholangiocarcinoma; pCCA, perihilar cholangiocarcinoma.

\* Any T. \*\* Any N. \*\*\* Any T, any N.

Stages	iCCA		pCCA		dCCA		GBC	
<b>0</b>	-		TisN0M0					
<b>I</b>	IA	T1aN0M0	T1N0M0				IA	T1aN0M0
	IB	T1bN0M0					IB	T1bN0M0
<b>II</b>	T2N0M0		T2a-bN0M0		IIA	T2N0M0 T1N1M0	IIA	T2aN0M0
					IIB	T2N1M0 T3N0-N1M0	IIB	T2bN0M0
<b>III</b>	IIIA	T3N0M0	IIIA	T3N0M0	IIIA	T1-3N2M0	IIIA	T3N0M0
	IIIB	T4N0M0 N1M0*	IIIB	T4N0M0	IIIB	T4M0**	IIIB	T1-3N1M0
			IIIC	N1M0*				
<b>IV</b>	M1***		IVA	N2M0*	M1***		IVA	T4N0-N1M0
			IVB	M1***			IVB	N2M0* M1***