

Medical management only	May be appropriate	Strong	N/A	N/A	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		References				Study Quality															
		32 (24914504)				2															
		33 (27981301)				1															
		34 (15565569)				1															
Permanent biliary metallic stent	Usually not appropriate	Limited	N/A	N/A	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		References				Study Quality															
		11 (21684464)				4															
		40 (20630513)				3															
Removable biliary covered stent	Usually not appropriate	Limited	N/A	N/A	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		References				Study Quality															
		40 (20630513)				3															

Variant 3: Initial therapeutic procedure for a liver transplant recipient with elevated bilirubin and suspected biliary anastomotic stenosis or bile leak, with no dilated ducts.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations														
							1	2	3	4	5	6	7	8	9						
Endoscopic internal biliary catheter (removable plastic stent)	Usually appropriate	Strong	N/A	N/A	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		References				Study Quality															
		49 (21280189)				2															
		48 (16116539)				4															
		50 (18702031)				2															
		51 (29026597)				Good															

			52 (24587819)			1												
			56 (23432435)			4												
Percutaneous internal/external biliary catheter	Usually appropriate	Limited	N/A	N/A	8	8	0	0	0	0	0	0	0	0	0	0	0	0
		References			Study Quality													
			49 (21280189)			2												
			46 (26689137)			4												
			56 (23432435)			4												
Surgery	Usually not appropriate	Strong	N/A	N/A	3	n/a	0	0	0	0	0	0	0	0	0	0	0	0
		References			Study Quality													
			58 (11907771)			2												
			46 (26689137)			4												
			59 (2799642)			2												
Medical management only	Usually not appropriate	Limited	N/A	N/A	2	2	0	0	0	0	0	0	0	0	0	0	0	0
		References			Study Quality													
			46 (26689137)			4												
Permanent biliary metallic stent	Usually not appropriate	Limited	N/A	N/A	1	1	0	0	0	0	0	0	0	0	0	0	0	0
		References			Study Quality													
			52 (24587819)			1												
Removable biliary covered stent	May be appropriate	Limited	N/A	N/A	5	5	0	0	1	0	6	2	0	0	0	0	0	0
		References			Study Quality													
			52 (24587819)			1												
Endoscopic US-guided biliary drainage (EUS-BD)	Usually not appropriate	Expert Consensus	N/A	N/A	3	3	0	0	0	0	0	0	0	0	0	0	0	0

Variant 4: Initial therapeutic procedure for a patient with bile leak and dilated bile ducts following laparoscopic cholecystectomy.

Endoscopic US-guided biliary drainage (EUS-BD)	Usually not appropriate	Expert Consensus	N/A	N/A	1	1	0	0	0	0	0	0	0	0	0	0
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Variant 5: Initial therapeutic procedure for a patient with dilated bile ducts and suspected biliary sepsis or acute cholangitis.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations									
							1	2	3	4	5	6	7	8	9	
Endoscopic internal biliary catheter (removable plastic stent)	Usually appropriate	Limited	N/A	N/A	8	8	0	0	0	0	0	0	0	0	0	0

References	Study Quality
79 (1371206)	3
80 (9336514)	4
81 (28834389)	1

Percutaneous internal/external biliary catheter	Usually appropriate	Limited	N/A	N/A	8	8	0	0	0	0	0	0	0	0	0	0
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References	Study Quality
69 (18922456)	4
77 (28419764)	4

Surgery	Usually not appropriate	Limited	N/A	N/A	2	n/a	0	0	0	0	0	0	0	0	0	0
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References	Study Quality
79 (1371206)	3
80 (9336514)	4

Medical management only	Usually not appropriate	Expert Consensus	N/A	N/A	2	2	0	0	0	0	0	0	0	0	0	0
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Permanent biliary metallic stent	Usually not appropriate	Limited	N/A	N/A	1	1	0	0	0	0	0	0	0	0	0	0
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References	Study Quality
81 (28834389)	1

Removable biliary covered stent	Usually not appropriate	Expert Consensus	N/A	N/A	2	2	0	0	0	0	0	0	0	0	0
Endoscopic US-guided biliary drainage (EUS-BD)	May be appropriate	Limited	N/A	N/A	4	4	0	0	0	0	0	0	0	0	0
		References	Study Quality												
		88 (27122677)	4												

Variant 6: Initial therapeutic procedure for a patient with malignant common bile duct obstruction (eg, pancreatic carcinoma).

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Endoscopic internal biliary catheter (removable plastic stent)	Usually appropriate	Limited	N/A	N/A	8	8	0	0	0	0	0	0	0	0	0
		References	Study Quality												
		95 (26290631)	4												
		96 (22415652)	1												
Percutaneous internal/external biliary catheter	Usually appropriate	Strong	N/A	N/A	7	7	0	0	0	0	0	0	0	0	0
		References	Study Quality												
		109 (25148939)	Good												
		110 (19609609)	3												
		111 (24064748)	3												
		112 (12354980)	1												
Surgery	May be appropriate	Strong	N/A	N/A	5	n/a	0	0	0	0	0	0	0	0	0
		References	Study Quality												
		113 (21068488)	2												
		114 (19606687)	2												
		115 (-3138827)	Good												
		116 (16632990)	4												

Medical management only	Usually not appropriate	Limited	N/A	N/A	3	3	0	0	0	0	0	0	0	0	0	0
		References		Study Quality												
		89 (26322156)		4												
Percutaneous biliary metallic stent	May be appropriate	Strong	N/A	N/A	5	5	0	0	0	0	0	0	0	0	0	0
		References		Study Quality												
		95 (26290631)		4												
		96 (22415652)		1												
		97 (16650542)		4												
		90 (26911896)		4												
		98 (20467870)		1												
		99 (21034892)		1												
Removable biliary covered stent	May be appropriate	Strong	N/A	N/A	5	5	0	0	0	0	0	0	0	0	0	0
		References		Study Quality												
		90 (26911896)		4												
		98 (20467870)		1												
		99 (21034892)		1												
Endoscopic US-guided biliary drainage (EUS-BD)	May be appropriate	Strong	N/A	N/A	4	4	0	0	0	0	0	0	0	0	0	0
		References		Study Quality												
		104 (21963067)		3												
		105 (23523301)		2												
		106 (23021167)		3												
		107 (22810111)		1												

Variant 7: Initial therapeutic procedure for a patient with hilar biliary obstruction from malignant etiology (eg, Klatskin tumor).

Endoscopic US-guided biliary drainage (EUS-BD)	Usually not appropriate	Limited	N/A	N/A	3	3	0	0	0	0	0	0	0	0	0	
References			Study Quality													
134 (26811666)			4													
135 (27129552)			2													

Appendix Key

A more complete discussion of the items presented below can be found by accessing the supporting documents at the designated hyperlinks.

Appropriateness Category: The panel's recommendation for a procedure based on the assessment of the risks and benefits of performing the procedure for the specified clinical scenario.

SOE: Strength of Evidence. The assessment of the amount and quality of evidence found in the peer reviewed medical literature for an appropriateness recommendation.

- **References:** The citation number and PMID for the reference(s) associated with the recommendation.
- **Study Quality:** The assessment of the quality of an individual reference based on the number of study quality elements described in the reference.

RRL: Relative Radiation Level. A population based assessment of the amount of radiation a typical patient may be exposed to during the specified procedure.

Rating: The final rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

Median: The median rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

Final tabulations: A histogram showing the number of panel members who rated the procedure as noted in the column heading (ie, 1, 2, 3, etc.).

Additional supporting documents about the AC methodology and processes can be found at www.acr.org/ac.