

Appendix 1 Search strategies

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((Neoplasia OR Neoplasias OR Neoplasm OR Neoplasms OR Tumors OR Tumor OR Cancer OR Cancers OR Malignancy OR Malignancies) AND (Biliary Tract OR Biliary Tree OR Biliary System OR Bile Duct OR Bile Ducts)) OR (Bile Duct Neoplasms OR Bile Duct Neoplasm OR Bile Duct Cancer OR Bile Duct Cancers OR Biliary Tract Neoplasm OR Biliary Tract Neoplasm OR Biliary Tract Cancer OR Biliary Tract Cancers)) AND ((Prostheses and Implants) OR Prosthetic OR Implants OR Implant OR Prostheses OR Prosthesis OR Endoprosthesis OR Endoprostheses OR Stent OR Stents).

Appendix 2 The quality of evidence was evaluated by GRADE criteria

Certainty assessment							Summary of findings				
Participants (studies) Follow up	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Overall certainty of evidence	Study event rates (%)		Relative effect (95% CI)	Anticipated absolute effects	
							With Metal Stent	With Plastic Stent		Risk with Metal Stent	Risk difference with Plastic Stent

COMPLICATIONS

930 (10 RCTs)	very serious a,b	serious ^c	not serious	not serious	none	⊕○○○ VERY LOW	65/432 (15.0%)	65/498 (13.1%)	RR 0.80 (0.58 to 1.10)	150 per 1.000	30 fewer per 1.000 (from 63 fewer to 15 more)
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STENT DISFUNCTION

1007 (11 RCTs)	very serious a,b,d	serious ^c	not serious	not serious	none	⊕○○○ VERY LOW	220/465 (47.3%)	123/542 (22.7%)	RR 0.50 (0.42 to 0.60)	473 per 1.000	237 fewer per 1.000 (from 274 fewer to 189 fewer)
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Certainty assessment						Summary of findings					
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SURVIVAL

610 (6 RCTs)	serious a,d	serious ^c	not serious	not serious	none	⊕⊕○○ LOW	272	338	-	The mean SURVIVAL was 0	MD 10.33 lower (18.18 lower to 2.47 lower)
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DRAINAGE SUCCESS

692 (8 RCTs)	serious a	not serious	not serious	not serious	none	⊕⊕⊕○ MODERATE	288/313 (92.0%)	346/379 (91.3%)	RR 1.02 (0.98 to 1.07)	920 per 1.000	18 more per 1.000 (from 18 fewer to 64 more)
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REINTERVENTIONS (DICHOTOMOUS VARIABLES)

443 (4 RCTs)	very serious a	serious ^c	not serious	not serious	none	⊕○○○ VERY LOW	121/226 (53.5%)	41/217 (18.9%)	RR 0.36 (0.27 to 0.48)	535 per 1.000	343 fewer per 1.000 (from 391 fewer to 278 fewer)
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REINTERVENTIONS (CONTINUOUS VARIABLES)

Certainty assessment							Summary of findings				
176 (3 RCTs)	very serious a,b	not serious	not serious	not serious	none	⊕⊕○○ LOW	88	88	-	The mean REINTERVENTIONS was 0	MD 0.67 lower (0.85 lower to 0.5 lower)

TIME FOR STENT DYSFUNCTION

710 (7 RCTs)	very serious a,d	very serious ^e	not serious	not serious	none	⊕○○○ VERY LOW	323	387	-	The mean TIME FOR STENT DYSFUNCTION was 0	MD 144.97 higher (138.99 higher to 150.95 higher)
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^a Inappropriate randomization; ^b Intention to treat analysis; ^c Heterogeneity > 50%; ^d Lost to follow up > 20%; ^e Heterogeneity > 75%.

CI: Confidence interval; RR: Risk ratio; MD: Mean difference.

Supplementary Table 1 Etiological profiles for the cause of biliary obstruction (not related)

Author	Year of publication	N° of patients	Cholangiocarcinoma	Pancreatic tumor	Papillae tumor	Gallbladder cancer	Metastatic lymphnode	Other
Davis et al.	1992	105	-	43/50	6/6	-	-	-
Knyrim et al.	1993	62	1/1	21/22	2/1	-	-	7/7 lymphoma
Prat et al.	1998	105	5/16	25/40	0/3	-	4/7	-
Kaassis et al.	2003	118	10/8	45/43	-	-	8/7	1/1 neuroendocrine tumor
Katsinelos et al.	2006	47	4/4	12/13	2/3	-	5/4	
Soderlund et al.	2006	100	5/4	40/38	1/1	-	-	2/5 metastatic disease and 0/1 neuroendocrine tumor
Isayama et al.	2011	120	-	55/58	-	-	-	-
Moses et al.	2013	85	0/2	29/29	1/3	1/1	-	4/3 metastatic disease, 1/3 ampullary tumor e 40/39 biliary duct
Schmidt et al.	2015	37	-	12/12	3/0	-	-	3/1 extra-hepatic, 9/8 metastatic disease and 0/3 other
Walter et al.	2015	219	-	181	-	-	-	38

Walter et al.	2017	219	-	83/32	-	-	-	17/8 other e 60/23 metastatic disease
Bernon et al.	2018	40	3/2	18/17	-	-	-	-