

Supplementary Table 1. Risk of bias of the included studies

Study	Bias domain							Overall bias
	Bias due to confounding	Bias in selection of participants into the study	Bias in classification of interventions	Bias due to deviations from intended interventions	Bias due to missing data	Bias in measurement of outcomes	Bias in selection of the reported result	
Graff-Baker et al. [22]	Moderate	Low	Moderate	N/A	Low	Low	Low	Moderate
Maxwell et al. [13]	Moderate	Low	Moderate	N/A	Low	Low	Low	Moderate
Woltering et al. [15]	Moderate	Low	Moderate	N/A	Low	Low	Low	Moderate
Morgan et al. [14]	Moderate	Moderate	Moderate	Low	Low	Low	Low	Moderate
Chamberlain et al. [23]	Moderate	Moderate	Low	Moderate	Serious	Moderate	Low	Moderate
Ejaz et al. [24]	Low	Low	Low	N/A	Low	Low	Low	Moderate
Elias et al. [12]	Moderate	Low	Moderate	Moderate	Low	Low	Low	Moderate
Glazer et al. [10]	Moderate	Low	Moderate	N/A	Low	Low	Moderate	Moderate
Scott et al. [16]	Moderate	Moderate	Moderate	N/A	Low	Low	Low	Moderate
Nave et al. [25]	Low	Low	Moderate	N/A	Serious	Low	Low	Moderate
Osborne et al. [26]	Moderate	Low	Moderate	Low	Low	Low	Low	Moderate
Que et al. [20]	Low	Low	Moderate	N/A	Low	Low	Low	Moderate
Wängberg et al. [21]	Moderate	Low	Moderate	N/A	Low	Moderate	Low	Moderate

N/A, data not reported.

Supplementary Table 2. ROBIS results

Review	Phase 2				Phase 3
	1. Study eligibility criteria	2. Identification and selection of studies	3. Data collection and study appraisal	4. Synthesis and findings	Risk of bias in the review
	☺	☺	☺	☹	☺

☺, low risk; ☹, high risk.

Supplementary Table 3. Study characteristics

Author (year)	Number	Sex (% male)	Age (yr) ^a	Primary location	Ki67 index	Extra-hepatic disease	Symptoms	Primary status (resected/ <i>in-situ</i>)
Graff-Baker et al. (2014) [22]	52	17 (33%)	58 ± 11	SB: 24 (45%) TI: 18 (34%) Others: 10 (19%)	Low: 29 (64%) Int: 15 (33%) High: 1 (2%)	34 (65%)	NR	21/1
Maxwell et al. (2016) [13]	108	62 (57%)	Median: PNET, 55; SBNET, 60	SB: 80 (74%) P: 28 (26%)	Low/Int: 99 (94%) High: 4 (4%)	43 (40%)	93 (86%)	91/NR
Woltering et al. (2017) [15]	1,001/800 ^b	368 (46%)	55 ± 12	SB: 516 (65%) P: 89 (11%) Others: 195 (24%)	NR	NR	486 (61%)	575/385 ^f
Morgan et al. (2018) [14]	44/42 ^c	23 (52%)	52 ± 11	P: 34 (81%) Duo: 7 (19%) NK: 1	Low: 21 (51%) Int: 20 (49%)	6 (14%)	NR	5/23
Chamberlain et al. (2000) [23]	85/34 ^d	37 (44%)	52 (20–79)	P: 42 (49%) GI: 21 (25%) Lung: 8 (9%) NK: 14 (16%)	NR	38 (45%)	81 (95%)	42/58
Ejaz et al. (2018) [24]	612	326 (53%)	Median (IQR): 57 (49–65)	P: 254 (42%) SB: 188 (31%), LB: 42 (7%)	Low: 227 (56%) Int: 101 (25%) High: 78 (19%)	70 (11%)	408 (67%)	NR
Elias et al. (2003) [12]	47	16 (34%)	53 ± 10	P: 23 (49%) SB: 14 (30%) Others: 7 (15%) NK: 3 (6%)	NR	36 (77%)	NR	24 ^e
Glazer et al. (2010) [10]	172	83 (48%)	57 (12–81)	SB: 65 (38%) P: 55 (32%) LB: 13 (8%) Others: 31 (18%) NK: 8 (5%)	Low: 85 (49%) Int/High: 87 (51%)	NR	NR	84 ^e
Scott et al. (2019) [16]	188/184 ^c	103 (55%)	58 (15–80)	SB: 128 (68%), P: 41 (22%), Other: 19 (10%)	Grade 1: 72 (39%) Grade 2: 97 (53%) Grade 3: 15 (8%)	NR	NR	139 ^e
Nave et al. (2001) [25]	31	16 (52%)	51 ± 15	Midgut: 16 (55%) Panc: 11 (32%) Lung: 4 (13%)	NR	NR	22 (71%)	NR
Osborne et al. (2006) [26]	61	33 (54%)	56 ± 12	Bowel: 36 (59%) P: 16 (26%) Lung: 3 (5%) Other: 2 (3%) NK: 4 (7%)	NR	NR	61 (100%)	NR
Que et al. (1995) [20]	74	28 (38%)	Mean (range): 55 (25–77)	Midgut: 41 (55%) Foregut: 7 (9%) Hindgut: 2 (3%) Others: 3 (2%)	NR	NR	68 (92%)	37 ^e
Wängberg et al. (1996) [21]	64	29 (45%)	Mean (range): 61 (32–79)	NR	NR	NR	NR	NR

Duo, duodenum; GI, gastrointestinal tract; Int, intermediate; IQR, interquartile range; LB, large bowel; P, pancreas; PNET, pancreatic neuroendocrine tumor; NK, not known; NR, not reported; SB, small bowel; SBNET, small bowel neuroendocrine tumor; TI, terminal ileum.

^aReported as “mean ± standard deviation” or “median (range)” unless stated otherwise. ^bSome patients underwent multiple resections, hence numbers are reported as “number of resections/patients”; cohort characteristics are reported using the number of patients as the denominator. ^cSome patients underwent multiple resections, hence numbers are reported as “number of resections/patients”; cohort characteristics are reported using the number of resections as the denominator. ^dNot all patients were treated surgically, hence numbers are reported as “number of patients/treated surgically”; cohort characteristics are reported using the total number of patients as the denominator. ^ePrimary resected at the time of liver resection. ^fReported with the number of resections as the denominator, rather than the number of patients.