Minimally invasive versus open hepatectomy for the resection of colorectal liver metastases: a systematic review and meta-analysis

# Supplementary Appendix 6

Forest plots for the outcome 'mortality', which was defined at the inverse of overall survival, for staged and simultaneous resections

#### 1.19 Mortality 1yr

	MIS.Sta	ged	Open.St	aged		Risk Ratio	Risk	Ratio	Risk of Bias
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H, Rande	om, 95% Cl	ABCDEFG
1.19.1 Randomized co	ontrol trials	5							
Kasai 2018	0	20	2	20	5.0%	0.20 [0.01, 3.92]			
RoblesCampos 2019	7	96	6	97	40.1%	1.18 [0.41, 3.38]	-		
Fretland 2018 Subtotal (95% CI)	8	133 <b>249</b>	10	147 <b>264</b>	54.9% <b>100.0%</b>	0.88 [0.36, 2.17] <b>0.92 [0.47, 1.79]</b>		<b>⊢</b> ▶	
Total events	15		18						
Heterogeneity: Tau <sup>2</sup> = (	0.00; Chi² =	1.24, 0	df = 2 (P =	0.54); I	² = 0%				
Test for overall effect: 2	Z = 0.24 (P	= 0.81	)	,					
							0.002 0.1 1	10	500
Toot for outgroup differ			- 1-1 -				Favors Open.Staged	Favors MIS.Sta	ged

### Test for subgroup differences: Not applicable

Risk of bias legend

(A) Random sequence generation (selection bias)

(B) Allocation concealment (selection bias)

(C) Blinding of participants and personnel (performance bias)

(D) Blinding of outcome assessment (detection bias)

(E) Incomplete outcome data (attrition bias)

(F) Selective reporting (reporting bias)

1.20 Mortality\_3yr

	MIS.Sta	ged	Open.St	aged		Risk Ratio	Risk Ratio	Risk of Bias
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H, Random, 95% Cl	ABCDEFG
1.20.1 Randomized co	ontrol trials	6						
Kasai 2018	3	20	10	20	16.1%	0.30 [0.10, 0.93]		
Fretland 2018	24	83	25	100	40.7%	1.16 [0.72, 1.87]		
RoblesCampos 2019 Subtotal (95% CI)	28	96 <b>199</b>	29	97 217	43.2% <b>100.0%</b>	0.98 [0.63, 1.51] <b>0.86 [0.51, 1.47]</b>	*	
Total events	55		64					
Heterogeneity: Tau <sup>2</sup> = (	0.12; Chi² =	= 4.68, 0	df = 2 (P =	0.10); I	² = 57%			
Test for overall effect: 2	Z = 0.54 (P	= 0.59	)	,				
							0.01 0.1 1 10	100
Tost for subgroup diffor	ronooo: No	t onnlia	abla				Favours Open.Staged Favours MIS.S	taged

Test for subgroup differences: Not applicable

Risk of bias legend

(A) Random sequence generation (selection bias)

(B) Allocation concealment (selection bias)

(C) Blinding of participants and personnel (performance bias)

(D) Blinding of outcome assessment (detection bias)

(E) Incomplete outcome data (attrition bias)

(F) Selective reporting (reporting bias)

## 1.21 Mortality\_5yr

	MIS.Sta	ged	Open.St	aged		Risk Ratio		Risk Ratio	Risk of Bias
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI		M-H, Random, 95% CI	ABCDEFG
1.21.1 Randomized Co	ontrol Tria	s							
Kasai 2018	6	20	10	2		Not estimable			
Fretland 2018	17	36	18	47	22.8%	1.23 [0.75, 2.03]			
RoblesCampos 2019 Subtotal (95% CI)	49	96 <b>152</b>	51	97 <b>146</b>	77.2% <b>100.0%</b>	0.97 [0.74, 1.27] 1.03 [0.81, 1.30]		<b>₩</b>	
Total events	72		79						
Heterogeneity: Tau <sup>2</sup> = (	0.00; Chi² =	= 0.68, 0	df = 1 (P =	0.41); I	² = 0%				
Test for overall effect: 2	Z = 0.20 (P	= 0.84	)	,.					
							ļ		
							0.01	0.1 1 10	100
Toot for subgroup differ	ranaaa, Na	t onnlio	ahla				Favours C	pen.Staged Favours MIS.	Staged

Test for subgroup differences: Not applicable

Risk of bias legend

(A) Random sequence generation (selection bias)

(B) Allocation concealment (selection bias)

(C) Blinding of participants and personnel (performance bias)

(D) Blinding of outcome assessment (detection bias)

(E) Incomplete outcome data (attrition bias)

(F) Selective reporting (reporting bias)

(G) Other bias

2 MIS.Simult vs. Open.Simult

# 2.19 Mortality 1yr

	MIS.Sir	nult	Open.S	imult		Risk Ratio	Risk Ratio	Risk of Bias
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% Cl	M-H, Random, 95% CI	ABCDEFG
Ivanecz 2018	0	10	0	10		Not estimable		
Takasu 2014	0	7	0	7		Not estimable		
Chen 2019	0	15	2	15	12.6%	0.20 [0.01, 3.85]		
Hu 2012	1	13	1	13	15.6%	1.00 [0.07, 14.34]		
Chen 2011	4	23	4	18	71.8%	0.78 [0.23, 2.71]		
Total (95% CI)		68		63	100.0%	0.68 [0.24, 1.96]	-	
Total events	5		7					
Heterogeneity: Tau <sup>2</sup> =	0.00; Chi <sup>2</sup>	= 0.81	, df = 2 (P	= 0.67);	l² = 0%			
Test for overall effect:	Z = 0.71 (I	P = 0.48	8)	,			0.01 0.1 1 10 Favors MIS.Simult Favors Open.	100 Simult

Risk of bias legend

(A) Random sequence generation (selection bias)

(B) Allocation concealment (selection bias)

(C) Blinding of participants and personnel (performance bias)

(D) Blinding of outcome assessment (detection bias)

(E) Incomplete outcome data (attrition bias)

(F) Selective reporting (reporting bias)

2.20 Mortality 3yr

	MIS.Sir	nult	Open.Si	imult		Risk Ratio	Risk Ratio	<b>Risk of Bias</b>
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H, Random, 95% Cl	ABCDEFG
Ivanecz 2018	2	10	1	10	1.5%	2.00 [0.21, 18.69]		
Hu 2012	6	13	6	13	10.7%	1.00 [0.44, 2.29]	<b>_</b>	
Huh 2011	9	20	8	20	14.1%	1.13 [0.55, 2.32]	_ <b>_</b>	
Xu 2018	8	17	8	18	14.2%	1.06 [0.51, 2.18]	<b>_</b> _	
Chen 2011	13	23	11	18	27.9%	0.92 [0.55, 1.55]		
Shin 2019	28	109	23	109	31.6%	1.22 [0.75, 1.97]	- <b>-</b> -	
Total (95% CI)		192		188	100.0%	1.08 [0.82, 1.41]	•	
Total events	66		57					
Heterogeneity: Tau <sup>2</sup> =	0.00; Chi <sup>2</sup>	= 0.98,	df = 5 (P	= 0.96);	l² = 0%		0.01 0.1 1 10	100
Test for overall effect:	Z = 0.54 (I	⊃ = 0.5§	9)				0.01 0.1 1 10 Favours MIS.Simult Favours Open.S	

Risk of bias legend

(A) Random sequence generation (selection bias)

(B) Allocation concealment (selection bias)

(C) Blinding of participants and personnel (performance bias)

(D) Blinding of outcome assessment (detection bias)

(E) Incomplete outcome data (attrition bias)

(F) Selective reporting (reporting bias)

#### 2.21 Mortality 5yr

	MIS.Sir	nult	Open.Si	imult		Risk Ratio	Risk Ratio	Risk of Bias
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H, Random, 95% Cl	ABCDEFG
Takasu 2014	3	7	4	7	1.9%	0.75 [0.26, 2.18]		
Hu 2012	9	13	9	13	8.2%	1.00 [0.60, 1.67]	<u>+</u>	
Chen 2011	21	23	18	18	89.9%	0.92 [0.79, 1.07]		
Total (95% CI)		43		38	100.0%	0.92 [0.80, 1.07]	•	
Total events	33		31					
Heterogeneity: Tau <sup>2</sup> = Test for overall effect:	,			= 0.89);	l <sup>2</sup> = 0%		0.01 0.1 1 10 Favours MIS.Simult Favours Open	100 .Simult

Risk of bias legend

(A) Random sequence generation (selection bias)

(B) Allocation concealment (selection bias)

(C) Blinding of participants and personnel (performance bias)

(D) Blinding of outcome assessment (detection bias)

(E) Incomplete outcome data (attrition bias)

(F) Selective reporting (reporting bias)

(G) Other bias

3 MIS.Mixed vs. Open.Mixed