

Appendix 1

Search Strategy for Medline

1. (((hepat* or liver*) adj3 (carcinoma* or tumour* or tumor* or neoplasm* or malign* or cancer*)) or HCC).tw.
2. ((liver* or hepat*) adj3 (transplant* or graft*)).tw.
3. ((liver or hepatic) adj3 (resection* or segmentectom*)) or hepatectomy*).tw.
4. #1 and #2 and #3

Search Strategy for Embase

1. (((hepat* or liver*) NEAR/3 (carcinoma* or tumour* or tumor* or neoplasm* or malign* or cancer*)) or HCC):ti,ab
2. ((liver* or hepat*) NEAR/3 (transplant* or graft*)):ti,ab
3. ((liver or hepatic) NEAR/3 (resection* or segmentectom*)) or hepatectomy*):ti,ab
4. #1 and #2 and #3

Table S1 Characteristics of included studies

Author	Country/region	Study duration	Total population (LT)	Total population (LR)	Surveillance method	Median follow-up (months)	Age (years)	Male (%)	Cirrhosis (%)	Mean AFP (ng/ml)	Mean tumour size (cm)	Microvascular invasion (%)	Uninodular tumour (%)
Adam <i>et al.</i> , 2012	France	1990–2010	97	101	–	LT: 83; LR: 36	58.58	85.35	100.00	–	2.71	42.31	100
Aksoy <i>et al.</i> , 2020	Turkey	1998–2010	33	27	–	LT: 34.5 (mean); LR: 29.0 (mean)	–	–	–	–	–	–	–
Baccarani <i>et al.</i> , 2008	Italy	1996–2005	48	38	–	–	62.99	81.40	100.00	–	3.61	17.28	–
Bellavance <i>et al.</i> , 2008	USA, Switzerland, Portugal, Italy	1985–2008	245	134	–	LT: 39.6; LR: 27.6	–	82.36	100.00	276.00	–	5.79	100
Bigourdan <i>et al.</i> , 2003	France	1991–1999	17	20	Enhanced	–	63.55	38.59	100.00	118.00	3.31	8.11	–
Chapman <i>et al.</i> , 2015	USA	1990–2011	248	496	–	–	60.07	71.00	58.67	123.00	–	–	100
Dai <i>et al.</i> , 2014	China	2008–2013	25	13	Enhanced	–	45.56	90.83	100.00	–	1.76	24.35	100
Facciuto <i>et al.</i> , 2009	USA	1997–2007	66	25	Enhanced	LT: 28; LR: 24	–	–	–	–	–	–	–
Fan <i>et al.</i> , 2011	Hong Kong	1995–2008	287	50	Enhanced	LT: 55.3; LR: 55.3	51.14	11.71	–	–	–	–	100
Graham <i>et al.</i> , 2013	USA	1998–2008	2,355	1,873	–	–	–	–	–	–	–	–	–
Hsueh <i>et al.</i> , 2016	Taiwan	2006–2013	184	65	Enhanced	–	55.42	62.21	62.65	412.84	2.71	23.29	–
Huang <i>et al.</i> , 2016	China	2001–2009	51	256	Enhanced	LT: 30.1; LR: 30.1	47.80	89.90	85.82	20,635	3.25	6.51	–
Hwang <i>et al.</i> , 2007	South Korea	1997–2005	3	4	Enhanced	–	52.89	85.71	100.00	–	–	–	–
Jiang <i>et al.</i> , 2014	China	2007–2012	34	33	Enhanced	LT: 43.5 (mean); LR: 31.2 (mean)	47.69	85.07	98.51	–	2.50	34.33	–
Koniaris <i>et al.</i> , 2011	USA	1999–2009	33	205	–	–	–	–	–	–	–	–	–
Krenzien <i>et al.</i> , 2018	Germany	1989–2011	214	59	Non-enhanced	–	56.93	77.76	100.00	–	–	42.21	–
Kuroda <i>et al.</i> , 2011	Japan	1986–2008	21	48	Non-enhanced	LT: 40.9; LR: 34.2	–	–	–	–	–	–	–
Lee <i>et al.</i> , 2010	South Korea	1997–2007	48	82	–	LT: 49.1 (mean); LR: 66.5 (mean)	–	–	–	–	–	–	–
Li <i>et al.</i> , 2017	China	2007–2013	67	137	–	–	–	–	–	–	–	–	–
Li <i>et al.</i> , 2014	China	2007–2012	39	243	Enhanced	–	49.55	87.23	–	–	3.25	19.86	100
Llovet <i>et al.</i> , 1999	Spain	1989–1997	87	77	Non-enhanced	LT: 26; LR: 32	57.87	68.90	100.00	–	2.85	20.12	–
Meyerovich <i>et al.</i> , 2019	Israel	2007–2016	57	30	Enhanced	LT: 23.3; LR: 27.7	61.95	69.03	100.00	212.56	3.21	17.50	–
Michelakos <i>et al.</i> , 2019	USA	1992–2015	89	95	–	–	61.45	81.52	100.00	20.68	3.35	–	–
Moon <i>et al.</i> , 2007	South Korea	1995–2005	17	100	Enhanced	LT: 22; LR: 77	52.74	80.34	100.00	–	2.33	7.69	100
Park <i>et al.</i> , 2017	South Korea	1999–2010	137	199	Enhanced	LT: 37.8 (mean); LR: 28.7 (mean)	54.28	76.49	100.00	905.96	2.63	20.24	–
Peters <i>et al.</i> , 2017	USA	2004–2012	1,445	2,121	–	–	–	–	–	–	–	–	–
Sapisochin <i>et al.</i> , 2013	Spain	1991–2007	119	95	Non-enhanced	LT: 63.6; LR: 63.6	62.22	69.55	100.00	184.36	3.00	15.22	100
Shah <i>et al.</i> , 2007	Canada	1995–2005	140	121	–	LT: 35; LR: 35	51.45	50.29	100.00	–	3.52	–	–
Sogawa <i>et al.</i> , 2013	USA	2002–2007	75	56	Enhanced	LT: 30.1; LR: 46.6	58.81	77.10	100.00	1,477.70	2.64	49.41	–
Sotiropoulos <i>et al.</i> , 2009	Germany	1998–2007	26	61	–	–	–	–	–	–	6.78	–	–
Sung <i>et al.</i> , 2017	South Korea	1997–2006	67	89	–	–	52.91	80.13	74.36	–	2.46	13.46	100
Wu <i>et al.</i> , 2020	China	2004–2015	1,480	1,538	–	–	–	–	–	–	–	–	100
Yang <i>et al.</i> , 2017	China	2004–2013	258	288	–	–	59.64	74.95	–	–	–	–	100
Yokoi <i>et al.</i> , 2006	Japan	1990–2003	11	94	–	–	–	–	–	–	–	–	–
Zhou <i>et al.</i> , 2010	China	2003–2007	89	1,018	Enhanced	LT: 31; LR: 31	51.34	82.93	100.00	–	–	25.21	–

LT, liver transplant, LR, liver resection; AFP, alpha-fetoprotein.

Table S2 NOS

Author	Selection	Comparability	Exposure/outcomes	Overall score
Adam <i>et al.</i> , 2012	4	2	3	9
Aksoy <i>et al.</i> , 2020	4	2	2	8
Baccarani <i>et al.</i> , 2008	4	2	2	8
Bellavance <i>et al.</i> , 2008	4	2	3	9
Bigourdan <i>et al.</i> , 2003	4	1	3	8
Chapman <i>et al.</i> , 2015	4	2	3	9
Dai <i>et al.</i> , 2014	4	2	3	9
Facciuto <i>et al.</i> , 2009	3	2	3	8
Fan <i>et al.</i> , 2011	4	2	2	8
Graham <i>et al.</i> , 2013	4	2	2	8
Hsueh <i>et al.</i> , 2016	4	1	3	8
Huang <i>et al.</i> , 2016	4	2	2	8
Hwang <i>et al.</i> , 2007	3	2	3	8
Jiang <i>et al.</i> , 2014	4	1	3	8
Koniaris <i>et al.</i> , 2011	3	2	3	8
Krenzien <i>et al.</i> , 2018	4	2	2	8
Kuroda <i>et al.</i> , 2011	4	2	2	8
Lee <i>et al.</i> , 2010	4	2	2	8
Li <i>et al.</i> , 2017	4	1	3	8
Li <i>et al.</i> , 2014	4	2	3	9
Llovet <i>et al.</i> , 1999	4	2	2	8
Meyerovich <i>et al.</i> , 2019	4	1	3	8
Michelakos <i>et al.</i> , 2019	4	2	2	8
Moon <i>et al.</i> , 2007	4	3	3	9
Park <i>et al.</i> , 2017	4	1	2	8
Peters <i>et al.</i> , 2017	4	2	3	9
Sapisochin <i>et al.</i> , 2013	4	2	3	9
Shah <i>et al.</i> , 2007	4	2	2	8
Sogawa <i>et al.</i> , 2013	4	1	3	8
Sotiropoulos <i>et al.</i> , 2009	3	2	3	8
Sung <i>et al.</i> , 2017	4	2	3	9
Wu <i>et al.</i> , 2020	4	2	3	9
Yang <i>et al.</i> , 2017	4	2	3	9
Yokoi <i>et al.</i> , 2006	4	2	2	8
Zhou <i>et al.</i> , 2010	3	2	3	8

NOS, Newcastle-Ottawa Scale quality assessment.

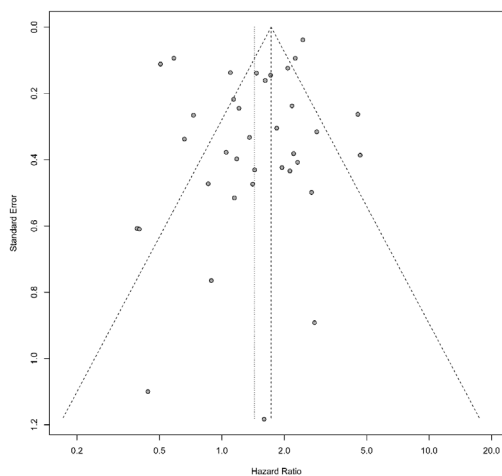


Figure S1 Funnel plot for OS. OS, overall survival.

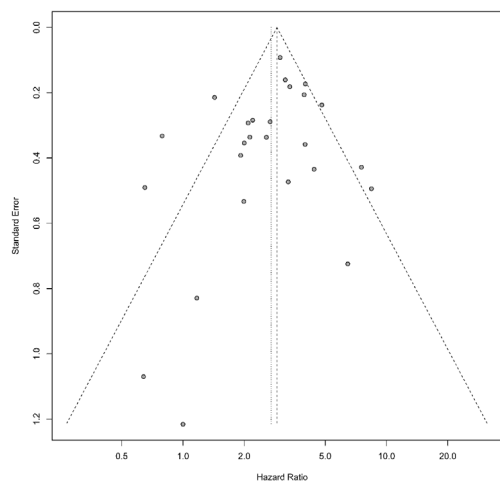


Figure S2 Funnel plot for DFS. DFS, disease-free survival.

Study	TE	seTE
Adam et al 2012	0.78	0.2400
Baccarani et al 2007	0.17	0.4000
Bigourdan et al 2003	0.67	0.4200
Facciuto et al 2009	0.36	0.4300
Koniaris et al 2011	0.13	0.2200
Llovet et al 1999	0.19	0.2500
Meyerovich et al 2019	-0.42	0.3400
Michelakos et al 2018	0.48	0.1600
Sapisochin et al 2012	0.39	0.1400
Shah et al 2007	0.10	0.1400
Sogawa et al 2012	-0.31	0.2700
Zhou et al 2010	0.61	0.3100

Fixed effect model
Random effects model
 Heterogeneity: $I^2 = 45\%$, $\tau^2 = 0.0419$, $p = 0.05$
 Test for overall effect (random effects): $z = 2.87$ ($p < 0.01$)

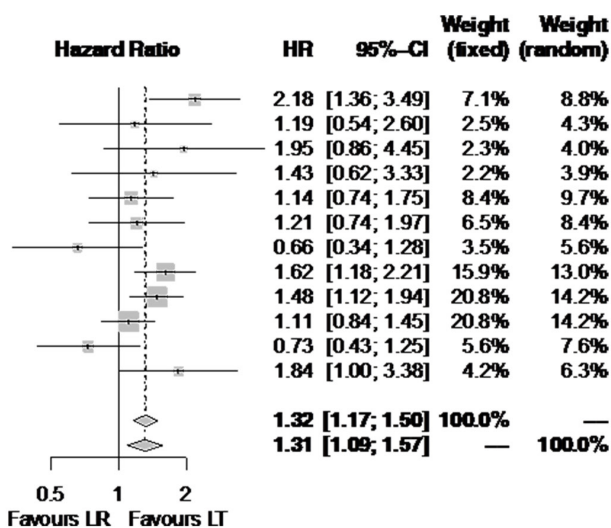


Figure S3 Forest plot for OS among patients who underwent LR versus LT for HCC, ITT analysis studies only. HR, hazard ratio; CI, confidence interval; OS, overall survival; LR, liver resection; LT, liver transplantation; HCC, hepatocellular carcinoma; ITT, intention-to-treat.

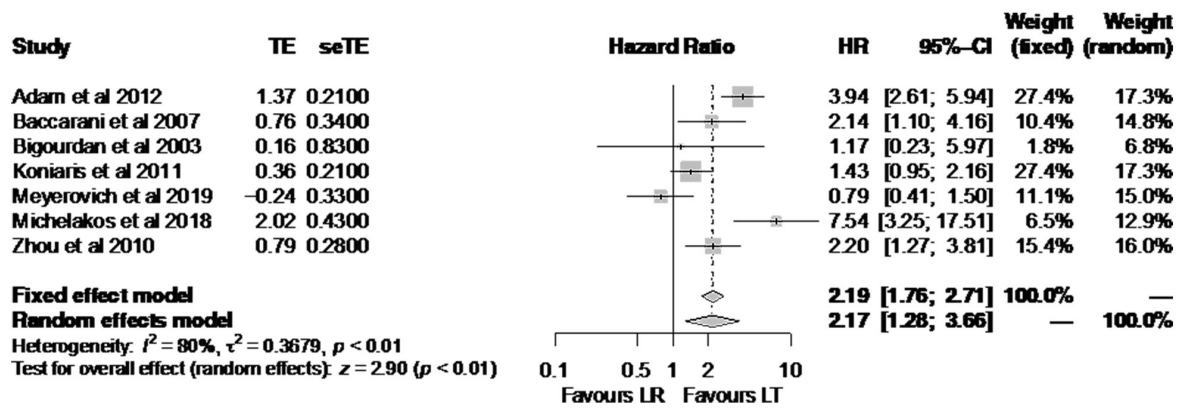


Figure S4 Forest plot for DFS among patients who underwent LR versus LT for HCC, ITT analysis studies only. HR, hazard ratio; CI, confidence interval; DFS, disease-free survival; LR, liver resection; LT, liver transplantation; HCC, hepatocellular carcinoma; ITT, intention-to-treat.