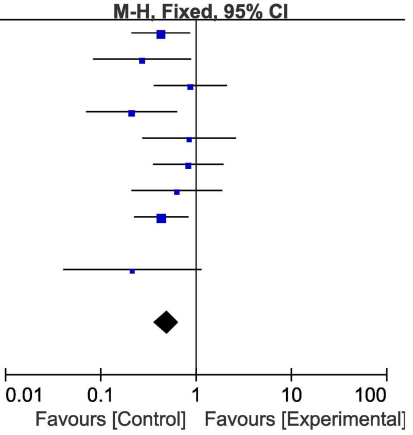
Dong HT 2008
Jiang CY 2013
Li B 2013
Meng P 2016
Tang WH 2015
Wang XH 2009
Wu GL 2010
Xiao ZY 2009
Xie B 2008
Xie YF 2003
Yang PY 2013
Ye X 2008
Yin LJ 2008
Yuan TW 2013
Zeng CS 2014
Zeng CS 2012
Zeng BZ 2010
Zhang SZ 2012
Zhang XQ 2012B
Zheng C 2018
Zhu X 2003
Random sequence generation (selection bias)
Allocation concealment (selection bias)
Blinding of participants and personnel (performance bias)
Blinding of outcome assessment (detection bias)
Incomplete outcome data (attrition bias)
Selective reporting (reporting bias)
Other bias

Supplementary Figure 1. Risk of bias summary: review of authors' judgments about each risk of bias item for included studies. **Note:** Each color represents a different level of bias: red for high-risk, green for low-risk, and yellow for unclear-risk of bias.

A

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Odds Ratio M-H, Fixed, 95% CI
Dong HT 2008	32	67	45	66	19.9%	0.43 [0.21, 0.86]
Jiang CY 2013	5	30	14	33	9.3%	0.27 [0.08, 0.89]
Wang HB 2013	15	43	16	42	8.8%	0.87 [0.36, 2.11]
Wang XH 2009	8	30	19	30	11.7%	0.21 [0.07, 0.63]
Xiao ZY 2009	9	26	10	26	5.5%	0.85 [0.27, 2.62]
Yin LJ 2008	15	48	17	48	9.8%	0.83 [0.35, 1.94]
Zeng CS 2014	8	30	11	30	6.8%	0.63 [0.21, 1.88]
Zhang XQ 2012A	35	74	52	77	22.5%	0.43 [0.22, 0.83]
Zhang XQ 2012B	14	14	13	13		Not estimable
Zheng C 2018	2	30	7	28	5.7%	0.21 [0.04, 1.14]
Total (95% CI)		**392**		**393**	**100.0%**	**0.49 [0.36, 0.67]**
Total events	143		204			

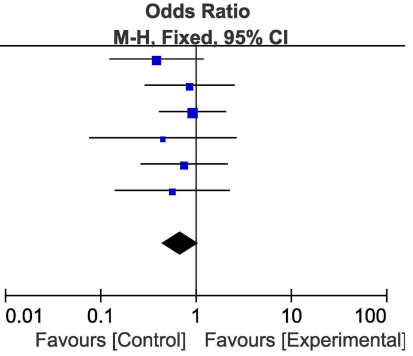
Heterogeneity: Chi² = 8.65, df = 8 (P = 0.37); I² = 8%
Test for overall effect: Z = 4.58 (P < 0.00001)



B

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Odds Ratio M-H, Fixed, 95% CI
Jiang CY 2013	6	30	13	33	21.4%	0.38 [0.12, 1.20]
Xiao ZY 2009	12	26	13	26	15.1%	0.86 [0.29, 2.55]
Yin LJ 2008	20	48	21	48	26.4%	0.92 [0.41, 2.06]
Zeng BZ 2010	2	31	4	30	8.2%	0.45 [0.08, 2.65]
Zeng CS 2014	10	30	12	30	17.3%	0.75 [0.26, 2.15]
Zheng C 2018	4	30	6	28	11.6%	0.56 [0.14, 2.26]
Total (95% CI)		**195**		**195**	**100.0%**	**0.69 [0.44, 1.07]**
Total events	54		69			

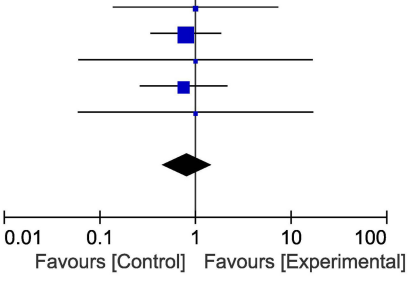
Heterogeneity: Chi² = 1.98, df = 5 (P = 0.85); I² = 0%
Test for overall effect: Z = 1.65 (P = 0.10)



C

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Odds Ratio M-H, Fixed, 95% CI
Sun JH 2006	2	64	2	64	8.2%	1.00 [0.14, 7.33]
Wang HB 2013	19	43	21	42	50.0%	0.79 [0.34, 1.86]
Xiong TQ 2010	1	26	1	26	4.1%	1.00 [0.06, 16.89]
Zeng CS 2012	10	30	12	30	33.7%	0.75 [0.26, 2.15]
Zhang SZ 2012	1	22	1	22	4.0%	1.00 [0.06, 17.07]
Total (95% CI)		**185**		**184**	**100.0%**	**0.81 [0.45, 1.48]**
Total events	33		37			

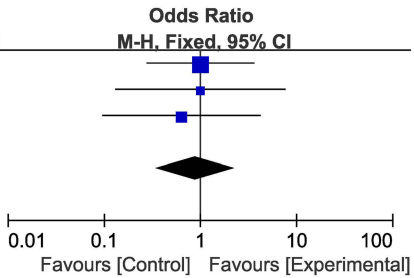
Heterogeneity: Chi² = 0.11, df = 4 (P = 1.00); I² = 0%
Test for overall effect: Z = 0.68 (P = 0.49)



D

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Odds Ratio M-H, Fixed, 95% CI
Sun JH 2006	5	64	5	64	50.2%	1.00 [0.27, 3.64]
Xiong TQ 2010	2	26	2	26	20.1%	1.00 [0.13, 7.69]
Zhang SZ 2012	2	22	3	22	29.7%	0.63 [0.10, 4.22]
Total (95% CI)		**112**		**112**	**100.0%**	**0.89 [0.35, 2.29]**
Total events	9		10			

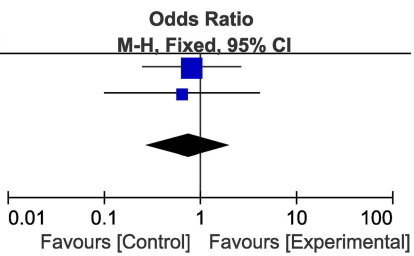
Heterogeneity: Chi² = 0.17, df = 2 (P = 0.92); I² = 0%
Test for overall effect: Z = 0.24 (P = 0.81)



E

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Odds Ratio M-H, Fixed, 95% CI
Wang HB 2013	6	43	7	42	68.5%	0.81 [0.25, 2.65]
Zeng CS 2014	2	30	3	30	31.5%	0.64 [0.10, 4.15]
Total (95% CI)		**73**		**72**	**100.0%**	**0.76 [0.28, 2.06]**
Total events	8		10			

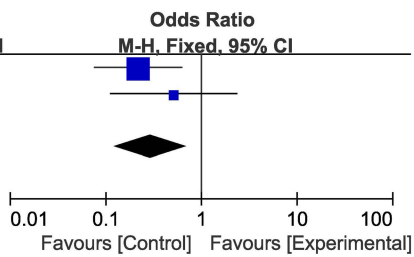
Heterogeneity: Chi² = 0.04, df = 1 (P = 0.84); I² = 0%
Test for overall effect: Z = 0.54 (P = 0.59)



F

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Odds Ratio M-H, Fixed, 95% CI
Jiang CY 2013	11	30	24	33	75.7%	0.22 [0.07, 0.63]
Zheng C 2018	3	30	5	28	24.3%	0.51 [0.11, 2.37]
Total (95% CI)		**60**		**61**	**100.0%**	**0.29 [0.12, 0.69]**
Total events	14		29			

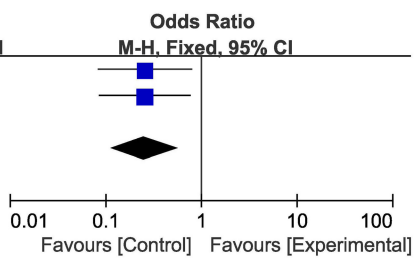
Heterogeneity: Chi² = 0.81, df = 1 (P = 0.37); I² = 0%
Test for overall effect: Z = 2.79 (P = 0.005)



G

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Odds Ratio M-H, Fixed, 95% CI
Xie YF 2003	6	31	15	31	49.0%	0.26 [0.08, 0.80]
Zeng BZ 2010	7	31	16	30	51.0%	0.26 [0.08, 0.77]
Total (95% CI)		**62**		**61**	**100.0%**	**0.26 [0.12, 0.56]**
Total events	13		31			

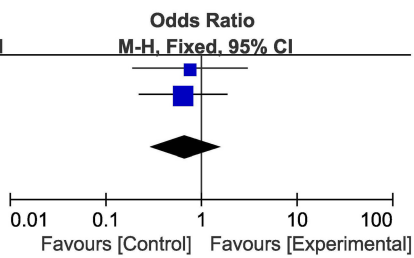
Heterogeneity: Chi² = 0.00, df = 1 (P = 1.00); I² = 0%
Test for overall effect: Z = 3.37 (P = 0.0007)



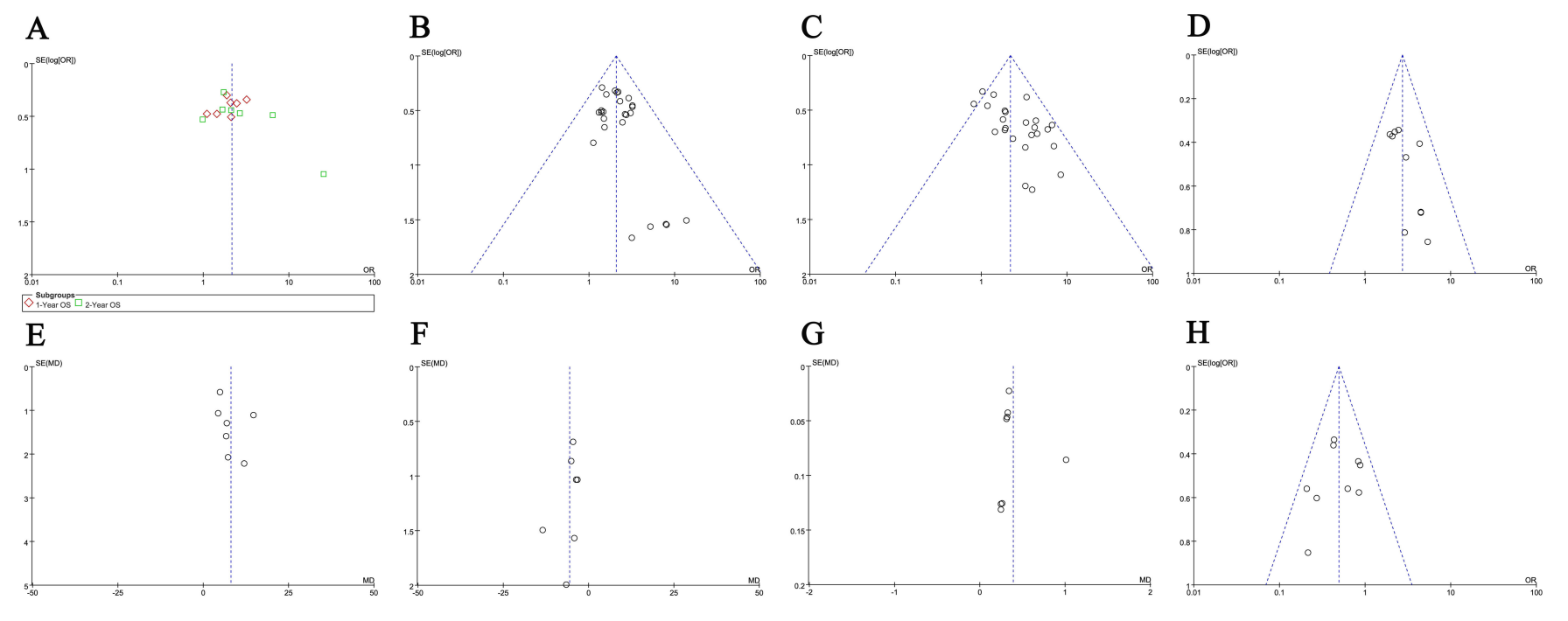
H

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Odds Ratio M-H, Fixed, 95% CI
Wang HB 2013	4	43	5	42	35.3%	0.76 [0.19, 3.05]
Zeng CS 2014	9	30	12	30	64.7%	0.64 [0.22, 1.87]
Total (95% CI)		**73**		**72**	**100.0%**	**0.68 [0.29, 1.60]**
Total events	13		17			

Heterogeneity: Chi² = 0.03, df = 1 (P = 0.85); I² = 0%
Test for overall effect: Z = 0.88 (P = 0.38)



Supplementary Figure 2. Forest plot of the comparison of adverse effects including leukopenia (A), gastrointestinal adverse effects (B), nausea and vomiting (C), anorexia (D), thrombocytopenia (E), hepatotoxicity (F), myelosuppression (G) and anemia (H) between the experimental and control group. Control group, conventional treatment alone group; Experimental group, conventional treatment and JLC combined group; JLC, Jinlong capsule. The fixed-effects meta-analysis model (Mantel–Haenszel method) was used.


A
SE(log[OR])
OR
Subgroups
1-Year OS
2-Year OS
B
SE(log[OR])
OR
C
SE(log[OR])
OR
D
SE(log[OR])
OR
E
SE(MD)
MD
F
SE(MD)
MD
G
SE(MD)
MD
H
SE(log[OR])
OR

Supplementary Figure 3. Funnel plot of 12- and 24-month overall survival (OS, A), overall response rate (ORR, B), disease control rate (DCR, C), quality of life improved rate (QIR, D), $CD4^+$ (E), $CD8^+$ (F), $CD4^+/CD8^+$ (G), and leukopenia (H).

Supplementary Table 1. Quality assessment of non-randomized comparative studies

Study	Non-randomized studies								Additional criteria in comparative study				Total
	A	B	C	D	E	F	G	H	I	J	K	L	
Jia CH 2008[19]	2	1	2	1	2	1	2	0	2	2	2	2	19
Li H 2007[23]	2	1	2	1	1	2	2	0	2	2	2	2	19
Liang TJ 2005[24]	2	1	2	1	2	2	2	0	2	2	2	2	20
Liu ZY 2015[25]	2	1	2	1	2	1	2	0	2	2	2	2	19
Sun JH 2006[27]	2	1	2	2	2	2	2	0	2	2	2	2	21
Wang HB 2013[29]	2	1	2	2	2	2	2	0	2	2	2	2	21
Xiong TQ 2010[34]	2	1	2	2	2	1	2	0	2	2	2	2	20
Zhang XQ 2012[43]	2	1	2	2	2	2	2	0	2	2	2	2	21

Notes: The items are scored 0 (not reported), 1 (reported but inadequate) and 2 (reported and adequate).

A: A clearly stated aim; B: Inclusion of consecutive patients; C: Prospective collection of data; D: Endpoints appropriate to the aim of the study; E: Unbiased assessment of the study endpoint; F: Follow-up period appropriate to the aim of the study; G: Loss to follow up less than 5%; H: Prospective calculation of the study size; I: An adequate control group; J: Contemporary groups; K: Baseline equivalence of groups; L: Adequate statistical analyses.

Supplementary Table 2. Publication bias on therapeutic efficacy indexes (OS, ORR, DCR and QIR), immune function indexes ($CD4^+$, $CD8^+$, and $CD4^+/CD8^+$) and leucopenia.

Publication Bias	**Therapeutic efficacy indexes**					**Immune function indexes**			**Adverse events**
	12-month OS	24-month OS	ORR	DCR	QIR	$CD4^+$	$CD8^+$	$CD4^+/CD8^+$	Leucopenia
Begg	0.764	0.133	0.168	0.035	0.107	0.133	0.548	0.902	0.675
Egger	0.301	0.161	0.049	0.001	0.036	0.321	0.331	0.603	0.542
Trim and fill analysis									
before			$P < .0001$	$P < .0001$	$P < .0001$				
after			$P < .0001$	$P < .0001$	$P < .0001$				

Notes: Parameters discussed in over 7 papers were conducted bias analyses.

Abbreviations: OS: overall survival; ORR: overall response rate; DCR: disease control rate; QIR: quality of life improved rate.

Supplementary Table 3. Subgroup analyses of ORR and DCR between the experimental and control group.

Parameter	Factors at study level	Patients Con/Exp	Analysis method	Heterogeneity I^2 (%)	Heterogeneity *P*-value	Odds Ratio	95% CI	*P*-value
ORR	**Therapeutic regimen**							
	JLC+TACE	739/719	Fixed	0	0.96	1.93	1.56-2.38	<0.00001
	JLC+SST	157/157	Fixed	0	0.97	7.37	1.91-28.36	0.004
	JLC+RT	117/116	Fixed	0	0.93	3.02	1.72-5.31	0.0001
	Study sample size							
	>80	719/683	Fixed	0	0.83	2.06	1.64-2.59	<0.00001
	<80	379/380	Fixed	0	0.89	2.06	1.48-2.88	<0.0001
	Type of control trials							
	RCTs	677/654	Fixed	0	0.93	2.06	1.63-2.61	<0.00001
	non-RCTs	421/409	Fixed	0	0.69	2.07	1.52-2.82	<0.00001
DCR	**Therapeutic regimen**							
	JLC+TACE	672/653	Fixed	6	0.39	1.66	1.26-2.18	0.0003
	JLC+SST	157/157	Fixed	0	0.65	3.90	2.42-6.29	<0.00001
	JLC+RT	117/116	Fixed	0	0.76	4.50	1.46-13.86	0.009
	Study sample size							
	>80	652/617	Fixed	24	0.23	1.62	1.22-2.15	0.0009
	<80	379/380	Fixed	0	0.91	3.46	2.40-4.99	<0.00001
	Type of control trials							
	RCTs	610/588	Fixed	0	0.83	2.48	1.84-3.33	<0.00001
	non-RCTs	421/409	Random	63	0.01	2.09	1.11-3.94	0.02

Notes: Con, Control group (Conventional treatment alone group); Exp, Experimental group (Conventional treatment and JLC combined group).

Abbreviations: ORR: overall response rate; DCR: disease control rate; JLC: Jinlong capsule; TACE: transcatheter arterial chemoembolization; SST: Support and symptomatic treatment; RT: Radiotherapy; RCTs; randomized controlled trials.