

Evaluation of LiangXue JieDu Therapy in Combination With Western Medicine for Acute-On-Chronic Liver Failure: A Systematic Review and meta-Analysis

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Objectives: To assess the efficacy of LiangXue JieDu (LXJD) therapy in combination with Western medicine (WM) for acute-on-chronic liver failure (ACLF).

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Shi K, Zhang Q, Hou J, Zhang Y, Bi Y and Wang X (2022) Evaluation of LiangXue JieDu Therapy in Combination With Western Medicine for Acute-On-Chronic Liver Failure: A Systematic Review and meta-Analysis. Front. Pharmacol. 13:905215. doi: 10.3389/fphar.2022.905215 **Methods:** Articles on randomized controlled trials of LXJD therapy for ACLF were obtained from PubMed, Embase, Cochrane Library, Web of Science, Chinese National Knowledge Infrastructure, VIP, Wanfang, and China Biology Medicine databases, with the search range from database inception to March 2022. We evaluated the quality of data from these articles using the Cochrane risk-of-bias tool. Evaluation indicators were total effective rate, mortality rate, complications, liver and coagulation function, and Traditional Chinese medicine (TCM) syndrome score. We then calculated the risk ratio (RR) for dichotomous variables and mean difference (MD) for continuous variables with a 95% confidence interval (CI).

Results: The meta-analysis included 18 studies with moderate quality and totaling 1,609 patients. Compared with WM alone, LXJD therapy plus WM improved total effective rate [RR = 1.34, 95% CI: (1.24, 1.45)], while reducing mortality rate [RR = 0.54, 95% CI: (0.42, 0.70)] and complications [RR = 0.43, 95% CI: (0.26, 0.71)]. The combined treatment also improved prothrombin activity [MD = 1.30, 95% CI: (1.02, 1.59)], prothrombin time [MD = -0.90, 95% CI: (-1.40, -0.39)], international normalized ratio [MD = -0.59, 95% CI: (-0.93, -0.25)], alanine aminotransferase [MD = -0.92, 95% CI: (-1.30, -0.55)], aspartate aminotransferase [MD = -0.57, 95% CI: (-0.93, -0.21)], total bilirubin [MD = -1.07, 95% CI: (-1.38, -0.76)], and TCM syndrome score [MD = -1.70; 95% CI: (-2.03, -1.37)].

Conclusions: This study suggests that LXJD therapy plus WM can significantly improves ACLF clinical symptoms and short-term outcomes. However, more high-quality trials are required to confirm the efficacy of LXJD therapy.

Keywords: LiangXue JieDu, traditional Chinese medicine, meta-analysis, actue-on-chronic liver failure, randomized controlled trials

1 INTRODUCTION

Acute-on-chronic liver failure (ACLF) refers to the acute decompensation of chronic liver disease, with jaundice, coagulopathy, ascites, and hepatic encephalopathy as the main clinical manifestations (Wu et al., 2018). In China, the main etiology of ACLF is associated with hepatitis B virus infection (Bernal et al., 2015). A major health problem, ACLF results in high mortality rate and severe multi-organ damage (Li et al., 2021). Currently, effective drugs for ACLF are lacking and treatment mainly involves artificial livers, liver transplantation, and other symptomatic treatments (Sarin and Choudhury., 2016). However, a shortage in donor livers limits widespread implementation of transplants, and overall clinical efficacy has been unsatisfactory (Sarin and Choudhury, 2016). Therefore, novel treatment methods for ACLF are urgently needed.

Traditional Chinese medicine (TCM) has been used for centuries to treat liver disease. TCM is clinically effective for promoting lowering jaundice, endotoxins, and inflammation, while enhancing liver regeneration (Cai et al., 2020; Xu et al., 2020). TCM categorizes ACLF as "jaundice," and its basic pathogenesis is concentrated in "poison, heat, dampness, and stasis" (Shi et al., 2021). Syndromes associated with heat, poison, and stasis such as ACLF are commonly treated with the cool blood detoxification method ("LiangXue JieDu" in Chinese, abbreviated to LXJD) (Liu et al., 2014; Zhang, 2021). TCM theory postulates that heat, toxins, and blood stasis are pathological products and pathogenic factors. Both stasis and heat negatively affect liver function and cause complications. In principle, LXJD lowers heat, detoxifies, cools blood, and activates blood circulation, resulting in unobstructed Qi and blood flow; as a result, liver damage and disease progression are prevented (China Association of Chinese Medicine, 2019). Several clinical studies have recently evaluated the combined effects of LXJD therapy and Western medicine (WM) on ACLF. For example, a previous study found that detoxification and stasis-resolving granules are beneficial for improving jaundice and alleviating various other symptoms (Wang et al., 2014). Our previous study also reported that Jiedu Liangxue Jianpi prescriptions had a positive effect on ACLF treatment (Shi et al., 2021). However, the efficacy of LXJD therapy has not yet been systematically evaluated.

Accordingly, this study performed a meta-analysis of randomized controlled trials (RCTs) to assess the efficacy of LXJD combined with WM in treating ACLF.

2 MATERIALS AND METHODS

2.1 Search Strategy

The study was performed according to the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidelines (Cumpston et al., 2019). Two researchers (KS and JH) separately searched eight databases (PubMed, Embase, Cochrane Library, Web of Science, Chinese National Knowledge Infrastructure, Wanfang, VIP, and China Biology Medicine) from their inception until March 2022. Search languages were Chinese and English. We conducted manual retrieval and secondary searches to ensure comprehensive literature retrieval. **Table 1** shows the PubMed search strategy as an example.

2.2 Inclusion and Exclusion Criteria

Studies were included if: 1) patients were diagnosed with ACLF according to consensus recommendations of the Asian Pacific Association for the Study of the Liver (APASL) (Sarin et al., 2019); 2) they were RCTs; 3) treatment involved LXJD therapy plus WM; 4) patients were classified as having heat-toxin-stasis syndrome; 5) at least one of the following indicators were reported: total effective rate, mortality rate, complication, alanine aminotransferase (ALT), aspartate aminotransferase (AST), total bilirubin (TBIL), albumin (ALB), prothrombin activity (PTA), prothrombin time (PT), international normalized ratio (INR), and TCM syndrome score. Primary outcomes were total effective rate and mortality rate, whereas secondary outcomes were complication rate, liver function, coagulation function, and TCM syndrome score.

Exclusion criteria were as follows: 1) duplicated or redundant study; 2) reviews, animal experiments, and non-RCTs; 3) non-LXJD therapy or LXJD combined with other TCM therapies; 4) acute, subacute, or chronic liver failure; 5) incomplete data.

2.3 Data Extraction and Quality Assessment

Two researchers (KS and JH) independently performed the literature search and extracted data based on inclusion and exclusion criteria. Data extraction included title, author name, publication date, sample size, gender, age, intervention measures, course of treatment, and observed outcome indicators. If the two researchers disagreed, a third party was consulted to reach a resolution (QZ and YFB).

Literature quality was evaluated using the Cochrane Collaboration's tool, accounting for seven sources of bias: random-sequence generation, allocation concealment, blinding of investigators and participants, blinding of outcome evaluation, incomplete outcome data, selective reporting, and other. Reports in line with quality evaluation criteria were categorized as low risk; otherwise, they were considered high risk. Studies without sufficient information for assessment were labeled as unclear risk.

2.4 Statistical Analysis

All data analyses were performed in Stata 16.0 (Stata Corp, College Station, TX) and R (version 4.0.5, The R Foundation, Vienna, Austria). Risk ratio (RR) and 95% confidence interval (CI) were used for analyzing dichotomous variables. Continuous variables were analyzed using mean difference (MD) and 95% CI. Effect models were selected based on I^2 and *p*-values. A random-effects model was used when $I^2 > 50\%$ or p < 0.1; otherwise, a fixed-effects model was applied. Sensitivity analysis was conducted to assess the stability of results after removing individual studies. A funnel plot was generated to evaluate potential publication bias.

TABLE 1 | Search strategy.

#1 acute-on-chronic liver failure [title/topic]
#2 ACLF [title/topic]
#3 liver failure [title/topic]
#4 Blood cooling detoxification method [title/topic]
#5 Blood cooling [title/topic]
#6 detoxification [title/topic]
#7 LiangXue JieDu therapy [title/topic]
#8 LiangXue [title/topic]
#9 JieDu [title/topic]
#10 #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR#9
#11 Randomized controlled trials [title/topic]
<pre>#12 Random [title/topic]</pre>
±13 #10 OR #11 OR #12

3 RESULTS

3.1 Literature Search and Patients' Characteristics

The literature search initially yielded 786 articles, and 435 duplicate studies were excluded. Another 259 articles were excluded because they were reviews, animal experiments, or non-RCTs. The remaining 92 articles were downloaded for full text review. Of these, 74 studies were further excluded because they lacked primary data, combined WM with other TCM, or did not investigate ACLF. The final meta-analysis included 18 studies and 1,609 patients (Liu et al., 2014; Wang et al., 2014; Liu et al., 2015; Duan et al., 2016; Sun et al., 2016; Xiao et al., 2016; Zhao, 2016;

Dang et al., 2017; Liu and Bai, 2017; Lou, 2017; Pang and Yang, 2017; Chen et al., 2018; Shi et al., 2018; Yin and Wen, 2018; Zhou et al., 2018; Shi et al., 2021; Zhang, 2021; Huang et al., 2022). Inclusion and exclusion procedures are shown in **Figure 1**. Features of included studies are presented in **Table 2**.

3.2 Quality Assessment

We evaluated article quality using the bias assessment tool recommended by the Cochrane Collaboration (Figures 2, 3). Nine studies used a random number table, while another nine mentioned the word "random," but did not describe any randomization methods. With insufficient information to determine the risks of blinding investigators or participants, we classified these studies as having unclear risks. No studies were labeled as having incomplete data or other biases, so they were considered low risk. Four studies reported cases of detachment and provided a reasonable explanation. Overall, the studies included in our meta-analysis were of moderate quality.

3.3 Outcome Measures

3.3.1 Total Effective Rate and Mortality Rate

We found 14 and 5 studies that compared the effects of LXJD therapy plus WM on total effective rate and mortality rate, respectively. We adopted a fixed-effects model based on the *p*-value and I^2 value. The RRs (95% CI) were 1.34 (1.24, 1.45) and 0.54 (0.42, 0.70). Compared with WM alone, combination therapy improved effectiveness and reduced mortality (**Figures 4A,B**).



TABLE 2 | Characteristics of included studies.

Author, year	Cases	Age	Gender		Course	Intervention	Duration/	Outcome	
	т	С	Male	Female	of disease range	т	С	follow up	measures ^a
Liu et al., (2014)	64/41	T: 43 ± 21.02 C: 42 ± 22.15	97/8		T: 15.41 ± 3.12 C: 16.1 ± 2.78	LiangXue JieDu Decoction + WM	WM	8 W/48 W	1) 2) 3) 6)
Wang et al., (2014)	30/30	NA	41/19		NA	JieDu HuaYu Granule + WM	WM	8 W/48 W	2) 3)
Liu et al., (2015)	30/28	NA	53/5		NA	LiangXue JieDu Huayu Prescriptions + WM	WM	4 W	1) 2) 3)
Duan et al., (2016)	29/29	T: 40 ± 20.02 C: 41.1 ± 23.31	39/19		T: 14.01 ± 5.31 C: 15.63 ± 6.01	LiangXue JieDu Huayu Prescriptions + WM	WM	8 W	1)
Zhao, 2016	60/60	T: 45.5 ± 10.5 C: 45.7 ± 10.7	94/26		NA	JieDu LiangXue Prescriptions + WM	WM	8 W	2) 3)
Sun et al., (2016)	39/20	T: 16–62 C: 20–63	50/9		NA	LiangXue JieDu Huayu Prescriptions + WM	WM	8 W	2) 3)
Xiao et al., (2016)	30/34	NA	NA		NA	QingRe JieDu LiangXue Prescriptions + WM	WM	NA	1) 2) 3) 5)
Liu and Bai., (2017)	45/45	T: 53.32 ± 1.1 C: 53.22 + 1.1	47/43		T: 8.15 ± 1.1 C: 8.25 + 1.2	JieDu LiangXue Decoction + WM	WM	8 W	1) 2) 3) 5)
Dang et al., (2017)	33/32	T: 45.76 ± 10.65 C: 46.03 ± 11.12	55/13		T: 14.82 ± 5.46 C: 15.14 ± 6.11	YinHu TuiHuang Prescriptions + WM	WM	8 W	2) 3) 5)
Lou, 2017	102/54	$T:43.45 \pm 9.98$ C: 44.19 + 10.95	129/27		NA	LiangXue JieDu HuaYu Decoction + WM	WM	12 W	1) 2) 3)
Pang and Yang., (2017)	43/43	T: 36.24 ± 4.69 C: 35.78 + 5.01	75/11		T: 2.45 ± 0.21 C: 2.39 + 0.32	LiangXue JieDu Decoction + WM	WM	8 W	2) 3)
Shi et al., (2018)	59/59	T: 47.2 ± 7.2 C: 48.1 + 8.1	96/22		NA	JieDu HuaYu II Prescriptions + WM	WM	8 W	1) 2) 3)
Chen et al., (2018)	51/50	NA	53/48		T: 0.2–16 C: 0.1–15	LiangXue JieDu HuaYu Prescriptions + WM	WM	4 W	1) 5)
Zhou et al., (2018)	64/56	T: 33–52 C: 30–49	72/56		T: 2–15 C: 2–12	JieDu JuaYu Granule + WM	WM	8 W	1) 2) 3)
Yin et al., 2020	49/49	T: 45.17 ± 12.85 C: 44.96 ± 12.34	82/16		T: 16.3 ± 4.21 C: 16.6 ± 4.44	LiangXue JieDu HuaYu Decoction + WM	WM	8 W	1) 2) 3) 4) 5)
Shi et al., (2021)	36/39	T: 41.8 ± 12.3 C: 43.3 + 9.6	61/14		NA	JieDu LiangXue JianPi Prescriptions + WM	WM	8 W	1) 2)
Zhang, 2021	48/48	T: 41.27 ± 20.01 C: 41.58 ± 23.29	78/18		T: 3.58 ± 1.29 C: 3.76 + 1.31	LiangXue JieDu HuaYu Decoction + WM	WM	8 W	1) 2) 3) 5)
Huang et al., 2021	40/40	T: 46.5 ± 11.2 C: 47.8 ± 13.4	50/30		NA	Qinghuang Yin + WM	WM	8 W	1) 2) 3) 4)

^aOutcome measures.

1) total effective rate; 2) liver function; 3) coagulation function; 4) TCM, syndrome score; 5) complications; 6) mortality rate.

T, treatment group; C, control group; NA, not available; WM, western medicine; W, week.

3.4 Complication Rate

Six studies reported complication rates. We selected a randomeffects model because the complication rate was heterogeneous $(I^2 = 62\%, p = 0.02)$. The results suggested that LXJD therapy plus WM had a significantly lower complication rate than WM alone (RR = 0.43; 95% CI: [0.26, 0.71]) (**Figure 4C**).

3.5 Coagulation Function

Fifteen studies reported PTA and seven studies reported PT data. Based on the *p*-value and I^2 value, we adopted a random-effects model. The MDs (95% CI) of PTA and PT were 1.30 (1.02, 1.59) and -0.90 (-1.40, -0.39), respectively, indicating that PTA levels were significantly higher and PT significantly lower in the combined-treatment group than in the control group (**Figures 5A,B**).

Two studies included INR data. Heterogeneity analysis led us to use a fixed-effects model. We found that LXJD therapy plus WM significantly reduced the level of INR than WM alone (MD = -0.59; 95% CI: [-0.93, -0.25]) (**Figure 5C**).

3.6 Liver Function

Thirteen studies reported serum ALT levels, 12 documented AST and ALB levels, while 16 reported TBIL levels. Based on the *p*-value and I^2 value, we adopted a random-effects model. The MDs (95% CI) of ALT, AST, and TBIL were -0.92 (-1.30, -0.55), -0.57 (-0.93, -0.21), and -1.07 (-1.38, -0.76), respectively (**Figures 6A-C**). Compared to WM alone, LXJD therapy combined with WM was significantly more effective at decreasing ALT, AST, and TBIL levels. However, the MD (95% CI) of ALB was 0.98 (0.57, 1.39), suggesting that the combined-treatment group did not result in better ALB levels than WM alone (**Figure 6D**).

3.7 Traditional Chinese Medicine Syndrome Score

Two studies reported TCM syndrome scores, and the heterogeneity analysis revealed homogeneity. The fixed-effects



model indicated that TCM syndrome score improved more with combined treatment than with WM alone (MD = -1.70; 95% CI: [-2.03, -1.37]) (**Figure 7**).

3.8 Commonly Prescribed Chinese Medicines

We analyzed prescription composition in 18 studies and listed the 10 most frequently used Chinese medicines in LXJD therapy. These were *Artemisia capillaris* Thunb. (Asteraceae), *Paeonia lactiflora* Pall. (Ranunculaceae), *Hedyotis diffusa* Willd. (Rubiaceae), *Salvia miltiorrhiza* Bunge (Lamiaceae), and *Gardenia jasminoides* Ellis (Rubiaceae) (**Table 3**).

3.9 Adverse Events

Adverse outcomes were mentioned in two studies. One (Liu et al., 2014) reported five patients developing nausea after taking TCM. The second (Dang et al., 2017) reported no adverse reactions. These conditions can be significantly relieved through symptomatic treatment. None of the included studies described severe adverse events.

3.10 Sensitivity Analysis

Removing each of the included studies did not significantly alter results, indicating that our conclusions had low sensitivity and high stability.

3.11 Publication Bias

Fourteen studies reported the total effective rate. Analysis using inverted funnel plots showed that the distribution was asymmetric, indicating potential publication bias in these studies (**Figure 8**).

4 DISCUSSION

ACLF is a common and severe liver disease with high short-term mortality. Owing to its complex pathogenesis and lack of effective



Wang et al., 2014; Liu et al., 2015; Duan et al., 2016; Zhao, 2016; Sun et al., 2016; Xiao et al., 2016; Liu and Bai, 2017; Dang et al., 2017; Lou, 2017; Pang and Yang, 2017; Shi et al., 2018; Chen et al., 2018; Zhou et al., 2018; Yin and Wen, 2018; Shi et al., 2021; Zhang, 2021; Huang et al., 2022).

treatments, patients with ACLF tend to seek complementary and alternative therapies. As an auxiliary treatment, TCM has attracted increasing attention and research. Multiple studies have demonstrated that TCM plus WM has various advantages in improving both the prognosis and clinical symptoms of ACLF (Chen et al., 2018; Huang et al., 2022). Contemporary Chinese medicine generally agrees that the core pathogenesis of ACLF is associated with dampness, heat, and pathogens. Therefore, LXJD is an important principle in TCMbased treatment of ACLF (Zhang, 2021).

A	Experim	Total	Events	Total	Risk Ratio	RR	95%-0	Weight (fixed)	(random)
Study	Events	Total	Evenus	Total	Nisk Natio		3070-01	(lixed)	(randoni)
Wang et al. 2014	24	30	16	30	<u></u>	1.50	[1.03; 2.19]	4.4%	3.5%
Liu et al. 2015	26	30	21	28		1.16	[0.89; 1.49]	6.0%	7.8%
Duan et al. 2016	18	29	17	29	<u>_</u>	1.06	10.70: 1.61	4.7%	2.9%
Xiao et al. 2016	23	30	18	34		1.45	[1.00: 2.10]	4.7%	3.7%
Liu et al. 2017	44	45	34	45		1.29	[1.09: 1.54]	9.4%	17.2%
Dang et al. 2017	28	33	21	32		1 29	10 97 1 73	5.9%	6.1%
Louetal 2017	67	102	18	54		- 1 97	[1 32 2 95	6.5%	3.1%
Shi et al 2018	46	50	35	59		1 31	[1.02, 2.00]	0.0%	8 1%
Chen et al. 2018	40	51	32	50		1.01	[1.02, 1.03	8.0%	8.6%
Zhou et al. 2018	52	64	40	56		1 14	10 03 1 30	11.8%	12 3%
Vin et al. 2010	14	40	35	40		1.14	[1.03: 1.54]	0.7%	12.070
Chi et al. 2020		49	21	49		1.20	[1.03, 1.04	5.170	12.170
Shiret al. 2021	20	30	21	39		1.44	[1.03, 2.03		4.4%
Zhang et al. 2021	30	40	25	40		1.40	[1.02, 1.93]	0.9%	4.9%
Huang et al. 2021	32	40	21	40		1.52	[1.09; 2.13]	5.8%	4.6%
Fixed effect model		646		593	\$	1.34	[1.24; 1.45]	100.0%	
Random effects mod	el				◆	1.30	[1.21; 1.40]	-	100.0%
Heterogeneity: $I^{2} = 0\%$,	$\tau^2 = 0, p =$	0.63							
					0.5 1 2				
В	F armaniana		0	- f w = 1				14/0:044	Mainht
- Church i	Experime	Fatal	COI		Dick Datia		05% 01	weight	(vergint
Study	Events	Iotal	Events	otai	RISK RALIO	ĸĸ	35%-01	(lixed)	(random)
Liu et al. 2014	10	64	14	41	<u> </u>	0.46	[0.22; 0.93]	16.8%	13.5%
Zhao et al. 2016	18	60	26	60	- i	0.69	[0.43; 1.12]	25.6%	29.3%
Lou et al. 2017	29	102	30	54		0.51	[0.35: 0.76]	38.7%	45.0%
Chen et al. 2018	2	51	8	50 -		0.25	10 05: 1 101	8.0%	3.0%
Zhang et al. 2021	7	48	11	48		0.64	$[0.27 \cdot 1.50]$	10.9%	9.2%
						0.01	[0.21, 1.00]	10.070	0.270
Fixed effect model		325		253	I	0.54	[0.42; 0.70]	100.0%	
Random effects mode	1					0.55	[0.42; 0.71]		100.0%
Heterogeneity: $I^2 = 0\%$.	$r^2 = 0, p = 0$.64							
	-,,,				0.1 0.5 1 2 10				
•									
	Experi	nenta	i c	ontrol				Weight	Weight
Study	Events	Tota	I Events	Total	Risk Ratio	RR	95%-CI	(fixed)	(random)
Vice et al. 2016	e	30) 15	34		0.45	[0.20; 1.02]	13.3%	16.9%
Alao et al. 2016		45	5 16	45		0.19	[0.06; 0.60]	15.1%	11.5%
Liu et al. 2017				20		0.58	[0.42; 0.80]	28.8%	26.9%
Liu et al. 2017 Dang et al. 2017	18	33	3 30	32					00.00/
Liu et al. 2017 Dang et al. 2017 Chen et al. 2018	18 16	33	3 30 I 17	32 50		0.92	[0.53; 1.62]	16.2%	22.0%
Liu et al. 2017 Dang et al. 2017 Chen et al. 2018 Yin et al. 2020	18 16 3	33 51 49	3 30 I 17 Ə 14	32 50 49		0.92 0.21	[0.53; 1.62]	16.2% 13.2%	22.0% 11.3%
Liu et al. 2017 Dang et al. 2017 Chen et al. 2018 Yin et al. 2020 Zhang et al. 2021	18 16 3	33 51 49 48	3 30 1 17 9 14 3 14	32 50 49 48		0.92 0.21 0.21	[0.53; 1.62] [0.07; 0.70] [0.07: 0.70]	16.2% 13.2% 13.2%	22.0% 11.3% 11.3%
Liu et al. 2017 Liu et al. 2017 Dang et al. 2017 Chen et al. 2018 Yin et al. 2020 Zhang et al. 2021	18 16 3	33 51 49 48	3 30 1 17 9 14 3 14	32 50 49 48		0.92 0.21 0.21	[0.53; 1.62] [0.07; 0.70] [0.07; 0.70]	16.2% 13.2% 13.2%	22.0% 11.3% 11.3%
Liu et al. 2017 Liu et al. 2017 Dang et al. 2017 Chen et al. 2018 Yin et al. 2020 Zhang et al. 2021	18 16 3 3	33 51 49 48	3 30 1 17 9 14 3 14	32 50 49 48 258		0.92 0.21 0.21	[0.53; 1.62] [0.07; 0.70] [0.07; 0.70]	16.2% 13.2% 13.2%	22.0% 11.3% 11.3%
Liu et al. 2017 Liu et al. 2017 Dang et al. 2017 Chen et al. 2018 Yin et al. 2020 Zhang et al. 2021 Fixed effect model Random effects model	3 18 16 3 3	33 51 49 48 256	3 30 1 17 9 14 3 14	32 50 49 48 258		0.92 0.21 0.21 0.46 0.43	[0.53; 1.62] [0.07; 0.70] [0.07; 0.70] [0.35; 0.61] [0.26: 0.71]	16.2% 13.2% 13.2% 100.0%	22.0% 11.3% 11.3%
Liu et al. 2016 Liu et al. 2017 Dang et al. 2017 Chen et al. 2018 Yin et al. 2020 Zhang et al. 2021 Fixed effect model Random effects mo Heterogeneity / ² = 620	3 18 16 3 3 del % x ² = 0.21	33 51 49 48 256	3 30 17 9 14 3 14	32 50 49 48 258		0.92 0.21 0.21 0.46 0.43	[0.53; 1.62] [0.07; 0.70] [0.07; 0.70] [0.35; 0.61] [0.26; 0.71]	16.2% 13.2% 13.2% 100.0%	22.0% 11.3% 11.3% 100.0%

rate; (C) Forest plot of complications.

Here, our meta-analysis confirmed the advantages of LXJD in combination with WM as a treatment for ACLF. The addition of LXJD therapy to WM resulted in higher total effective rate, notably decreasing both mortality and complications, than WM alone. Coagulation and liver function are widely used as therapeutic indicators in clinical practice. Combined treatment significantly lowered PT, INR, ALT, AST, and TBIL levels while increasing PTA levels. These results indicate that LXJD therapy effectively accelerated jaundice elimination and recovery of liver synthesis in patients with ACLF, both key elements to reducing mortality rate. The TCM syndrome score is a common index for evaluating patient recovery. Two studies in our meta-analysis reported this index and demonstrated that adding LXJD therapy significantly reduced TCM syndrome scores compared with WM alone. However, because this analysis contained a small number of studies, further evaluation of TCM syndrome scores is

Α	Study	Total	Expe	rimental	Toto	Moon	Control	Ма	an D	ifforan	~~	МР	050/ 01	Weight	Weigh (random
	Study	Iotal	mean	50	Tota	mean	20	Me	an D	meren	ue	MD	35%-01	(lixed)	landom
	Liu et al. 2014	64	60.77	20.4000	41	43.08	12.7900			T	+	1.5	4 [1.10; 1.99]	7.5%	6.9%
	Wang et al. 2014	30	64.70	17.9000	30	46.80	14.1000			-		1.1	0 [0.55; 1.64]	5.0%	6.4%
	Liu et al. 2015	30	59.30	13.9000	28	47.50	16.1000			-	H	0.7	8 [0.24; 1.31]	5.2%	6.4%
	Duan et al. 2016	29	63,50	21,0000	29	46.00	17,4000				-	1.1	9 [0.62: 1.75]	4.8%	6.3%
	Sun et al. 2016	39	78 68	24 7800	20	62 30	24 9700			_		10	9 [0.52 1.67]	4 5%	6.2%
	Viao et al 2016	30	52.81	22 4500	3/	30 03	18 2100			_	_	0.8	1 [0.20.1.32]	5.7%	6.5%
	Liu at al 2017	45	74.25	10 2000	10	50.00	10.2100					- 23	1 [1 77: 2 95]	5.2%	6.40/
	Dong at al. 2017	40	74.20	14 6200	40	55.01	10.2000				_	1.0	2 [0.54: 4.55]	5.270	0.470
	Dang et al. 2017	400	/1.40	14.0200	52	05.91	10.3000					1.0	3 [0.51, 1.55]	0.0%	0.0%
	Lou et al. 2017	102	99.58	20.4600	54	85.74	18.4300				i.	1.0	2 [0.67; 1.37]	12.3%	7.4%
	Pang et al. 2017	43	87.43	21.1900	43	69.75	24.6400				- <u>-</u> -	1.3	4 [0.87; 1.81]	6.8%	6.8%
	Shi et al. 2018	59	52.50	4.1000	59	45.80	4.6000					1.5	3 [1.12; 1.94]	8.8%	7.1%
	Zhou et al. 2018	64	53.60	2.6400	56	47.13	4.0200				-	- 1.9	2 [1.48; 2.35]	7.9%	6.9%
	Yin et al. 2020	49	60.22	8.6900	49	45.30	7.1300				<u>-</u>	· 1.8	6 [1.39; 2.34]	6.6%	6.7%
	Zhang et al. 2021	48	60.34	8.3500	48	45.37	7.1600				-	- 1.9	1 [1.42; 2.40]	6.3%	6.7%
	Huang et al. 2021	40	48.44	4.4300	40	47.83	5.6700			+		0.1	2 [-0.32; 0.56]	7.8%	6.9%
	Eived offect model	705			600							1 2	0 [4 47: 4 40]	100 09/	
	Pandom offecto model	100			000						ž	1.0	0 [1.17, 1.42]	100.0%	100.00/
	Random effects model	2								_	—	1.3	0 [1.02; 1.69]		100.0%
	Heterogeneity: $I^{-} = 81\%$, π	$\tau^{-} = 0.2$	554, p	< 0.01											
								-2	-1	U	1 2				
В			Evneri	imental			ontrol							Weight	Weight
	Study	-	Lyber	montai			ondor							rioigin	roigin
	SILLUV	lotal	Mean	SD	Total	Mean	SD	Mear	n Diff	erence	•	MD	95%-CI	(fixed)	(random)
	Study	lotal	Mean	SD	Total	Mean	SD	Mea	n Diff	erence		MD	95%-CI	(fixed)	(random)
	Wang et al. 2014	30	Mean 16.80	SD 2.2000	Total 30	Mean 19.70	SD 3.1000	Meai 	n Diff	erence)	MD -1.06	95%-CI [-1.61; -0.52]	(fixed) 9.1%	(random) 13.6%
	Wang et al. 2014 Duan et al. 2016	30 29	Mean 16.80 15.90	SD 2.2000 3.0000	Total 30 29	Mean 19.70 18.90	SD 3.1000 3.4000	Mear 	n Diff — —	erence	•	MD -1.06 -0.92	95%-Cl [-1.61; -0.52] [-1.47; -0.38]	(fixed) 9.1% 9.1%	(random) 13.6% 13.6%
	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017	30 29 102	Mean 16.80 15.90 12.27	SD 2.2000 3.0000 1.9900	30 29 54	Mean 19.70 18.90 16.45	SD 3.1000 3.4000 2.0800	Mear 	n Diff —	erence	•	MD -1.06 -0.92 -2.06	95%-Cl [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65]	(fixed) 9.1% 9.1% 16.6%	(random) 13.6% 13.6% 14.6%
	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2018	30 29 102 64	Mean 16.80 15.90 12.27 19.07	SD 2.2000 3.0000 1.9900 3.7100	30 29 54 56	Mean 19.70 18.90 16.45 20.89	SD 3.1000 3.4000 2.0800 → 3.5400	Mear 	n Diff 	erence	•	MD -1.06 -0.92 -2.06 -0.50	95%-Cl [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13]	9.1% 9.1% 16.6% 20.3%	(random) 13.6% 13.6% 14.6% 14.9%
	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2018 Yin et al. 2020	30 29 102 64 49	Mean 16.80 15.90 12.27 19.07 16.34	SD 2.2000 3.0000 1.9900 3.7100 2.7400	Total 30 29 54 56 49	Mean 19.70 18.90 16.45 20.89 19.03	SD 3.1000 3.4000 2.0800 3.5400 3.1200	Mear 	n Diff 	erence	•	MD -1.06 -0.92 -2.06 -0.50 -0.91	95%-Cl [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.33; -0.49]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5%	(random) 13.6% 13.6% 14.6% 14.9% 14.5%
	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2018 Yin et al. 2020 Zhang et al. 2021	30 29 102 64 49 48	Mean 16.80 15.90 12.27 19.07 16.34 16.36	SD 2.2000 3.0000 1.9900 3.7100 2.7400 2.7500	30 29 54 56 49 48	Mean 19.70 18.90 16.45 20.89 19.03 19.05	SD 3.1000 3.4000 2.0800	Meai	n Diff 	erence	•	MD -1.06 -0.92 -2.06 -0.50 -0.91 -0.90	95%-Cl [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.33; -0.49] [-1.32; -0.48]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 15.2%	(random) 13.6% 13.6% 14.6% 14.9% 14.5% 14.5%
	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2018 Yin et al. 2020 Zhang et al. 2021 Huang et al. 2021	30 29 102 64 49 48 40	Mean 16.80 15.90 12.27 19.07 16.34 16.36 16.15	SD 2.2000 3.0000 1.9900 3.7100 2.7400 2.7500 3.2900	30 29 54 56 49 48 40	Mean 19.70 18.90 16.45 20.89 19.03 19.05 15.87	SD 3.1000 3.4000 2.0800	Meai	n Diff 	erence		MD -1.06 -0.92 -2.06 -0.50 -0.91 -0.90 0.08	95%-Cl [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.33; -0.49] [-1.32; -0.48] [-0.36; 0.52]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 15.2% 14.0%	(random) 13.6% 13.6% 14.6% 14.9% 14.5% 14.5% 14.4%
	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2017 Yin et al. 2020 Zhang et al. 2021 Huang et al. 2021	30 29 102 64 49 48 40	Mean 16.80 15.90 12.27 19.07 16.34 16.36 16.15	SD 2.2000 3.0000 1.9900 3.7100 2.7400 2.7500 3.2900	30 29 54 56 49 48 40	Mean 19.70 18.90 16.45 20.89 19.03 19.05 15.87	SD 3.1000 3.4000 2.0800	Meai	n Diff 	ference		MD -1.06 -0.92 -2.06 -0.50 -0.91 -0.90 0.08	95%-Cl [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.32; -0.49] [-1.32; -0.48] [-0.36; 0.52]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 15.2% 14.0%	(random) 13.6% 13.6% 14.6% 14.9% 14.5% 14.5% 14.4%
	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2017 Yin et al. 2020 Zhang et al. 2021 Huang et al. 2021 Fixed effect model	30 29 102 64 49 48 40 362	Mean 16.80 15.90 12.27 19.07 16.34 16.36 16.15	SD 2.2000 3.0000 1.9900 3.7100 2.7400 2.7500 3.2900	30 29 54 56 49 48 40 306	Mean 19.70 18.90 16.45 20.89 19.03 19.05 15.87	SD 3.1000 3.4000 2.0800		n Diff 	ference	•	MD -1.06 -0.92 -2.06 -0.50 -0.91 -0.90 0.08 -0.89	95%-Cl [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.32; -0.49] [-1.32; -0.48] [-0.36; 0.52] [-1.06; -0.73]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 15.2% 14.0% 100.0%	(random) 13.6% 13.6% 14.6% 14.9% 14.5% 14.5% 14.4%
	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2017 Yin et al. 2020 Zhang et al. 2021 Huang et al. 2021 Fixed effect model Random effects model	10tal 30 29 102 64 49 48 40 362	Mean 16.80 15.90 12.27 19.07 16.34 16.36 16.15	SD 2.2000 3.0000 1.9900 3.7100 2.7400 2.7500 3.2900	30 29 54 56 49 48 40 306	Mean 19.70 18.90 16.45 20.89 19.03 19.05 15.87	SD 3.1000 3.4000 2.0800			erence		MD -1.06 -0.92 -2.06 -0.50 -0.91 -0.90 0.08 -0.89 -0.90	95%-Cl [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.33; -0.49] [-1.32; -0.48] [-0.36; 0.52] [-1.06; -0.73] [-1.40; -0.39]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 15.2% 14.0% 100.0%	(random) 13.6% 13.6% 14.6% 14.9% 14.5% 14.5% 14.4%
	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2017 Yin et al. 2020 Zhang et al. 2021 Huang et al. 2021 Fixed effect model Random effects model Heterogeneity: / ² = 89%, τ	10tal 30 29 102 64 49 48 40 362 362	Mean 16.80 15.90 12.27 19.07 16.34 16.36 16.15	SD 2.2000 3.0000 1.9900 3.7100 2.7400 2.7500 3.2900 < 0.01	30 29 54 56 49 48 40 306	Mean 19.70 18.90 16.45 20.89 19.03 19.05 15.87	SD 3.1000 3.4000 2.0800 - 3.5400 3.1200 3.1200 3.1400 3.8200		n Diff	•erence		MD -1.06 -0.92 -2.06 -0.50 -0.91 -0.90 0.08 -0.89 -0.90	95%-Cl [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.32; -0.49] [-1.32; -0.48] [-0.36; 0.52] [-1.06; -0.73] [-1.40; -0.39]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 15.2% 14.0% 100.0%	(random) 13.6% 13.6% 14.6% 14.9% 14.5% 14.5% 14.5% 14.4%
	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2017 Zhou et al. 2018 Yin et al. 2020 Zhang et al. 2021 Huang et al. 2021 Fixed effect model Random effects model Heterogeneity: / ² = 89%, τ	$\begin{array}{c} 30\\ 29\\ 102\\ 64\\ 49\\ 48\\ 40\\ 362\\ c^2 = 0.4 \end{array}$	Mean 16.80 15.90 12.27 19.07 16.34 16.36 16.15	SD 2.2000 3.0000 1.9900 3.7100 2.7400 2.7500 3.2900 < 0.01	Total 30 29 54 56 49 48 40 306	Mean 19.70 18.90 16.45 20.89 19.03 19.05 15.87	SD 3.1000 2.0800	Mean		erence	2	MD -1.06 -0.92 -2.06 -0.50 -0.91 -0.90 0.08 -0.89 -0.90	95%-CI [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.33; -0.49] [-1.32; -0.48] [-0.36; 0.52] [-1.06; -0.73] [-1.40; -0.39]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 15.2% 14.0% 100.0%	(random) 13.6% 13.6% 14.6% 14.5% 14.5% 14.5% 14.5% 14.4%
	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2017 Yin et al. 2020 Zhang et al. 2021 Huang et al. 2021 Fixed effect model Random effects model Heterogeneity: $I^2 = 89\%$, τ	$ \begin{array}{r} 30 \\ 29 \\ 102 \\ 64 \\ 49 \\ 48 \\ 40 \\ 362 \\ x^2 = 0.4 \end{array} $	Mean 16.80 15.90 12.27 19.07 16.34 16.36 16.15	SD 2.2000 3.0000 1.9900 3.7100 2.7400 2.7500 3.2900 < 0.01	Total 30 29 54 56 49 48 40 306	Mean 19.70 18.90 16.45 20.89 19.03 19.05 15.87	SD 3.1000 3.4000 2.0800	Mean	n Diff	erence		MD -1.06 -0.92 -2.06 -0.50 -0.91 -0.90 0.08 -0.89 -0.90	95%-Cl [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.32; -0.49] [-1.32; -0.48] [-0.36; 0.52] [-1.06; -0.73] [-1.40; -0.39]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 15.2% 14.0% 100.0%	(random) 13.6% 13.6% 14.6% 14.9% 14.5% 14.5% 14.4%
с	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2017 Zhou et al. 2018 Yin et al. 2020 Zhang et al. 2021 Huang et al. 2021 Fixed effect model Random effects model Heterogeneity: $I^2 = 89\%$, τ	$\begin{array}{c} 30\\ 29\\ 102\\ 64\\ 49\\ 48\\ 40\\ 362\\ c^2 = 0.4 \end{array}$	Mean 16.80 15.90 12.27 19.07 16.34 16.36 16.15 131, <i>p</i> Exper	SD 2.2000 3.0000 1.9900 3.7100 2.7500 3.2900 < 0.01 imental	Total 30 29 54 56 49 48 40 306	Mean 19.70 18.90 16.45 20.89 19.03 19.05 15.87	SD 3.1000 3.4000 2.0800	Mean	n Diff	T 	1	MD -1.06 -0.92 -2.06 -0.50 -0.91 -0.90 0.08 -0.89 -0.90	95%-CI [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.32; -0.49] [-1.32; -0.48] [-0.36; 0.52] [-1.06; -0.73] [-1.40; -0.39]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 15.2% 14.0% 100.0% 	(random) 13.6% 13.6% 14.6% 14.9% 14.5% 14.5% 14.4% 100.0% Weight
с	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2017 Zhou et al. 2018 Yin et al. 2020 Zhang et al. 2021 Huang et al. 2021 Fixed effect model Random effects model Heterogeneity: / ² = 89%, τ	10tal 30 29 102 64 49 48 40 362 $c^2 = 0.4$ Total	Mean 16.80 15.90 12.27 19.07 16.34 16.36 16.15 131, <i>p</i> Experi Mean	SD 2.2000 3.0000 1.9900 2.7400 2.7500 3.2900 < 0.01 imental SD	Total 30 29 54 56 49 48 40 306	Mean 19.70 18.90 16.45 20.89 19.03 19.05 15.87 (Mean	SD 3.1000 3.4000 2.0800	Mean -2 -1 Mean	n Diff	ference		MD -1.06 -0.92 -2.06 -0.50 0.091 -0.90 0.08 -0.89 -0.90	95%-CI [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-1.32; -0.49] [-1.32; -0.48] [-1.32; -0.48] [-0.36; 0.52] [-1.06; -0.73] [-1.40; -0.39]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 14.0% 100.0% Weight (fixed)	(random) 13.6% 13.6% 14.6% 14.9% 14.5% 14.5% 14.4% 100.0% Weight (random)
с	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2017 Zhou et al. 2018 Yin et al. 2020 Zhang et al. 2021 Huang et al. 2021 Fixed effect model Random effects model Heterogeneity: $I^2 = 89\%$, τ Study	$\begin{array}{c} 30\\ 29\\ 102\\ 64\\ 49\\ 48\\ 40\\ \textbf{362}\\ \textbf{362}\\ \textbf{C}^2 = 0.4\\ \end{array}$	Mean 16.80 15.90 12.27 19.07 16.34 16.36 16.15 131, <i>p</i> Exper Mean 1.49	SD 2.2000 3.0000 1.9900 2.7400 2.7400 2.7500 3.2900 < 0.01 imental SD 0.3200	Total 30 29 54 56 49 48 40 306	Mean 19.70 18.90 16.45 20.89 19.03 19.05 15.87 (Mean 1.45	SD 3.1000 3.4000 2.0800	Mean -2 -1 Mean	n Diff	ference	2	MD -1.06 -0.92 -2.06 -0.50 -0.91 -0.90 0.08 -0.89 -0.89 -0.90 MD	95%-Cl [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.32; -0.48] [-0.36; 0.52] [-1.06; -0.73] [-1.40; -0.39] 95%-Cl	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 15.2% 14.0% 100.0% Weight (fixed) 38.2%	(random) 13.6% 13.6% 14.6% 14.9% 14.5% 14.5% 14.4% 100.0% Weight (random) 38.2%
с	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2017 Zhou et al. 2017 Zhang et al. 2020 Zhang et al. 2021 Huang et al. 2021 Fixed effect model Random effects model Heterogeneity: $I^2 = 89\%$, τ Study Sun et al. 2016 Dana et al. 2016	$\begin{array}{c} 30\\ 29\\ 102\\ 64\\ 49\\ 48\\ 40\\ 362\\ c^{2} = 0.4\\ \end{array}$	Mean 16.80 15.90 12.27 19.07 16.34 16.36 16.15 131, <i>p</i> Experi Mean 1.18	SD 2.2000 3.0000 1.9900 2.7400 2.7500 3.2900 < 0.01 imental SD 0.3300 0.2200	Total 30 29 54 56 49 48 40 306 Total 20	Mean 19.70 18.90 16.45 20.89 19.03 19.05 15.87 C Mean 1.45	SD 3.1000 3.4000 2.0800 → 3.5400 3.1200 3.1200 3.1200 3.1400 3.8200 	Mean -2 -1 Mean	n Diff	ference	2	MD -1.06 -0.92 -2.06 -0.50 0.091 -0.90 0.08 -0.89 -0.90 MD -0.566 0.61	95%-Cl [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.32; -0.48] [-0.36; 0.52] [-1.06; -0.73] [-1.40; -0.39] 95%-Cl [-1.11; -0.01]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 15.2% 14.0% 100.0% Weight (fixed) 38.3%	(random) 13.6% 13.6% 14.6% 14.5% 14.5% 14.5% 14.5% 14.4%
с	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2017 Zhou et al. 2017 Zhang et al. 2020 Zhang et al. 2021 Huang et al. 2021 Fixed effect model Random effects model Heterogeneity: I^2 = 89%, τ Study Sun et al. 2016 Pang et al. 2017	$\begin{array}{c} 30 \\ 29 \\ 102 \\ 64 \\ 49 \\ 48 \\ 40 \end{array}$ $\begin{array}{c} 362 \\ 362 \\ \mathbf{Total} \\ 39 \\ 43 \end{array}$	Mean 16.80 15.90 12.27 19.07 16.34 16.36 16.15 131, <i>p</i> Experiment Mean 1.18 1.17	SD 2.2000 3.0000 1.9900 3.7100 2.7400 2.7500 3.2900 < 0.01 imental SD 0.3300 0.3200	Total 30 29 54 56 49 48 40 306 Total 20 43	Mean 19.70 18.90 16.45 20.89 19.03 19.03 19.03 19.03 19.03 15.87 C Mean 1.45 1.46	SD 3.1000 3.4000 2.0800	Mean 	n Diff	ference	2	MD -1.06 -0.92 -2.06 -0.50 -0.91 -0.90 0.08 -0.89 -0.90 MD -0.56 -0.61	95%-Cl [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.32; -0.49] [-1.32; -0.48] [-0.36; 0.52] [-1.06; -0.73] [-1.40; -0.39] 95%-Cl [-1.11; -0.01] [-1.05; -0.18]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 15.2% 14.0% 100.0% Weight (fixed) 38.3% 61.7%	(random) 13.6% 13.6% 14.6% 14.5% 14.5% 14.5% 14.4% 100.0% Weight (random) 38.3% 61.7%
с	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2017 Zhou et al. 2018 Yin et al. 2020 Zhang et al. 2021 Huang et al. 2021 Fixed effect model Random effects model Heterogeneity: $I^2 = 89\%$, τ Study Sun et al. 2016 Pang et al. 2017 Fixed effect model	30 29 102 64 49 48 40 362 Total 39 43 82	Mean 16.80 15.90 12.27 19.07 16.34 16.36 16.15 131, <i>p</i> Exper Mean 1.18 1.17	SD 2.2000 3.0000 1.9900 3.7100 2.7500 3.2900 < 0.01 imental SD 0.3300 0.3200	Total 30 29 54 56 49 48 40 306 Total 20 43 63	Mean 19.70 18.90 16.45 20.89 19.03 19.05 15.87 C Mean 1.45 1.46	SD 3.1000 3.4000 2.0800 - 3.5400 3.1200 3.1400 3.8200 Control SD 0.6800 - 0.5800 -	Mean 	n Diff	ference		MD -1.06 -0.92 -2.06 -0.50 -0.90 0.08 -0.90 -0.89 -0.90 MD -0.56 -0.61 -0.59	95%-Cl [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.32; -0.48] [-0.36; 0.52] [-1.06; -0.73] [-1.40; -0.39] 95%-Cl [-1.11; -0.01] [-1.05; -0.18] [-0.93; -0.25]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 15.2% 14.0% 100.0% Weight (fixed) 38.3% 61.7% 100.0%	(random) 13.6% 13.6% 14.6% 14.5% 14.5% 14.5% 14.4% 100.0% Weight (random) 38.3% 61.7%
с	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2017 Zhou et al. 2017 Zhang et al. 2020 Zhang et al. 2021 Huang et al. 2021 Fixed effect model Random effects model Heterogeneity: I^2 = 89%, τ Study Sun et al. 2016 Pang et al. 2017 Fixed effect model Random effects model	30 29 102 64 49 48 40 362 Total 39 43 82	Mean 16.80 15.90 12.27 19.07 16.34 16.36 16.15 131, <i>p</i> Experiment Mean 1.18 1.17	SD 2.2000 3.0000 1.9900 3.7100 2.7400 3.2900 < 0.01 imental SD 0.3300 0.3200	Total 30 29 54 56 49 48 40 306 Total 20 43 63	Mean 19.70 18.90 16.45 20.89 19.03 19.05 15.87 C Mean 1.45 1.46	SD 3.1000 3.4000 2.0800	Mean -2 -1 Mean	n Diff	ference	2	MD -1.06 -0.92 -2.06 -0.50 -0.91 -0.90 0.08 -0.89 -0.90 MD -0.56 -0.61 -0.59 -0.59 -0.59 -0.59 -0.55	95%-Cl [-1.61; -0.52] [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.32; -0.48] [-1.32; -0.48] [-0.36; 0.52] [-1.06; -0.73] [-1.06; -0.73] [-1.40; -0.39] 95%-Cl [-1.11; -0.01] [-1.05; -0.18] [-0.93; -0.25] [-0.93; -0.25]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 15.2% 14.0% 100.0% Weight (fixed) 38.3% 61.7%	(random) 13.6% 13.6% 14.6% 14.5% 14.5% 14.5% 14.4% 100.0% Weight (random) 38.3% 61.7%
с	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2017 Zhou et al. 2017 Zhang et al. 2020 Zhang et al. 2021 Fixed effect model Random effects model Heterogeneity: $I^2 = 89\%$, τ Study Sun et al. 2016 Pang et al. 2017 Fixed effect model Random effects model Random effects model Random effects model	30 29 102 64 49 48 40 362 $t^2 = 0.4$ Total 39 43 82	Mean 16.80 15.90 12.27 16.34 16.36 16.15 131, <i>p</i> Experi Mean 1.18 1.17	SD 2.2000 3.0000 1.9900 2.7400 2.7400 2.7500 3.2900 < 0.01 imental SD 0.3300 0.3200	Total 30 29 54 56 49 48 40 306 Total 20 43 63	Mean 19.70 18.90 16.45 20.89 19.03 19.05 15.87 15.87 C Mean 1.45 1.46	SD 3.1000 3.4000 2.0800	Mean -2 -1 Mean	n Diff	ference		MD -1.06 -0.92 -2.06 -0.50 -0.91 -0.90 0.08 -0.89 -0.90 MD -0.56 -0.61 -0.59 -0.59 -0.59	95%-Cl [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.32; -0.49] [-1.32; -0.48] [-0.36; 0.52] [-1.06; -0.73] [-1.40; -0.39] 95%-Cl [-1.11; -0.01] [-1.05; -0.18] [-0.93; -0.25] [-0.93; -0.25]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 15.2% 14.0% 100.0% Weight (fixed) 38.3% 61.7% 100.0% 	(random) 13.6% 13.6% 14.6% 14.5% 14.5% 14.5% 14.4% 100.0% Weight (random) 38.3% 61.7% 100.0%
с	Wang et al. 2014 Duan et al. 2016 Lou et al. 2017 Zhou et al. 2017 Zhou et al. 2017 Zhang et al. 2020 Zhang et al. 2021 Huang et al. 2021 Fixed effect model Random effects model Heterogeneity: $I^2 = 89\%$, τ Study Sun et al. 2016 Pang et al. 2017 Fixed effect model Random effects model Heterogeneity: $I^2 = 0\%$, τ^2	30 29 102 64 49 48 40 362 $t^2 = 0.4$ Total 39 43 82 $t^2 = 0, p$	Mean 16.80 15.90 12.27 16.34 16.36 16.15 131, <i>p</i> Experi Mean 1.18 1.17 = 0.88	SD 2.2000 3.0000 1.9900 2.7400 2.7500 3.2900 < 0.01 imental SD 0.3300 0.3200	Total 30 29 54 56 49 48 40 306 Total 20 43 63	Mean 19.70 18.90 16.45 20.89 19.03 19.05 15.87 C Mean 1.45 1.46	SD 3.1000 3.4000 2.0800	Mean -2 -1 Mean	n Diff	ference	2	MD -1.06 -0.92 -2.06 -0.50 0.091 -0.90 0.08 -0.89 -0.90 MD -0.56 -0.61 -0.59 -0.59 -0.59	95%-CI [-1.47; -0.38] [-2.46; -1.65] [-0.86; -0.13] [-1.33; -0.49] [-1.32; -0.48] [-0.36; 0.52] [-1.06; -0.73] [-1.40; -0.39] 95%-CI [-1.11; -0.01] [-1.05; -0.18] [-0.93; -0.25] [-0.93; -0.25]	(fixed) 9.1% 9.1% 16.6% 20.3% 15.5% 15.2% 14.0% 100.0% Weight (fixed) 38.3% 61.7%	(random) 13.6% 13.6% 14.6% 14.5% 14.5% 14.5% 14.4%

necessary. We also did not find any beneficial effect of LXJD

therapy on ALB levels. The pathobiology of ACLF is characterized by hepatocyte damage, systemic inflammation, and death (Vanlangenakker et al., 2008). Previous clinical, *in vitro*, and *in vivo* studies have reported that TCM has underlying hepatoprotective and pharmacological effects, including anti-inflammatory, antioxidant, anti-apoptotic, and anti-cholestatic effects (Zhuang et al., 2020; Yang et al., 2015; Cai et al., 2020). Specifically, LXJD therapy has multicomponent and

A	1	Europeine entel	-		
	Study	Total Mean SD	Total Mean SI	Mean Difference	Weight Weight MD 95%-Cl (fixed) (random)
	Liu et al. 2014	64 42.06 9.6500	41 42.24 33.630) +	-0.01 [-0.40; 0.38] 10.2% 8.0%
	Wang et al. 2014	30 72.54 28.3300	30 92.53 34.020) <u>+</u>	-0.63 [-1.15; -0.11] 5.8% 7.5%
	Liu et al. 2015	30 40.80 11.7000	28 53.60 14.300		-0.97 [-1.52; -0.42] 5.3% 7.4%
	Sup et al. 2016	29 70.90 23.0000	29 108.40 46.400		-1.01 [-1.50; -0.40] 5.2% 7.4%
	Dang et al. 2017	33 73.26 33.5800	32 98.62 35.730	5 <u>-</u>	-0.72 [-1.23; -0.22] 6.2% 7.6%
	Lou et al. 2017	102 63.79 36.5500	54 145.56 61.430) <u>+</u>	-1.74 [-2.13; -1.36] 10.7% 8.0%
	Pang et al. 2017	43 419.64 126.9800	43 465.62 123.930)	-0.36 [-0.79; 0.06] 8.6% 7.8%
	Shi et al. 2018	59 41.30 7.4000	59 62.90 8.200	<u>-</u> <u>i</u>	-2.75 [-3.25; -2.24] 6.1% 7.5%
	Zhou et al. 2018 Vin et al. 2020	64 131.17 64.2200 49 72 48 19 3000	50 194.03 01.010 49 03.45 23.530	3 茸	-0.99 [-1.37; -0.61] 10.9% 8.0%
	Zhang et al. 2020	48 72.57 19.3800	48 93.16 23.630	j <u></u> ∔	-0.95 [-1.37: -0.52] 8.8% 7.9%
	Huang et al. 2021	40 51.67 24.0200	40 57.11 26.560	j <u>1</u>	-0.21 [-0.65; 0.23] 8.1% 7.8%
	Fixed effect model	630	529	2	-0.90 [-1.03; -0.78] 100.0%
	Heterogeneity: $l^2 = 89\%$	$r^2 = 0.4255 \ p < 0.01$			-0.92 [-1.30; -0.55] 100.0%
	receivgenery. r = 0070,	- 0.4200, p - 0.01		-3 -2 -1 0 1 2	3
		Experimenta	I Contr	ol	Weight Weight
E	3 Study	Total Mean SI) Total Mean S	D Mean Difference	MD 95%-CI (fixed) (random)
	Liu et al. 2014	64 53.32 13.9800	41 50.42 32.940		0.12 [-0.27; 0.52] 10.1% 8.6%
	Wang et al. 2014	30 70.86 32.1900	30 90.03 27.920		-0.63 [-1.15; -0.11] 5.7% 8.0%
	Sup et al. 2015	30 65.90 33.3000	28 77.10 25.500		-0.37 [-0.89; 0.15] 5.7% 8.0% -0.71 [-1.27:-0.16] 5.0% 7.8%
	Dang et al. 2017	33 92.53 28.4200	32 106.32 30.250		-0.46 [-0.96; 0.03] 6.4% 8.1%
	Lou et al. 2017	102 71.44 38.8500	54 188.83 72.390	00	-2.21 [-2.62; -1.80] 9.1% 8.5%
	Pang et al. 2017	43 513.76 314.5300	43 524.41 327.140	0	-0.03 [-0.46; 0.39] 8.7% 8.4%
	Shi et al. 2018	59 76.50 7.9000	59 81.40 8.200		-0.60 [-0.97; -0.24] 11.4% 8.7%
	∠nou et al. 2018 Vin et al. 2020	64 112.03 57.3300	49 96 55 27 47		-0.14 [-0.50; 0.22] 12.0% 8.7% -0.82 [-1.23: -0.41] 9.1% 8.5%
	Zhang et al. 2020	48 76.29 20.4900	48 96.44 27.38		-0.83 [-1.24: -0.41] 8.9% 8.5%
	Huang et al. 2021	40 54.93 18.7800	40 57.44 16.490	0	-0.14 [-0.58; 0.30] 8.0% 8.4%
	Fixed effect model	601	500	*	-0.56 [-0.68; -0.43] 100.0%
	Heterogeneity: $I^2 = 88\%$.	$\tau^2 = 0.3579$, $\rho < 0.01$			-0.57 [-0.55, -0.21] 100.0%
	rictorogeneity. r = 00 /0,	, t = 0.0010, p = 0.01		-2 -1 0 1	2
		Experimental	Control		Weight Weight
C	Study	Total Mean SD	Total Mean SD	Mean Difference	MD 95%-CI (fixed) (random)
		and the second second second		Arr 1	
	Liu et al. 2014	64 64.54 79.7600 30 111 95 41 0300	41 148.44 114.8000	<u>±</u>	-0.88 [-1.29; -0.47] 7.9% 6.5%
	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015	64 64.54 79.7600 30 111.95 41.0300 30 124.60 99.3000	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000	**	-0.88 [-1.29; -0.47] 7.9% 6.5% -0.94 [-1.48; -0.41] 4.6% 6.1% -0.69 [-1.22; -0.16] 4.7% 6.1%
	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016	64 64.54 79.7600 30 111.95 41.0300 30 124.60 99.3000 29 121.60 43.5000	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000		-0.88 [-1.29; -0.47] 7.9% 6.5% -0.94 [-1.48; -0.41] 4.6% 6.1% -0.69 [-1.22; -0.16] 4.7% 6.1% -0.82 [-1.36; -0.28] 4.6% 6.0%
	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016 Sun et al. 2016	64 64.54 79.7600 30 111.95 41.0300 30 124.60 99.3000 29 121.60 43.5000 39 66.46 90.1200 30 92.36 36 8100	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000 20 146.57 169.0000 34 160.43 44 2600		-0.88 [-1.29; -0.47] 7.9% 6.5% -0.94 [-1.48; -0.41] 4.6% 6.1% -0.69 [-1.22; -0.16] 4.7% 6.1% -0.82 [-1.36; -0.28] 4.6% 6.0% -0.65 [-1.20; -0.09] 4.3% 6.0% 4.64 [-2.24] 4.02 4.0% 5.0%
	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016 Sun et al. 2016 Xiao et al. 2016 Liu et al. 2017	64 64.54 79.7600 30 111.95 41.0300 30 124.60 99.3000 29 121.60 43.5000 39 66.46 90.1200 30 92.36 36.8100 45 121.85 30.1000	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000 20 146.57 169.0000 34 160.43 44.2600 45 242.65 30.1500	+	-0.88 [-1.29; -0.47] 7.9% 6.5% -0.94 [-1.48; -0.41] 4.6% 6.1% -0.69 [-1.22; -0.16] 4.7% 6.1% -0.82 [-1.36; -0.28] 4.6% 6.0% -0.65 [-1.20; -0.09] 4.3% 6.0% -1.64 [-2.21; 1.107] 4.0% 5.9% -3.98 [-4.70; -3.25] 2.5% 5.3%
	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016 Sun et al. 2016 Xiao et al. 2016 Liu et al. 2017 Dang et al. 2017	64 64.54 79.7600 30 111.95 41.0300 30 124.60 99.3000 29 121.60 43.5000 39 66.46 90.1200 30 92.36 36.8100 45 121.85 30.1000 33 93.27 68.4300	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000 20 146.57 169.0000 34 160.43 44.2600 45 242.65 30.1500 32 135.46 72.5500	+	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$
	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016 Sun et al. 2016 Liu et al. 2017 Dang et al. 2017 Lou et al. 2017 Deng et al. 2017	64 64.54 79.7600 30 111.95 41.0300 30 124.60 99.3000 29 121.60 43.5000 30 92.36 36.8100 45 121.85 30.1000 33 93.27 68.4300 102 78.31 32.6600	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000 34 160.43 44.2600 45 242.65 30.1500 32 135.46 72.5500 54 135.31 63.7700	+ +	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$
	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016 Sun et al. 2016 Liu et al. 2016 Liu et al. 2017 Dang et al. 2017 Lou et al. 2017 Pang et al. 2018	64 64.54 79.7600 30 111.55 41.0300 30 124.60 99.3000 29 121.60 43.5000 30 92.36 36.8100 45 121.85 30.1000 33 93.27 68.4300 102 78.31 32.6600 43 33.58 4.2500 59 58.20 27.2000	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000 20 146.57 169.0000 34 160.43 44.2600 45 242.65 30.1500 32 135.46 72.5500 54 135.31 63.7700 43 35.14 4.1300 59 100.20 43.60n0 43 35.10 43.6000		$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$
	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016 Sun et al. 2016 Liu et al. 2016 Liu et al. 2017 Dang et al. 2017 Lou et al. 2017 Shi et al. 2018 Zhou et al. 2018	64 64.54 79.7600 30 111.95 41.0300 30 124.60 99.3000 29 121.60 43.5000 30 92.64 90.1200 30 92.63 68.6100 45 121.85 30.1000 33 93.27 68.4300 102 78.31 32.6600 43 33.58 4.2500 59 58.20 27.2000 64 95.29 45.5600	$\begin{array}{ccccccc} 41 & 148.44 & 114.8000\\ 30 & 156.10 & 50.7500\\ 28 & 219.70 & 166.1000\\ 29 & 167.60 & 64.8000\\ 20 & 146.57 & 169.0000\\ 41 & 60.43 & 44.2600\\ 45 & 242.65 & 30.1500\\ 32 & 135.46 & 72.5500\\ 41 & 35.31 & 4.3200\\ 59 & 100.20 & 43.6000\\ 56 & 137.27 & 65.5500 \end{array}$	**************************************	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$
	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016 Xino et al. 2016 Liu et al. 2016 Liu et al. 2017 Dang et al. 2017 Lou et al. 2017 Pang et al. 2017 Shi et al. 2018 Zhou et al. 2018 Yin et al. 2020	64 64.54 79.7600 30 124.60 99.3000 29 121.60 43.5000 30 92.46 49.01200 30 92.36 36.8100 45 121.85 30.1000 33 93.27 68.4300 102 78.31 32.66600 43 33.58 4.2500 59 58.20 27.2000 64 95.29 45.5600 49 90.73 18.5700 36 90.73 18.5700 37 90.73 18.5700 38 90.73 18.5700 39 90.73 18.5700 30 90.75 18.5700 30 90.7500 30 90.7500 30 90.7500 30 90.7500 30 90.7500 30 90.7500 30 90.7	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000 20 146.57 169.0000 34 160.43 44.2600 45 242.65 30.1500 32 135.46 72.5500 43 35.14 4.1300 59 100.20 43.8000 61 37.27 65.5500 49 123.63 24.7600	+ + +	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$
	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016 Xiao et al. 2016 Liu et al. 2016 Liu et al. 2017 Dang et al. 2017 Pang et al. 2017 Shi et al. 2018 Zhou et al. 2018 Yin et al. 2020 Shi et al. 2021 Zhang et al. 2021	64 64.54 79.7600 30 124.60 99.3000 29 121.60 43.5000 39 66.46 90.1200 30 92.36 36.8100 45 121.85 30.1000 33 93.27 68.4300 102 78.31 32.6600 43 33.58 4.2500 59 58.20 27.2000 64 95.29 45.5600 36 69.05 32.3700 36 69.05 32.3700 36 90.70 18.4570	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000 20 146.57 169.004 41 50.43 44.2600 45 242.65 30.1500 41 35.31 63.7700 43 35.14 4.1300 56 137.27 65.5500 99 100.20 43.8000 56 137.27 65.5500 99 133.31 98.3300 98 123.63 24.5600		$\begin{array}{llllllllllllllllllllllllllllllllllll$
	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016 Sun et al. 2016 Liu et al. 2017 Dang et al. 2017 Dang et al. 2017 Pang et al. 2017 Shi et al. 2018 Zhou et al. 2021 Shi et al. 2020 Shi et al. 2021 Zhang et al. 2021 Huang et al. 2021	64 64.54 79.7600 30 121.65 41.0300 30 124.60 99.3000 29 121.60 43.5000 39 66.46 90.1200 30 92.86 36.8100 31 93.27 68.4300 102 78.31 32.6600 43 33.56 4.2500 59 58.20 27.2000 64 95.29 45.5600 49 90.73 18.5700 36 69.05 32.3700 48 90.70 18.4500	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000 20 146.57 169.0000 34 160.43 44.2600 45 242.65 30.1500 32 135.46 72.5500 59 100.20 4.3500 56 137.27 65.5500 49 123.63 24.7600 39 113.31 98.3300 48 122.63 24.5900 40 185.28 401.1200	·····································	$\begin{array}{llllllllllllllllllllllllllllllllllll$
	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016 Sun et al. 2016 Liu et al. 2016 Liu et al. 2017 Dang et al. 2017 Dang et al. 2017 Shi et al. 2018 Yin et al. 2021 Zhang et al. 2021 Huang et al. 2021	64 64.54 79.7600 30 111.55 41.0300 30 124.60 99.3000 29 121.60 43.5000 30 92.86 36.8100 45 121.85 30.1000 33 93.27 68.4300 102 78.31 32.6600 43 33.58 4.2500 59 58.20 27.2000 64 95.29 45.5600 49 90.73 18.5700 36 69.05 32.3700 48 90.70 18.4500 49 155.61 57.1800	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000 20 146.57 169.0000 31 160.43 44.2600 45 242.65 30.1500 32 135.46 72.5500 54 135.31 63.7700 43 35.14 4.300 59 100.20 43.6000 56 137.27 65.5500 49 123.63 24.7600 49 123.63 24.7600 40 185.28 101.1200		$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$
	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016 Sun et al. 2016 Liu et al. 2016 Liu et al. 2017 Lou et al. 2017 Lou et al. 2017 Pang et al. 2017 Shi et al. 2018 Zhou et al. 2018 Yin et al. 2020 Shi et al. 2021 Huang et al. 2021 Huang et al. 2021 Fixed effect model Random effects model	64 64.54 79.7600 30 111.55 41.0300 30 124.60 99.3000 29 121.60 43.5000 30 92.63 63.8100 45 121.85 30.1000 45 121.85 30.1000 43 33.58 4.2500 59 58.20 27.2000 64 95.29 45.5600 49 90.73 18.5700 36 99.05 32.3700 48 90.70 18.4500 40 155.61 57.1800 741	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000 20 146.57 169.0000 45 242.65 30.1500 41 150.41 42.800 45 31.63.1 63.7700 43 35.14 4.1300 56 137.27 65.5500 49 123.63 24.7600 99 113.31 98.3300 48 122.63 24.5900 40 185.28 101.1200 647		$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$
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E	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016 Sun et al. 2016 Liu et al. 2016 Liu et al. 2017 Dang et al. 2017 Dang et al. 2017 Pang et al. 2017 Shi et al. 2018 Zhou et al. 2018 Yin et al. 2020 Shi et al. 2021 Zhang et al. 2021 Fixed effect model Random effects model Heterogeneity: $l^2 = 86\%$, Study Liu et al. 2014	$\begin{array}{ccccccc} 64 & 64.54 & 79.7600 \\ 30 & 111.95 & 41.0300 \\ 30 & 124.60 & 99.3000 \\ 29 & 121.60 & 43.5000 \\ 30 & 92.36 & 36.8100 \\ 30 & 92.36 & 36.8100 \\ 31 & 93.27 & 68.4300 \\ 102 & 78.31 & 32.6600 \\ 43 & 33.27 & 68.4300 \\ 102 & 78.31 & 32.6600 \\ 43 & 33.27 & 68.4300 \\ 102 & 78.31 & 32.6600 \\ 43 & 33.27 & 68.4300 \\ 102 & 78.31 & 32.6600 \\ 43 & 33.58 & 4.2500 \\ 55 & 58.20 & 27.2000 \\ 64 & 95.29 & 45.5600 \\ 49 & 90.70 & 18.4500 \\ 36 & 90.53 & 23.700 \\ 48 & 90.70 & 18.4500 \\ 40 & 155.61 & 57.1800 \\ \hline {\bf 741} \\ {\bf t}^2 = 0.3453, p < 0.01 \\ \hline {\bf Experimental \\ {\bf Total Mean SD} \\ 64 & 41.32 & 5.3100 \\ \hline {\bf 85 & 51.500 \\ \hline {\bf 85 &$	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000 20 146.57 169.0000 41 60.43 44.2600 45 242.65 30.1500 54 135.31 63.7700 43 35.14 4.3000 56 137.27 65.5500 39 113.31 98.3000 48 122.63 24.7600 39 113.31 98.3500 40 185.28 101.1200 647 Control Total Mean SD 41 35.19 4.5600	-4 -2 0 2 Mean Difference	-0.88 [-1.29; -0.47] 7.9% 6.5% -0.94 [-1.48; -0.41] 4.6% 6.1% -0.69 [-1.22; -0.16] 4.7% 6.1% -0.82 [-1.36; -0.28] 4.6% 6.0% -0.65 [-1.20; -0.09] 4.3% 6.0% -1.64 [-2.21; -1.07] 4.0% 5.9% -3.98 [-4.70; -3.25] 2.5% 5.3% -0.59 [-1.09; -0.09] 5.4% 6.2% -1.24 [-1.60; -0.88] 10.3% 6.7% -0.37 [-0.80; 0.06] 7.3% 6.5% -1.75 [-1.54; -0.76] 8.7% 6.6% -0.75 [-1.94; -1.04] 6.6% 6.4% -0.59 [-1.05; -0.13] 6.2% 6.3% -1.46 [-1.91; -1.01] 6.5% 6.4% -0.36 [-0.80; 0.08] 6.8% 6.4% -0.39 [-1.18; -0.76] - 100.0% -1.07 [-1.38; -0.76] - 100.0% 4 Weight Weight MD 95%-CI (fixed) (random) 1.21 [0.78; 1.64] 9.5% 8.5%
E	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016 Sun et al. 2016 Sun et al. 2016 Liu et al. 2017 Lou et al. 2017 Lou et al. 2017 Dang et al. 2017 Dang et al. 2017 Shi et al. 2017 Shi et al. 2018 Yin et al. 2020 Shi et al. 2021 Huang et al. 2021 Fixed effect model Random effects model Heterogeneity: / ² = 86%, Study Liu et al. 2014 Wang et al. 2014	$\begin{array}{ccccccc} 64 & 64.54 & 79.7600\\ 30 & 111.95 & 41.0300\\ 30 & 124.60 & 99.3000\\ 29 & 121.60 & 43.5000\\ 39 & 66.46 & 90.1200\\ 30 & 92.36 & 36.8100\\ 45 & 121.85 & 30.1000\\ 33 & 93.27 & 68.4300\\ 102 & 78.31 & 32.66600\\ 43 & 33.58 & 4.2500\\ 43 & 33.58 & 4.2500\\ 49 & 90.73 & 18.5700\\ 49 & 90.73 & 18.5700\\ 36 & 69.05 & 32.3700\\ 48 & 90.70 & 18.4500\\ 49 & 90.73 & 18.5700\\ 40 & 155.61 & 57.1800\\ 741 & 18.5700\\ 40 & 155.61 & 57.1800\\ 741 & 18.5700\\ 40 & 155.61 & 57.1800\\ 741 & 18.5700\\ 40 & 155.61 & 57.1800\\ 741 & 18.5700\\ 40 & 155.61 & 57.1800\\ 741 & 18.5700\\ 40 & 155.61 & 57.1800\\ 741 & 18.5700\\ 741 $	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000 20 146.57 169.0000 32 135.46 72.5500 54 135.31 63.7700 43 35.14 4.300 46 122.63 24.7600 39 113.31 98.3300 48 122.63 24.7600 30 185.28 101.1200 647 Total Mean SD 41 35.19 4.5600 30 34.86 4.9100 30 30 34.86 4.9100 30 30 30 30 30 30 30 30 30 30 30 30 30 3	-4 -2 0 2 Mean Difference	-0.88 [-1.29; -0.47] 7.9% 6.5% -0.94 [-1.48; -0.41] 4.6% 6.1% -0.69 [-1.22; -0.16] 4.7% 6.1% -0.62 [-1.36; -0.28] 4.6% 6.0% -0.65 [-1.20; -0.09] 4.3% 6.0% -1.64 [-2.21; -1.07] 4.0% 5.9% -3.98 [-4.70; -3.25] 2.5% 5.3% -0.59 [-1.09] -0.09] 5.4% 6.2% -1.24 [-1.60; -0.88] 10.3% 6.7% -0.37 [-0.80; 0.06] 7.3% 6.5% -1.15 [-1.54; -0.76] 8.7% 6.6% -0.75 [-1.12; -0.38] 9.6% 6.7% -1.46 [-1.91; -1.01] 6.5% 6.4% -0.59 [-1.05; -0.13] 6.2% 6.3% -1.46 [-1.91; -1.01] 6.5% 6.4% -0.59 [-1.10; -0.87] 100.0% -1.07 [-1.38; -0.76] - 100.0% -1.07 [-1.38; -0.76] - 100.0% -1.12 [-0.78; 1.64] 9.5% 8.5% 0.81 [0.29; 1.34] 6.2% 8.1% -0.59 [-0.76] -1.04] -0.2%
E	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016 Sun et al. 2016 Liu et al. 2016 Liu et al. 2017 Lou et al. 2017 Dang et al. 2017 Pang et al. 2017 Shi et al. 2017 Shi et al. 2017 Zhou et al. 2017 Shi et al. 2018 Zhou et al. 2018 Zhou et al. 2021 Fixed effect model Random effects model Heterogeneity: $I^2 = 80\%$, Liu et al. 2014 Wang et al. 2014 Wang et al. 2014 Sun et al. 2016 Sun et al. 2016 Sun et al. 2016	$\begin{array}{ccccc} 64 & 64.54 & 79.7600\\ 30 & 111.95 & 41.0300\\ 30 & 124.60 & 99.3000\\ 29 & 121.60 & 43.5000\\ 30 & 92.36 & 36.8100\\ 30 & 92.36 & 36.8100\\ 33 & 93.27 & 68.4300\\ 102 & 78.31 & 32.6600\\ 43 & 33.58 & 4.2500\\ 59 & 58.20 & 27.2000\\ 64 & 95.29 & 45.5600\\ 49 & 90.27 & 84.500\\ 36 & 90.55 & 32.3700\\ 36 & 90.55 & 32.3700\\ 36 & 90.55 & 32.3700\\ 36 & 90.55 & 32.3700\\ 36 & 90.55 & 32.3700\\ 37 & 15.5700\\ 37 & 15.570\\ 741\\ t^2 & = 0.3453, \ \rho & < 0.01\\ \hline \\ \hline$	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000 41 60.43 44.2600 45 242.65 30.1500 54 153.31 63.7700 59 100.20 43.600 59 100.20 43.600 59 133.31 98.3300 40 185.28 101.1200 647 Total Mean SD 41 35.19 4.5600 30 34.86 4.9100 20 38.86 5.6900	Hean Difference	-0.88 [-1.29; -0.47] 7.9% 6.5% -0.94 [-1.48; -0.41] 4.6% 6.1% -0.69 [-1.22; -0.16] 4.7% 6.1% -0.82 [-1.36; -0.28] 4.6% 6.0% -0.65 [-1.20; -0.09] 4.3% 6.0% -1.64 [-2.21; -1.07] 4.0% 5.9% -3.98 [-4.70; -3.25] 2.5% 5.3% -0.59 [-1.09; -0.09] 5.4% 6.2% -1.24 [-1.60; -0.88] 10.3% 6.7% -0.37 [-0.80; 0.06] 7.3% 6.6% -0.75 [-1.12; -0.38] 9.6% 6.7% -0.37 [-0.80; 0.06] 7.3% 6.6% -0.75 [-1.12; -0.38] 9.6% 6.7% -0.36 [-0.80; 0.08] 6.2% 6.3% -1.49 [-1.94; -1.04] 6.6% 6.4% -0.59 [-1.05; -0.13] 6.2% 6.3% -1.46 [-1.91; -1.01] 6.5% 6.4% -0.36 [-0.80; 0.08] 6.8% 6.4% -0.99 [-1.10; -0.87] 100.0% -1.07 [-1.38; -0.76] - 100.0% -1.07 [-1.12; -0.37] 5.5% 8.5% 0.81 [0.29; 1.34] 6.2% 8.1% 1.52 [0.93; 2.11] 5.0% 7.9%
E	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016 Sun et al. 2016 Xiao et al. 2016 Liu et al. 2017 Lou et al. 2017 Lou et al. 2017 Pang et al. 2017 Shi et al. 2017 Shi et al. 2018 Yin et al. 2020 Shi et al. 2021 Fixed effect model Random effects model Heterogeneity: $I^2 = 86\%$, Study Liu et al. 2014 Wang et al. 2014 Wang et al. 2016 Sun et al. 2017	$\begin{array}{c} 64 64.54 79.7600\\ 30 111.95 41.0300\\ 30 124.60 99.3000\\ 29 121.60 43.5000\\ 30 92.46 36.8100\\ 30 92.36 36.8100\\ 31 93.27 68.4300\\ 102 78.31 32.6600\\ 43 33.58 4.2500\\ 59 58.20 27.2000\\ 64 95.29 45.5600\\ 49 95.29 45.5600\\ 49 95.29 45.5600\\ 49 95.29 45.5600\\ 49 95.29 45.5600\\ 49 95.29 45.5600\\ 49 95.29 45.5600\\ 49 95.29 45.5600\\ 49 95.29 45.5600\\ 49 95.29 45.5600\\ 49 95.29 45.5600\\ 40 155.61 57.1800\\ \hline {\bf 741}\\ {\bf 1}\\ {\bf r}\\ {\bf c}^2 = 0.3453, \ p < 0.01\\ \hline {\bf Experimental}\\ {\bf Total \ Mean SD}\\ 64 41.32 5.3100\\ 30 38.45 3.7100\\ 29 37.90 3.8000\\ 39 43.13 5.8000\\ 45 45.56 6.2300\\ \hline {\bf c}\\ {\bf$	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000 20 146.57 169.004 41 50.43 44.2600 43 24.265 30.1500 41 35.31 63.7700 43 35.14 4.1300 59 100.20 43.6000 56 137.27 65.5500 40 123.63 24.7600 39 113.31 98.3300 40 125.28 101.1200 647 Total Mean SD 41 35.19 4.5600 30 34.66 4.9100 29 31.90 4.0000 20 38.65 56600 40 38.26 56600	A -2 0 2 Mean Difference	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
C	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2015 Duan et al. 2016 Xiao et al. 2016 Liu et al. 2017 Lou et al. 2017 Lou et al. 2017 Pang et al. 2017 Shi et al. 2018 Yin et al. 2020 Shi et al. 2021 Fixed effect model Random effects model Heterogeneity: $I^2 = 86\%$, Study Liu et al. 2014 Wang et al. 2014 Wang et al. 2016 Liu et al. 2017 Dang et al. 2017	$\begin{array}{ccccccc} 64 & 64.54 & 79.7600\\ 30 & 111.95 & 41.0300\\ 30 & 124.60 & 99.3000\\ 29 & 121.60 & 43.5000\\ 30 & 92.63 & 56.8100\\ 30 & 92.36 & 56.8100\\ 30 & 92.36 & 56.8100\\ 45 & 121.85 & 30.1000\\ 33 & 93.27 & 68.4300\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 32.6600\\ 102 & 78.31 & 58.000\\ 103 & 38.45 & 3.7100\\ 203 & 7.00 & 38.000\\ 303 & 43.13 & 5.8000\\ 303 & 37.52 & 2.6400\\ 102 & 37.52 & 2.6400\\ 102 & 37.52 & 2.6400\\ 102 & 57.56 & 6.2300\\ 102 & 37.52 & 2.6400\\ 102 & 57.56 & 6.2300\\ 102 & 37.52 & 2.6400\\ 102 & 57.56 & 6.2300\\ 102 & 37.52 & 2.6400\\ 102 & 57.56 & 6.2300\\ 102 & 37.52 & 2.6400\\ 102 & 57.56 & 6.2300\\ 102 & 37.52 & 2.6400\\ 102 & 57.56 & 6.2300\\ 102 & 37.52 & 2.6400\\ 102 & 57.56 & 6.2300\\ 102 & 57.56$	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000 20 146.57 169.0000 41 60.43 44.2600 45 242.65 30.1500 54 135.31 63.7700 43 35.14 4.1300 56 137.27 65.5500 39 113.31 98.3300 48 122.63 24.7600 39 113.31 98.3300 48 122.63 24.7600 39 13.52 101.1200 647 Total Mean SD 41 35.19 4.5600 30 34.86 4.9100 20 38.86 5.68000 20 38.86 5.68000 32 34.18 2.7300 32 44.18 2.7300 32 34.18 2.7300 32 34.18 2.7300 32 34.18 2.7300 32 34.18 2.7300 30 34.86 1000 32 34.18 2.7300 30 34.86 1000 30 34.80 10000 30 34.80 10000 30 34.80 10000 30 34.80 10000 30 34.80 100000 30 34.80 1000000 30 34.80 1000000 30 34	A -2 0 2 Mean Difference	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
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E	Liu et al. 2014 Wang et al. 2014 Liu et al. 2015 Duan et al. 2016 Sun et al. 2016 Liu et al. 2016 Liu et al. 2017 Dang et al. 2017 Lou et al. 2017 Pang et al. 2017 Shi et al. 2018 Yin et al. 2020 Shi et al. 2021 Fixed effect model Random effects model Name et al. 2014 Wang et al. 2014 Wang et al. 2014 Usu et al. 2014 Usu et al. 2014 Usu et al. 2017 Lou et al. 2017 Liu et al. 2017 Liu et al. 2017 Liu et al. 2017 Usu et al. 2017 Liu et al. 2017 Liu et al. 2017 Liu et al. 2017 Lou et al. 2017 Zhang et al. 2017 Linu et al. 2017 Linu et al. 2020 Shi et al. 2021 Fixed effect model Random effects model Random effects model Random effects model	64 64.54 79.7600 30 111.95 41.0300 30 124.60 99.3000 29 121.60 43.5000 30 92.66 36.8100 30 92.26 36.8100 31 93.27 68.4300 102 78.31 32.6600 43 33.58 4.2500 59 58.20 27.2000 64 95.29 45.5600 49 90.73 18.5700 36 69.05 32.3700 36 69.05 32.3700 36 90.05 32.3700 37 01 84.500 741 $t^2 = 0.3453, p < 0.01$ Experimental Total Mean SD 64 41.32 5.3100 30 33.45 3.7100 29 37.90 3.8000 39 43.13 5.8000 49 45.55 6.2300 33 37.52 2.6400 33 37.52 2.6400 34 33.75 2.9100 64 43.57 4.5700 49 38.26 5.5300 36 37.30 10.8000 48 38.75 5.5900 579 tel 6, $t^2 = 0.4687, p < 0.01$	41 148.44 114.8000 30 156.10 50.7500 28 219.70 166.1000 29 167.60 64.8000 20 146.57 169.000 34 160.43 44.2600 45 242.65 30.1500 54 135.31 63.7700 59 100.20 43.6001 99 123.63 24.7600 39 113.31 98.3300 40 125.28 101.1200 647 Cotal Mean SD 41 35.19 4.5600 30 34.86 4.9100 29 31.90 4.0000 20 38.86 5.6900 45 32.78 6.1000 20 38.86 5.6900 45 32.78 6.1000 20 38.86 5.6900 45 32.78 6.1000 54 32.94 5.7900 54 32.94 5.7900 56 33.45 4.7400 99 33.80 4.7000 39 35.28 9.3200 40 34.72 6.2200 483	Mean Difference	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

multitarget pharmacological effects on the complex pathogenesis of ACLF. For example, paeoniflorin is a main component isolated from *Paeonia lactiflora* Pall. that alleviates inflammatory response, regulates oxidative stress, and protects liver function (Zhang et al., 2015; Chen et al., 2021). Additionally, cryptotanshinone is a major active ingredient of *Salvia miltiorrhiza* Bunge (Lamiaceae) that downregulates inflammatory factors, such as interleukin (IL)-1 β , IL-6, and

Study	Total	Experi Mean	mental SD	Total	Mean	Control SD		Mear	Diffe	rence		MD	95%-CI	Weight (fixed)	Weight (random)
Yin et al. 2020	49	6.54	1.9600	49	10.28	2.5000			1			-1.65	[-2.11: -1.19]	51.3%	51.3%
Zhang et al. 2021	48	6.52	1.6100	48	10.31	2.5900	-	_				-1.74	[-2.22; -1.27]	48.7%	48.7%
Fixed effect model	97			97								-1.70	[-2.03; -1.37] [-2.03: -1.37]	100.0%	
Heterogeneity: $l^2 = 0\% \tau^2$	= 0 0	= 0.79						1		1		-1.70	[-2.00, -1.07]		100.070
	ο, ρ	0.70					-2	-1	0	1	2				
FIGURE 7 Forest plot for the meta	-analy:	sis of T	CM syn	drome	score.	TCM: T	raditio	nal Chi	nese r	nedicine					

 TABLE 3 | High-frequency Chinese medicines.

Chinese name	English name	Parts of herbs	Counts	Frequency (%)	Picture
Yinchen	Artemisia capillaris Thunb. [Asteraceae]	Dried aerial part	17	10.2	at the
Chishao	Paeonia lactiflora Pall. [Ranunculaceae]	Dried root	14	8.4	
Baihuasheshecao	Hedyotis diffusa Willd. [Rubiaceae]	Whole grass	12	7.2	
Danshen	Salvia miltiorrhiza Bunge [Lamiaceae]	Dried root	12	7.2	
Zhizi	Gardenia jasminoides Ellis [Rubiaceae]	Fruit	12	7.2	
Yujin	Curcuma aromatica Salisb. [Zingiberaceae]	Dried root	11	6.6	(Call
Baizhu	Atractylodes macrocephala Koidz. [Asteraceae]	Dried rhizome	9	5.4	A CONTRACT

(Continued on following page)

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TABLE 3 | (Continued) High-frequency Chinese medicines.

Chinese name	English name	Parts of herbs	Counts	Frequency (%)	Picture
Huangqin	Scutellaria baicalensis Georgi [Lamiaceae]	Dried root	8	4.8	
Shengdi	Rehmannia glutinosa Libosch. [Scrophulariaceae]	Dried root	7	4.2	
Dahuang	Rheum palmatum L. [Polygonaceae]	Dried root	6	3.6	300 pt



tumor necrosis factor (TNF)-α (Liu et al., 2021). The Qingchangligan formula significantly enhanced liver failure therapy through regulating hepatitis, promoting autophagy, and limiting hepatocyte apoptosis (Zhang et al., 2017). Moreover, the Jidu Liangxue prescription exerted a protective effect against liver failure in mice, *via* a mechanism potentially related to inhibiting the mitochondrial apoptosis signaling pathway (Liu et al., 2022). Network pharmacology and basic research have demonstrated that the Jieduan-Niwan formula downregulates the expression of inflammatory factors, protects against oxidative stress, and inhibits the E2F1-mediated apoptosis signaling pathway to treat ACLF (Liang et al., 2020; Hou et al., 2021).

Our meta-analysis suggested that LXJD therapy causes relatively few adverse events. However, because most included trials did not mention adverse events, we should be cautious in our conclusions regarding the safety of LXJD therapy. None of the studies statistically analyzed differences in adverse events between combined-treatment and control groups. Notably, two studies described adverse side-effects, but they were mild and could be alleviated through symptomatic treatment. No serious adverse events were reported.

This meta-analysis had several limitations. First, although random assignment was mentioned in all of the included studies, only half described a specific randomization method, such as a random number table. Therefore, the findings should be further assessed using high-quality RCTs because study quality may have influenced the chosen indicators (Kjaergard et al., 2001). Second, although LXJD therapy was always used in the combined-treatment group, heterogeneity may nevertheless have been present because herbs and administration courses differed between studies. Third, sample size was relatively small among included studies, with only six involving over 100 patients. These RCTs had different experimental periods ranging from 4 to 12 weeks. Few studies focused on long-term follow-up, and only two followed up at 48 weeks. Fourth, since adverse events were not described in most studies, further evaluation is required to verify the safety of LXJD therapy for ACLF. Finally, all included studies were conducted in China, potentially limiting application to populations in foreign countries.

5 CONCLUSIONS

Our findings suggest that LXJD therapy combined with WM was more effective than WM alone in treating ACLF, based on improvements to total effective rate, mortality rate, complications, coagulation and liver function, as well as TCM syndrome score. This study provides reliable evidence for clinical practice, showing that LXJD therapy is a promising complementary or alternative treatment for ACLF. However, multicenter, large-sample RCTs with long follow-up periods are needed to better assess the effectiveness and safety of LXJD therapy for ACLF.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/**Supplementary Material**, further inquiries can be directed to the corresponding author.

AUTHOR CONTRIBUTIONS

XW and KS designed the study. KS, QZ, and JH contributed to the data collection and data analysis. Results were interpreted by YZ, YB, and KS drafted the original manuscript. All authors contributed to the article and approved the submitted version.

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SUPPLEMENTARY MATERIAL

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