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Research Article

Systematic Review and Meta-Analysis of Randomized Controlled Trials of Fuke Qianjin Tablet

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Purpose. The aim of the research was to evaluate the efficacy and safety associated with Fuke Qianjin tablet combined with conventional therapy in the treatment of pelvic inflammatory diseases and associated complications (endometritis) using a metaanalysis approach. Patients and Methods. We searched 8 electronic databases up to December 31, 2019, including PubMed, the Cochrane Library, Embase, Web of Science, CNKI, WanFang, VIP, and SinoMed. Eligible studies were clinical trials of Fuke Qianjin tablet combined with conventional therapy used in the treatment of acute pelvic inflammatory disease, chronic pelvic inflammatory disease, and endometritis. The meta-analysis was performed using STATA15 software. Results. A total of 125 RCTs (n = 14,494) were shortlisted for the meta-analysis, which included 23 trials for acute pelvic inflammatory disease, 69 trials for chronic pelvic inflammatory disease, and 33 trials for endometritis. The overall analysis illustrated Fuke Qianjin tablet combined with conventional therapy was significantly more efficacious than conventional therapy alone across all types of antibiotics treatment for acute pelvic inflammatory disease (OR = 5.57, 95% CI 4.09-7.58, Z = 10.90, p = 0.001), chronic pelvic inflammatory disease (OR = 4.70, 95% CI 4.07 – 5.42, Z = 21.21, p = 0.001) and endometritis (OR = 5.09, 95% CI 4.03 – 6.43; Z = 13.63, p = 0.001) in both primary endpoints and secondary endpoints. There is also a trend that Fuke Qianjin tablet combined with conventional therapy has lower adverse reaction rates than conventional therapy alone. Conclusion. Fuke Qianjin tablet combined with conventional therapy showed better clinical efficacy in the treatment of acute pelvic inflammatory disease, chronic pelvic inflammatory disease, and endometritis. There were no obvious drug-related adverse reactions. Fuke Qianjin tablet presented advantages in shortening the remission time of clinical symptoms, reducing the concentration of serum inflammatory factors, improving endometrial thickness, menstruation, and reducing relapse rate.

1. Introduction

Pelvic inflammatory disease (PID), one of the most common infections in women of reproductive age, could lead to endometritis, oophoritis, salpingitis, tuboovarian abscess, peritonitis, and other complications [1–4]. Studies have shown that about 25% of PID patients will have long-term sequelae, including annexitis, irregular menstruation, infertility, ectopic pregnancy, or chronic pelvic pain [5]. Moreover, compared with those without PID, patients with PID had a 1.864 times higher risk of developing preterm labor and a 2.121 times higher risk of developing ectopic pregnancy [6]. Women with PID also have a 6%–8% risk of

infertility [5]. Endometritis or complications of PID will further reduce endometrial receptivity and increase the risk of infertility. The prevalence of chronic endometritis in the general population is about 19% [7], and the prevalence of chronic endometritis in infertile patients is about 45% [8]. Studies have shown that effective treatment of endometritis can improve patient reproductive health [9]. A research reported on PID health economics showed that young women are willing to spend 1-2 years of life to prevent PID and its related sequelae [10]. PID has severely affected female reproductive health and has also caused a heavy economic burden. In the United States, the medical cost in treating a PID case is about US\$3,200 [11], and the annual PID-related

treatment cost on the US healthcare system adds to US\$4.2 billion [12]. The current treatment methods for PID are mainly antibiotic treatment and surgical treatment. According to the guidelines [13] issued by CDC in 2015, PID treatment programs must provide empirical and broadspectrum coverage of possible pathogens. However, longterm, repeated use of antibiotics may lead to increasing antibiotic resistance of related pathogens [14]. According to the 2018 World Health Organization (WHO) report, pathogens showed high rates of quinolone resistance, increasing azithromycin resistance, and emerging resistance to extended-spectrum cephalosporins [15]. On the other end, surgical treatment is only carried out when drug treatment is ineffective or emergency symptoms appear. Surgery presents risk of intrauterine iatrogenic damage, and so, surgical treatment measures should be carefully considered specific to the conditions of patients [16].

Fuke Qianjin tablet is a pure Chinese medicine preparation approved by the National Medical Products Administration. It is widely used clinically to treat acute pelvic inflammatory disease, chronic pelvic inflammatory disease, and endometritis. In recent years, many researchers have performed evaluation of the clinical application of Fuke Qianjin tablets [17], but further evaluation is deemed necessary. Therefore, this study aims to comprehensively evaluate the efficacy and safety of Fuke Qianjin tablets and provide a basis for its application as a treatment for pelvic inflammatory disease.

2. Materials and Methods

2.1. Literature Search. This study evaluated the clinical effectiveness and safety of Fuke Qianjin tablets in the treatment of acute pelvic inflammatory disease, chronic pelvic inflammatory disease, and endometritis. Synonyms of Fuke Qianjin tablets such as "Fuke Qianjin tablet," "Qianjin tablet," "Qianjin" were used to search English databases. Chinese database search strategies and results are shown in Table 1. Additional, a manual search on chictr.org.cn (clinical trial database in China) was also done to identify potential unpublished studies.

2.2. Inclusion and Exclusion Criteria. Eligible studies should have met the following criteria: (1) randomized controlled trials (RCTs) of Fuke Qianjin tablets published in China or internationally; (2) patients diagnosed with acute pelvic inflammatory disease, chronic pelvic inflammatory disease, or endometritis; (3) the intervention measures of the experimental group are Fuke Qianjin tablets alone or combined with conventional treatment; and (4) the study reported one or more of the following outcome indicators: the main outcome indicators such as total effective rate and incidence of adverse reactions, and secondary outcome indicators such as clinical symptom relief time, endometrial thickness, serum inflammatory factor concentration, menstrual recovery, and relapse rate.

Exclusion criteria were (1) nonpharmacological treatment-related studies, such as acupuncture, physical therapy,

and hot compresses; (2) studies with repeated publications; (3) studies with completely missing data; and (4) studies with unclear interventions, unclear description of efficacy evaluation criteria, or statistical errors.

2.3. Quality Assessment. Two authors independently evaluated the risk of bias of the included literature using the Cochrane Handbook which consists of seven domains [18]: random sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessments, incomplete outcome data, selective reporting, and other bias. For each domain, the risk of bias for each study was assessed according to three categories: low risk, high risk, or unclear risk. Disagreements encountered during the process were settled by a third author through discussion.

2.4. Data Extraction. Two independent reviewers extracted the following data from the included studies using a standardized data extraction form. Data are connected with study characteristics (first author's name, the sample size of each group, and publication year), patient characteristics (age and course of the disease), treatment measures, outcome measures, and literature quality evaluation information. Any disagreement between the two reviewers was subject to a discussion or further inquiry from the third researcher.

2.5. Statistical Analysis. All analyses were performed using STATA version 15.0. For dichotomous data, we calculated odds ratio (OR) with 95% CI; for continuous outcome data, we calculated the standard mean difference (SMD) with 95% CI. In this case, the Cochrane Q statistic and I^2 statistics were conducted to test the heterogeneity across the included studies [19–22], in which p value <0.1 or I^2 >50% was deemed to represent substantial heterogeneity; then, the data were pooled using a random-effect model. On the contrary, the fixed-effect model is adopted. Publication bias was assessed by directly observing the symmetry of the inverted funnel chart, using the Harbord test and Egger's test [23-25]. In the case of significant publication bias, the trim and fill method [26] was used to correct the effect to verify the robustness of the metaanalysis results.

3. Results

3.1. Retrieval Results and Quality Assessment. All the retrieved literature (n = 1,434) were imported into the Note-Express V3.2.0 version (NoteExpress, Beijing Aegean Sea Lezhi Technology Co., Ltd.). A 95% accuracy algorithm was set to assess duplicates, and then, additional duplicate checks were performed manually. After screening with inclusion and exclusion criteria, a total of 125 separate studies were included for the final analysis (Figure 1), including 23 for acute pelvic inflammatory disease [27–49], 69 for chronic

Database Search strategy Outcome (SU=('Pelvic inflammatory disease'+'Chronic pelvic inflammatory disease'+' Pelvic inflammatory sequelae **CNKI** 252 '+")*('Fuke Qianjin Tablet ')) NOT TI=('rat') ((subject:("Pelvic inflammatory disease"+"Chronic pelvic inflammatory disease"+"Pelvic inflammatory WanFang sequelae"+"acute pelvic inflammatory disease")* ("Fuke Qianjin Tablet")) not subject : ("rat"+"rabbit"+"Meta"))* 387 Date:-2019 (M=("Pelvic inflammatory disease"+"Chronic pelvic inflammatory disease"+"Pelvic inflammatory VIP 214 sequelae"+"acute pelvic inflammatory disease") AND (acute pelvic inflammatory disease "Fuke Qianjin Tablet") ("Fuke Qianjin Tablet" Djangoorm: Intelligence AND("Pelvic inflammatory disease" Djangoorm: Intelligence OR "Chronic pelvic inflammatory disease" Djangoorm: Intelligence OR "Pelvic inflammatory sequelae" Djangoorm: SinoMed 278 Intelligence OR "acute pelvic inflammatory disease" Djangoorm: Intelligence)) NOT ("rat" Djangoorm: Intelligence) (SU=('endometritis'+'chronic endometritis'+'Acute endometritis'+'puerperal endometritis'+'puerperium **CNKI** 78 endometritis')*(' Fuke Qianjin Tablet ')) NOT TI=('rat') ((subject: ("endometritis"+"chronic endometritis"+"Acute endometritis"+"puerperal endometritis"+"puerperium WanFang 87 endometritis")* ("Fuke Qianjin Tablet")) not subject : ("rat"+"rabbit"+"Meta"))*Date:-2019 (M=("endometritis"+"chronic endometritis"+"Acute endometritis") AND ("Fuke Qianjin Tablet") VIP 74 ("Fuke Qianjin Tablet" Djangoorm: Intelligence AND ("endometritis" Djangoorm: Intelligence OR "chronic endometritis" Djangoorm: Intelligence OR "Acute endometritis" Djangoorm: Intelligence OR "puerperal SinoMed 54 endometritis" Djangoorm: Intelligence OR "puerperium endometritis" Djangoorm: Intelligence)) NOT("rat" Djangoorm: Intelligence OR "meta" Djangoorm: Intelligence)

TABLE 1: Chinese database retrieval strategy and results.

pelvic inflammatory disease [50–118], and 33 for endometritis [119–151]. The full list of studies is illustrated in Tables 1–3.

3.2. Meta-Analysis of Fuke Qianjin Tablet in the Treatment of Acute Pelvic Inflammatory

3.2.1. The Main Outcome

- (1) Total of Effective Rate. There were 23 articles [27–49] about Fuke Qianjin tablets combined with antibiotics in the treatment of acute pelvic inflammatory disease. The results showed that Fuke Qianjin tablets combined with antibiotics led to significantly better clinical efficacy compared to antibiotics alone (OR = 5.57, 95% CI 4.09–7.58, Z = 10.90, p = 0.001). The results of the subgroup analysis showed that the efficacy of FKQJP combined with antibiotics was not affected by antibiotic types (Table 4 and Figure 2).
- (2) Adverse Reaction. A total of 15 studies reported outcome of adverse reactions, in which 10 studies reported the specific data of 90 cases of adverse reactions. The difference of the incidence of the adverse reaction between the two groups was not statistically significant (OR = 0.71, 95% CI 0.45–1.10, Z = 1.55, p = 0.121). 5 studies reported no adverse events or mild adverse reactions which improved spontaneously (Table 4 and Figure 3).
- 3.2.2. Secondary Outcomes. Comparisons in secondary outcomes were also made. Similar to the primary outcome, Fuke Qianjin tablets combined with antibiotics had better efficacy profiles in shortening the remission time of clinical symptoms and reducing serum inflammatory factor concentrations when compared with antibiotics alone, as shown in Table 5.

3.2.3. Publication Bias. The publication bias test was performed on the total effective rate and incidence of adverse reactions, and the inverted funnel diagram (Figures 4(a) and 4(b)) was drawn, respectively. The results of the Harbord test showed that there were significant publication bias and small sample effect in the outcome of the total effective rate $(t=5.95,\ p=0.001)$, and there were not significant publication bias and small sample effect in the outcome of the incidence of adverse reactions $(t=-0.57,\ p=0.583)$.

The sensitivity analysis was carried out by using the trim and filled method. The point estimated value and 95% confidence interval of the summary effect OR before and after the implementation of the trim and fill method was 5.57 [4.09, 7.58] and 4.25 [3.18, 5.68], respectively. The differences between two of groups were still statistically significant (Z = 9.765, p = 0.001). The iterative results show that 10 additional studies are needed to further enhance the stability of the research results.

3.3. Meta-Analysis of Fuke Qianjin Tablet in the Treatment of Chronic Pelvic Inflammatory

3.3.1. The Main Outcome

- (1) Total of Effective Rate. There were 69 articles about Fuke Qianjin tablets combined with antibiotics in the treatment of chronic pelvic inflammatory disease [50–118]. The results showed that Fuke Qianjin tablets combined with antibiotics had better clinical efficacy (OR = 4.70, 95% CI 4.07–5.42, Z = 21.21, p = 0.001) than antibiotics alone. The results of the subgroup analysis showed that the efficacy of Fuke Qianjin tablets combined with antibiotics was not affected by antibiotic types (Table 4 and Figure 5).
- (2) Adverse Reaction. A total of 30 studies reported adverse reactions to the treatment of chronic pelvic inflammation. Among them, 26 studies reported specific data. The fixed-

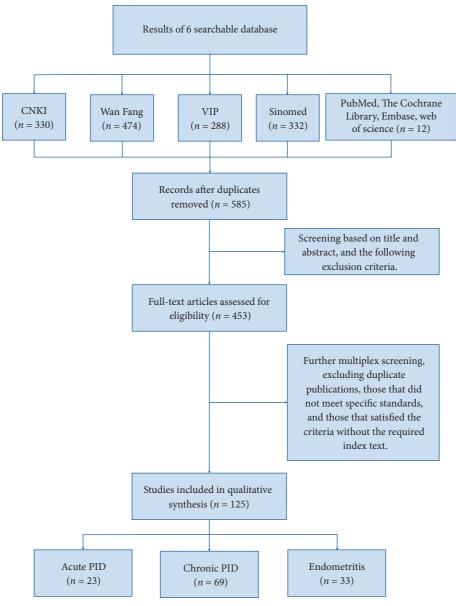


FIGURE 1: Study selection steps.

effects model analysis showed that compared with the control group, the incidence of adverse reactions in the combined group of Fuke Qianjin tablets was lower (OR = 0.60, 95% CI 0.46–0.80, Z = 3.55, p = 0.001). (Table 4 and Figure 6).

- 3.3.2. Secondary Outcomes. Comparisons in secondary outcomes were also made. Similar to the primary outcome, Fuke Qianjin tablets combined with antibiotics had better efficacy profiles in shortening the remission time of clinical symptoms and reducing serum inflammatory factor concentrations when compared with antibiotics alone, as shown in Table 5.
- 3.3.3. Publication Bias. Perform the publication bias test on total effective rate and the incidence of adverse reactions,

and the inverted funnel diagram (Figures 7(a) and 7(b)) was drawn, respectively. The inverted funnel plots of the 2 outcomes were substantially symmetric. The results of the Harbord test showed that there were no significant publication bias and small sample effect in the total effective rate (t = 0.11, p = 0.912) and adverse reaction rate (t = 0.96, p = 0.349).

- 3.4. Meta-Analysis of Fuke Qianjin Tablet in the Treatment of Endometritis
- 3.4.1. The Main Outcome
- (1) Total of Effective Rate. There were 33 studies about Fuke Qianjin tablets combined with conventional treatment of endometritis, and 30 studies reported the total effective

TABLE 2: Characteristics of the studies included in this meta-analysis.

Author	Na/Nb	Course	Experimental	Control	Outcome
Acute pelvic inflamm			1		-
CCJ (2018) [27]	35/35	15	FKQJP + C	Penicillin	13
YML (2013) [28]	24/23	12	FKQJP + C	Penicillin	1
ZJ (2017) [29]	48/48	15	FKQJP + C	Penicillin	13
DY (2014) [30]	68/68	10~15	FKQJP + C	Penicillin	1234
SL (2015) [31]	50/50	10	FKQJP + C	Penicillin	124
TSQ (2019) [32]	50/50	10	FKQJP + C	Penicillin	1
XQX (2014) [33]	39/39	15	FKQJP + C	Penicillin + metronidazole	123
YFY (2013) [34]	67/68	10~15	FKQJP + C	Penicillin + metronidazole	13
RS (2012) [35]	36/36	10	FKQJP + C	Penicillin + metronidazole	12
SFM (2015) [36]	66/66	10	FKQJP + C	Penicillin + metronidazole	12
ZY (2013) [37]	43/43	10	FKQJP + C	Penicillin + metronidazole	14
FXH (2018) [38]	39/39	14	FKQJP + C	Penicillin + metronidazole	1234
	110/	1.5			
SYQ (2015) [39]	110	15	FKQJP + C	Penicillin + metronidazole	13
ZHY (2012) [40]	60/60	10	FKQJP + C	Roxithromycin	12
ZYZ (2012) [41]	30/30	12	FKQJP + C	Roxithromycin	12
YCQ (2017) [42]	60/60	7~14	FKQJP + C	Moxifloxacin	12
LWR (2013) [43]	43/43	10	FKQJP + C	Levofloxacin hydrochloride	134
WGJ (2011) [44]	50/50	14	FKQJP + C	Ceftriaxone + tinidazole	12
HRM (2013) [45]	60/60	7~15	FKQJP + C	Ceftriaxone + tinidazole	12
GSY (2012) [46]	30/30	10	FKQJP + C	Levofloxacin lactate + metronidazole	12
ZYH (2016) [47]	40/40	7~14	FKQJP + C	Gatifloxacin + metronidazole	12
ZNN (2012) [48]	30/30	12	FKQJP + C	Metronidazole	12
LJ (2014) [49]	36/36	14	FKQJP + C	Metronidazole	14
Chronic pelvic inflam	ımatorv				
LJX2 (2014) [50]	40/40	42	FKQJP	β -Lactam + nitroimidazole	1
XZJ (2007) [51]	102/	45/21	FKQJP	β-Lactam + nitroimidazole	1
CXC (2019) [52]	102 64/64	21	FKQJP + C	β -Lactam	14
DJL (2014) [53]	62/62	21	FKQJP + C	β-Lactam β-Lactam	10
PGZ (2016) [54]	40/40	14	FKQJP + C	β-Lactam β -Lactam	123
SXL (2015) [55]	32/32	21	FKQJP + C	β-Lactam	13
WQF (2013) [56]	35/35	20	FKQJP + C	β-Lactam	1
ZXJ (2015) [57]	30/30	14	FKQJP + C	β-Lactam	12
ZMY (2017) [58]	50/50	14	FKQJP + C	β -Lactam	12
LJX1 (2014) [50]	40/40	42	FKQJP + C	β -Lactam + nitroimidazole	1
LXX (2019) [59]	43/43	15	FKQJP + C	β -Lactam + nitroimidazole	①
LH (2019) [60]	52/52	14	FKQJP + C	β -Lactam + nitroimidazole	12
PJQ (2019) [61]	75/75	15	FKQJP + C	β -Lactam + nitroimidazole β -Lactam + nitroimidazole	1
SWA (2014) [62]	36/36	28	FKQJP + C	β -Lactam + nitroimidazole	①
SQB2 (2012) [63]	50/50	28	FKQJP + C	β -Lactam + nitroimidazole	12
ZY (2014) [64]	54/54	28	FKQJP + C	β -Lactam + nitroimidazole	12
			FKQJP+β-	•	
SQB1 (2012) [63]	50/50	28	lactam + nitroimidazole	FKQJP	12
ODE (2217) [:-]	/		FKQJP+ β -	TWO YES	~ ~
SPF (2015) [65]	75/75	14	lactam + nitroimidazole	FKQJP	12
CF (2018) [66]	60/60	42	FKQJP + C	Macrolide	12
DLL (2017) [67]	81/81	42	FKQJP + C	Macrolide	12
FJY (2010) [68]	63/63	15	FKQJP + C	Macrolide	12
FP (2013) [69]	62/62	14	FKQJP + C	Macrolide	1
KY (2018) [70]	100/86	14	FKQJP + C	Macrolide	13
LMY (2016) [71]	50/50	14	FKQJP + C	Macrolide	1
LYK (2016) [72]	30/30	15	FKQJP + C	Macrolide	12
LongH (2011) [73]	90/90	28	FKQJP + C	Macrolide	1
RDQ (2019) [74]	40/40	21	FKQJP + C	Macrolide	1
ShaoXL (2012) [75]	87/86	15	FKQJP + C	Macrolide	1
TXG (2015) [76]	90/90	15	FKQJP + C	Macrolide	12
WJP (2013) [77]	52/48	51	FKQJP + C	Macrolide	1
YM (2017) [78]	50/50	51	FKQJP + C	Macrolide	1
YQ (2014) [79]	67/67	15	FKQJP + C	Macrolide	12
ZYL (2017) [80]	40/40	20	FKQJP + C	Macrolide	12

Table 2: Continued.

Author	Na/Nb	Course	Experimental	Control	Outcome
DLH (2019) [81]	45/45	30	FKQJP + C	Quinolone	1
HJY (2019) [82]	31/31	30	FKQJP + C	Quinolone	14
LJ (2019) [83]	22/22	14	FKQJP + C	Quinolone	12
SJL (2016) [84]	53/53	30	FKQJP + C	Quinolone	1
WJ (2018) [85]	40/40	14	FKQJP + C	Quinolone	1
ZL (2015) [86]	40/40	21	FKQJP + C	Quinolone	1
ZT (2018) [87]	160/ 160	21	FKQJP + C	Quinolone	14
ZhaoJ (2017) [88]	55/55	28	FKQJP + C	Quinolone	14
ZengJ (2016) [89]	40/40	14	FKQJP + C	Quinolone + nitroimidazole	12
CXF (2018) [90]	58/58	42	FKQJP + C	Quinolone + nitroimidazole	03
DCM (2016) [91]	47/47	28	FKQJP + C	Quinolone + nitroimidazole	03
DQY (2015) [92]	25/25	28	FKQJP + C	Quinolone + nitroimidazole	02
HSX (2019) [93]	65/65	42	FKQJP + C	Quinolone + nitroimidazole	02
HHJ (2019) [94]	60/60	28	FKQJP + C	Quinolone + nitroimidazole	①
HHM (2019) [95]	63/63	28	FKQJP + C	Quinolone + nitroimidazole	1234
HYL (2015) [96]	60/60	32	FKQJP + C	Quinolone + nitroimidazole	02
LML (2019) [97]	29/29	14	FKQJP + C	Quinolone + nitroimidazole	03
LHR (2013) [98]	45/41	28	FKQJP + C	Quinolone + nitroimidazole	123
LXL (2018) [99]	41/41 587/	14	FKQJP + C	Quinolone + nitroimidazole	14
LSY (2018) [100]	588	28	FKQJP + C	Quinolone + nitroimidazole	134
LYZ (2012) [101]	35/35	28	FKQJP + C	Quinolone + nitroimidazole	13
MYQ (2019) [102]	30/30	28	FKQJP + C	Quinolone + nitroimidazole	1
RC (2016) [103]	60/60	14	FKQJP + C	Quinolone + nitroimidazole	1
RL (2017) [104]	43/43	28	FKQJP + C	Quinolone + nitroimidazole	12
SNY·HSY (2016) [105]	40/40	20	FKQJP + C	Quinolone + nitroimidazole	12
SQJ (2012) [106]	30/30	14	FKQJP + C	Quinolone + nitroimidazole	12
YLH (2012) [107]	42/42	28	FKQJP + C	Quinolone + nitroimidazole	134
WDD (2017) [108]	35/35	28	FKQJP + C	Quinolone + nitroimidazole	1
WHL (2011) [109]	90/90	28	FKQJP + C	Quinolone + nitroimidazole	13
WLY (2019) [110]	50/50	30	FKQJP + C	Quinolone + nitroimidazole	12
WSY (2011) [111]	50/50	90	FKQJP + C	Quinolone + nitroimidazole	1
WY (2018) [112]	36/36	28~42	FKQJP + C	Quinolone + nitroimidazole	1
WDM (2019) [113]	48/48	28	FKQJP + C	Quinolone + nitroimidazole	12
XW (2015) [114]	65/63	28	FKQJP + C	Quinolone + nitroimidazole	03
XRQ (2018) [115]	37/37	28	FKQJP + C	Quinolone + nitroimidazole	03
YDM (2015) [116]	30/30	28	FKQJP + C	Quinolone + nitroimidazole	10
YXH (2016) [117]	53/53	42	FKQJP + C	Quinolone + nitroimidazole	02
ZhangJ (2017) [118]	35/35	14	FKQJP + C	Quinolone + nitroimidazole	12
Endometritis					
SFF (2017) [119]	44/44	45	FKQJP + C	Cefoxitin + doxycycline	4
SCP (2019) [120]	46/46 174/	45	FKQJP + C	Cefoxitin + doxycycline	1
DYY (2019) [121]	174	45	FKQJP + C	Cefoxitin + doxycycline	134
LY (2019) [122]	34/33	45	FKQJP + C	Cefoxitin + doxycycline	34
HHF (2017) [123]	60/60	21	FKQJP + C	Levofloxacin	1234
WJF (2019) [124]	60/60	21	FKQJP + C	Levofloxacin	034
MTX (2016) [125]	40/40	14/42	FKQJP + metronidazole	Metronidazole + medroxyprogesterone	035
SXW (2018) [126]	45/45	42	FKQJP + metronidazole	Metronidazole + medroxyprogesterone	124
ZHH (2018) [127]	52/52	42	FKQJP + metronidazole	Metronidazole + medroxyprogesterone	035
ZL (2019) [128]	34/34	30	FKQJP + metronidazole	Metronidazole + medroxyprogesterone	134
DCL (2017) [129]	20/20	42	FKQJP + metronidazole	Metronidazole + medroxyprogesterone	①
DFY (2017) [130]	80/80	42	FKQJP + metronidazole	Metronidazole + medroxyprogesterone	035
GY (2015) [131]	78/78	14/42	FKQJP + metronidazole	Metronidazole + medroxyprogesterone	14
LWP (2019) [132]	39/39	30	FKQJP + metronidazole	Metronidazole + medroxyprogesterone	1
MYJ (2018) [133]	42/42	42	FKQJP + metronidazole	Metronidazole + medroxyprogesterone	①
DFL (2017) [134]	41/41	42	FKQJP + metronidazole	Metronidazole + medroxyprogesterone	034
HXY (2018) [135]	50/50	14/42	FKQJP + metronidazole	Metronidazole + medroxyprogesterone	0.0
ZQ (2019) [136]	40/40	42	FKQJP + metronidazole	Metronidazole + norethisterone	034
LXZ (2017) [137]	64/64	14	FKQJP + C	Metronidazole + medroxyprogesterone	123

Table 2: Continued.

Author	Na/Nb	Course	Experimental	Control	Outcome
CXH (2017) [138]	30/30	60	FKQJP + C	Metronidazole + medroxyprogesterone	1
FCF (2016) [139]	90/90	14/42	FKQJP + C	Metronidazole + medroxyprogesterone	134
LBY (2019) [140]	30/30	14/42	FKQJP + C	Metronidazole + medroxyprogesterone	134
LSQ (2017) [141]	45/44	42	FKQJP + C	Metronidazole + medroxyprogesterone	1234
YL (2018) [142]	40/40	14/42	FKQJP + C	Metronidazole + medroxyprogesterone	14
ZQ (2016) [143]	156/ 156	14/60	FKQJP + C	Metronidazole + medroxyprogesterone	145
ZCY (2018) [144]	14/14	42	FKQJP + C	Metronidazole + medroxyprogesterone	14
ZGB (2017) [145]	41/41	42	FKQJP + C	Metronidazole + medroxyprogesterone	1
GLJNT (2017) [146]	90/90	42	FKQJP + C	Metronidazole + norethisterone	13
CJH (2016) [147]	40/40	42	FKQJP + C	Metronidazole + norethisterone	13
AYGL (2018) [148]	40/40	42	FKQJP + C	Metronidazole + norethisterone	34
SXX (2018) [149]	70/70	42	FKQJP + C	Metronidazole + norethisterone + vaginal douche	134
XCY (2015) [150]	75/75	21	FKQJP + C	Metronidazole + norethisterone + vaginal douche	134
HF (2016) [151]	75/75	21	FKQJP + C	Metronidazole + norethisterone + vaginal douche	14

Note. ①, total effective rate; ②, incidence of adverse reaction; ③, the time of clinical symptom remission/disappearance; ④, serum inflammatory factor concentration. FKQJP, Fuke Qianjin tablet; C, control group regimens.

TABLE 3: Risk of bias evaluation of included literature.

Study ID	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
Acute pelvic	inflammatory						
CCJ (2018) [27]	U	U	U	U	L	L	U
YML (2013) [28]	U	U	U	U	L	L	U
ZJ (2017) [29]	L	U	U	U	L	L	U
DY (2014) [30]	U	U	U	U	L	L	U
SL (2015) [31]	U	U	U	U	L	L	U
TSQ (2019) [32]	U	U	U	U	L	L	U
XQX (2014) [33]	U	U	U	U	L	Н	U
YFY (2013) [34]	U	U	U	U	L	L	U
RS (2012) [35]	U	U	U	U	L	L	U
SFM (2015) [36]	U	U	U	U	L	L	U
ZY (2013) [37]	U	U	U	U	L	L	U
FXH (2018) [38]	L	U	U	U	L	L	U
SYQ (2015) [39]	U	U	U	U	L	L	U
ZHY (2012) [40]	U	U	U	U	L	L	U
ZYZ (2012) [41]	U	U	U	U	L	L	U

Table 3: Continued.

Study ID	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
YCQ (2017) [42]	U	U	U	U	L	L	U
LWR (2013) [43]	U	U	U	U	L	L	U
WGJ (2011) [44]	U	U	U	U	L	L	U
HRM (2013) [45]	U	U	U	U	L	L	U
GSY (2012) [46]	U	U	U	U	L	L	U
ZYH (2016) [47]	U	U	U	U	L	L	U
ZNN (2012) [48]	U	U	U	U	L	L	U
LJ (2014) [49]	U	U	U	U	L	L	U
Chronic pelvi	c inflammatory						
LJX2 (2014) [50]	U	U	U	U	L	L	U
XZJ (2007) [51]	Н	U	U	U	L	L	U
CXC (2019) [52]	U	U	U	U	L	L	U
DJL (2014) [53]	U	U	U	U	L	L	U
PGZ (2016) [54]	Н	U	U	U	L	L	U
SXL (2015) [55]	L	U	U	U	L	L	U
WQF (2013) [56]	U	U	U	U	L	L	U
ZXJ (2015) [57]	L	U	U	U	L	L	U
ZMY (2017) [58]	U	U	U	U	L	L	U
LJX1 (2014) [50]	U	U	U	U	L	L	U
LXX (2019) [59]	L	U	U	U	L	L	U
LH (2019) [60]	U	U	U	U	L	L	U
PJQ (2019) [61]	U	U	U	U	L	L	U
SWA (2014) [62]	U	U	U	U	L	L	U
SQB2 (2012) [63]	U	U	U	U	L	L	U
ZY (2014) [64]	U	U	U	U	L	L	U
SQB1 (2012) [63]	U	U	U	U	L	L	U
SPF (2015) [65]	U	U	U	U	L	L	U
CF (2018) [66]	U	U	U	U	L	L	U
DLL (2017) [67]	U	U	U	U	L	L	U

Table 3: Continued.

Study ID	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
FJY (2010) [68]	U	U	U	U	L	L	U
FP (2013) [69]	U	U	U	U	L	L	U
KY (2018) [70]	U	U	U	U	L	L	U
LMY (2016) [71]	U	U	U	U	L	L	U
LYK (2016) [72]	U	U	U	U	L	L	U
LongH (2011) [73]	U	U	U	U	L	L	U
RDQ (2019) [74]	U	U	U	U	L	L	U
ShaoXL (2012) [75]	U	U	U	U	L	L	U
TXG (2015) [76]	U	U	U	U	L	L	U
WJP (2013) [77]	U	U	U	U	Н	L	U
YM (2017) [78]	U	U	U	U	L	L	U
YQ (2014) [79]	U	U	U	U	L	L	U
ZYL (2017) [80]	L	U	U	U	L	L	U
DLH (2019) [81]	Н	U	U	U	L	L	U
HJY (2019) [82]	L	U	U	U	L	L	U
LJ (2019) [83]	U	L	L	U	L	L	U
SJL (2016) [84]	U	U	U	U	L	L	U
WJ (2018) [85]	L	U	U	U	L	L	U
ZL (2015) [86]	U	U	U	U	L	L	U
ZT (2018) [87]	U	U	U	U	L	L	U
ZhaoJ (2017) [88]	U	U	U	U	L	L	U
ZengJ (2016) [89]	U	U	U	U	L	L	U
CXF (2018) [90]	U	U	U	U	L	L	U
DCM (2016) [91]	U	U	U	U	L	L	U
DQY (2015) [92]	U	U	U	U	L	L	U
HSX (2019) [93]	Н	U	U	U	L	L	U
HHJ (2019) [94]	L	U	U	U	L	L	U
HHM (2019) [95]	L	U	U	U	L	L	U

Table 3: Continued.

Study ID	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
HYL (2015) [96]	L	U	U	U	L	L	U
LML (2019) [97]	U	U	U	U	L	L	U
LHR (2013) [98]	U	U	U	U	L	L	U
LXL (2018) [99]	L	U	U	U	L	L	U
LSY (2018) [100]	L	U	U	U	L	L	U
LYZ (2012) [101]	Н	U	U	U	L	L	U
MYQ (2019) [102]	U	U	U	U	L	L	U
RC (2016) [103]	U	U	U	U	L	L	U
RL (2017) [104]	L	U	U	U	L	L	U
SNY·HSY (2016) [105]	U	U	U	U	L	L	U
SQJ (2012) [106]	U	U	U	U	L	L	U
YLH (2012) [107]	U	U	U	U	L	L	U
WDD (2017) [108]	L	U	U	U	L	L	U
WHL (2011) [109]	U	U	U	U	L	L	U
WLY (2019) [110]	U	U	U	U	L	L	U
WSY (2011) [111]	U	U	U	U	L	L	U
WY (2018) [112]	L	U	U	U	L	L	U
WDM (2019) [113]	U	U	U	U	L	L	U
XW (2015) [114]	U	U	U	U	L	L	U
XRQ (2018) [115]	U	U	U	U	L	L	U
YDM (2015) [116]	U	U	U	U	L	L	U
YXH (2016) [117]	L	U	U	U	L	L	U
ZhangJ (2017) [118]	U	U	U	U	L	L	U
Endometritis SFF (2017) [119]	U	U	U	U	L	L	U
SCP (2019) [120]	U	U	U	U	L	L	U
DYY (2019) [121]	U	U	U	U	L	L	U
LY (2019) [122]	U	U	U	U	L	L	U
HHF (2017) [123]	L	U	U	U	L	L	U

Table 3: Continued.

			TABLE 3: Contii	iuea.			
Study ID	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
WJF (2019) [124]	U	U	U	U	L	L	U
MTX (2016) [125]	U	U	U	U	L	L	U
SXW (2018) [126]	L	U	U	U	L	L	U
ZHH (2018) [127]	L	U	U	U	L	L	U
ZL (2019) [128]	L	U	U	U	L	L	U
DCL (2017) [129]	U	U	U	U	L	L	U
DFY (2017) [130]	L	U	U	U	L	L	U
GY(2015) [131]	L	U	U	U	L	L	U
LWP (2019) [132]	L	U	U	U	L	L	U
MYJ (2018) [133]	L	U	U	U	L	L	U
DFL (2017) [134]	U	U	U	U	L	L	U
HXY (2018) [135]	U	U	U	U	L	L	U
ZQ (2019) [136]	U	U	U	U	L	L	U
LXZ (2017) [137] CXH (2017)	U	U	U	U	L	L	U
[138] FCF (2016)	L	U	U	U	L	L	U
[139] LBY (2019)	U	U	U	U	L	L	U
[140] LSQ (2017)	U	U	U	U	L	L	U
[141] YL (2018)	L	U	U	U	L	L	U
[142] ZQ (2016)	U	U	U	U	L	L	U
[143] ZCY (2018)	U	U	U	U	L	L	U
[144] ZGB (2017)	U	U	U	U	L	L	U
[145] GLJNT	U	U	U	U	L	L	U
(2017) [146] CJH (2016)	U	U	U	U	L	L	U
[147] AYGL	U	U	U	U	L	L	U
(2018) [148] SXX (2018)	L	U	U	U	L	L	U
[149] XCY (2015)	U	U	U	U	L	L	U
[150] HF (2016)	L	U	U	U	L	L	U
[151]	L	U	U	U	L	L	U

L, low risk; U, unclear risk; H, high risk.

TABLE 4: Meta-analysis results of primary outcomes.

			, ,					,		
;	Type	Type of intervention	Number of	(Heterogeneity test	eity test	Effect	Results of the meta-analysis	eta-ana	ysis
Indication	Experimental group	Control group	studies included	Cases	I^2	р	model	OR (95% CI)	2	р
	Total effective rate		23		%0.0	666.0	Н	5.57 (4.09, 7.58)	10.90	0.001
	FKQJP + control group	Penicillin	9	549	%0.0	0.711	ц	5.77 (3.17, 10.49)	5.74	0.001
	FKQJP + control group	Penicillin + metronidazole	7	801	%0.0	0.887	щ	7.80 (4.00, 15.18)	6.04	0.001
	FKQJP + control group	Quinolones	2	206	%0.0	0.584	ц	3.99 (1.81, 8.77)	3.44	0.001
Acute PID	FKQJP + control group	Quinolones + nitroimidazole	2	140	%0.0	0.773	ц	7.23 (1.78, 29.28)	2.77	900.0
	FKQJP + control group	Roxithromycin	2	180	%0.0	0.809	Щ	4.59 (1.63, 12.96)	2.88	0.004
	FKQJP + control group	Metronidazole	2	132	%0.0	0.330	щ	2.96 (1.07, 8.22)	2.08	0.037
	FKQJP + moxifloxacin	Ceftriaxone + tinidazole	2	220	%0.0	0.829	Щ	5.90 (2.45, 14.20)	3.96	0.001
	Incidence of adverse reaction	10	10	826	%0.0	0.989	Щ	0.71 (0.45, 1.10)	1.55	0.121
	Total effective rate		69	8478	%0.0	0.999	Щ	4.70 (4.07, 5.42)	21.21	0.001
	FKQJP	β -Lactam + nitroimidazole	2	284	%0.0	0.735	Щ	2.55 (1.52, 4.28)	3.53	0.001
	FKQJP + control group	β -Lactam	7	979	%0.0	0.939	Щ	3.88 (2.34, 6.45)	5.24	0.001
	FKQJP + control group	β -Lactam + nitroimidazole	7	200	%0.0	0.918	Щ	6.27 (3.46, 11.37)	6.04	0.001
Chronic DID	FKQJP+ β -	HKOID	C	250	%00	0.570	П	780 (3.29.18.50)	4 66	0.001
Cinoline 1 1D	lactam + nitroimidazole		1	000	0.0.0	0.0.0	-	(3.5.7, 10.30)	9	0.00
	FKQJP + control group	Macrolide	15	1905	%0.0	698.0	щ	3.54 (2.67, 4.68)	8.81	0.001
	FKQJP + control group	Quinolone	∞	892	%0.0	0.925	щ	5.54 (3.61, 8.52)	7.82	0.001
	FKQJP + control group	Quinolone + nitroimidazole	30	3821	%0.0	1.000	щ	5.67 (4.49, 7.16)	14.56	0.001
	Incidence of adverse reaction		30	3082	%0.0	0.708	щ	0.60 (0.46, 0.80)	3.55	0.001
	Total effective rate		30	3521	%0.0	0.998	щ	5.09 (4.03, 6.43)	13.63	0.001
	FKQJP + control group	Antibiotics	4	089	%0.0	0.979	щ	9.01 (4.23, 19.21)	5.69	0.001
Endometritis	FKQJP + antibiotics	Antibiotics + progesterone	12	1122	%0.0	0.969	Ц	4.84 (3.25, 7.21)	7.77	0.001
	FKQJP + control group	Antibiotics + progesterone	11	1279	%0.0	0.959	ц	4.40 (3.03, 6.39)	7.78	0.001
	FKQJP + control group	Antibiotics + progesterone + vaginal douche	3	440	%0.0	0.758	Щ	5.25 (2.92, 9.44)	5.54	0.001
FKQJP, Fuke Qia	FKQJP, Fuke Qianjin tablet; R, random-effect model; F, fix-effect model	, fix-effect model.								

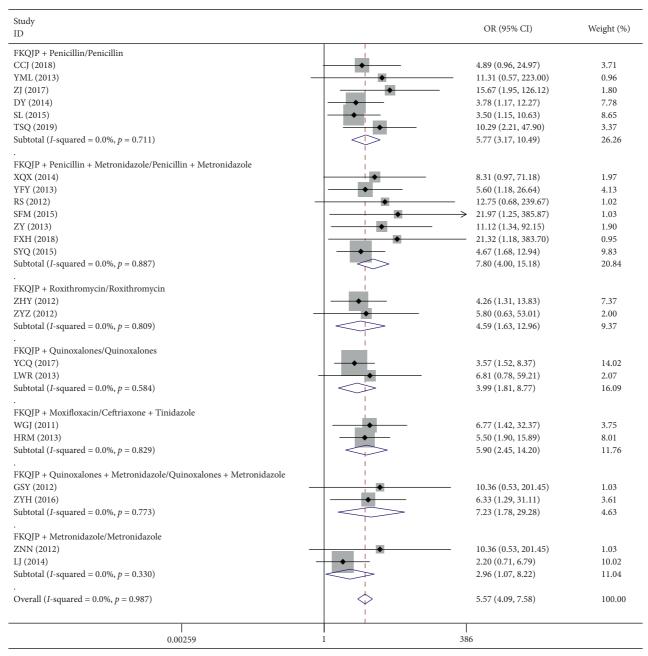


FIGURE 2: Meta-analysis of total effective rate of acute pelvic inflammatory disease.

outcome. The results of the fixed-effect model showed that the combined group of Fuke Qianjin tablets had a better total effective rate of treating endometritis than the control group (OR = 5.09, 95% CI 4.03–6.43, Z=13.63, p=0.001). According to the specific intervention measures, the subgroup analysis showed that the combined group of Fuke Qianjin tablets had a better curative effect than the control group (Table 4 and Figure 8).

(2) Adverse Reaction. In the included study, only 4 studies (a total of 427 participants) counted adverse reactions as part of the study. 3 studies reported no serious adverse reactions or no obvious adverse reactions, and 1 reported specific adverse

reactions: there were 2 cases in the trial group (1 case of nausea and 1 case of gastrointestinal reaction); there were 3 cases in the control group (1 case of nausea, 1 case of vomiting, and 1 case of gastrointestinal reaction). There was no significant difference in the incidence of adverse reactions between the two groups (p > 0.05).

3.4.2. Secondary Outcomes. Comparisons in secondary outcomes were also made. Similar to the primary outcome, Fuke Qianjin tablets combined with antibiotics had better efficacy profiles in improving endometrial thickness, menstrual recovery, and relapse rate, as shown in Table 5.

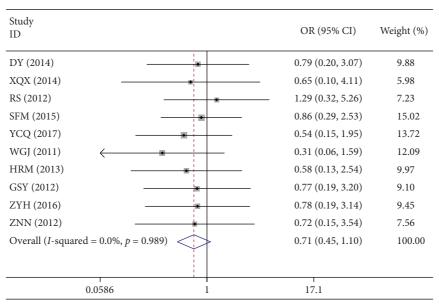


FIGURE 3: Meta-analysis of adverse reaction of acute pelvic inflammatory disease.

TABLE 5: The meta-analysis results of the secondary outcomes.

r 1: .:	0.4	Number of	-		ogeneity est	Effect	Results of the meta-an	alysis
Indication	Outcomes	studies included	Cases	I^2	p	model	SMD/OR (95% CI)	p
	Clinical symptom remission or disappearance time	8	899	_	_	_	_	_
	The time of the masses disappearance	7	821	89.2%	0.001	R	-1.36 (-1.84, -0.89)	0.001
	The time of body temperature return to normal	7	821	84.9%	0.001	R	-1.19 (-1.58, -0.79)	0.001
Acute PID	The time to relieve abdominal pain	7	821	90.7%	0.001	R	-1.83 (-2.38, -1.29)	0.001
	Serum inflammatory factor concentration	6	558	_	_	_	_	_
	CRP concentration	3	300	92.1%	0.001	R	-1.99 (-3.01, -0.98)	0.001
	TNF- α concentration	4	372	50.8%	0.107	F	-1.73 (-1.97, -1.49)	0.001
	IL-6 concentration	4	380	94.4%	0.001	R	-1.53 (-2.52, -0.53)	0.001
	Clinical symptom remission or disappearance time	13	1394	_	_	_	_	_
	The remission time of uterine pain	5	542	92.0%	0.001	R	-2.48 (-3.29, -1.66)	0.001
	The remission time of abdominal pain	12	1208	85.6%	0.001	R	-2.12 (-2.49, -1.74)	0.001
Cl : NID	The time for leucorrhoea to return to normal	7	782	27.4%	0.219	F	-1.38 (-1.54, -1.22)	0.001
Chronic PID	Serum inflammatory factor concentration	11	2317	_	_	_	_	_
	CRP concentration	5	1575	87.6%	0.001	R	-3.10 (-3.69, -2.51)	0.001
	TNF- α concentration	5	646	96.6%	0.001	R	-2.56 (-3.68, -1.43)	0.001
	IL-2 concentration	3	264	0.0%	0.969	F	0.85 (0.59, 1.10)	0.001
	IL-4 concentration	3	264	0.0%	0.933	F	0.60 (0.59, 0.85)	0.001
	IL-10 concentration	2	182	0.0%	0.790	F	0.49 (0.20, 0.79)	0.001
	Endometrial thickness	16	1680	87.8%	0.001	R	2.25 (1.89, 2.60)	0.001
	Normalization rate of menstrual	12	1413	0.0%	0.978	F	4.01 (3.04, 5.30)	0.001
	Normalization rate of menstrual cycle	6	845	46.3%	0.097	F	5.57 (3.82, 8.13)	0.001
Endometritis	Normalization rate of menstrual amount	6	865	79.9%	0.001	R	4.96 (1.72, 14.28)	0.001
	Incidence of irregular vagina bleeding	15	1693	0.0%	0.995	F	0.23 (0.16, 0.31)	0.001
	6-month relapse rate	3	576	0.0%	0.683	F	0.15 (0.07, 0.35)	0.001

FKQJP, Fuke Qianjin tablet; R, random-effect model; F, fix-effect model.

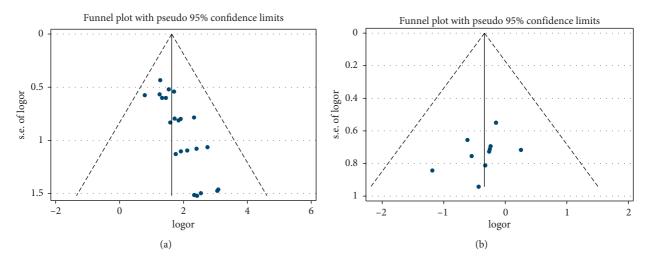


FIGURE 4: (a) Funnel plot of acute pelvic inflammatory disease of total effective rate. (b) Funnel plot of acute pelvic inflammatory disease of incidence of adverse reaction.

3.4.3. Publication Bias. Perform the publication bias test on total effective rate, endometrial thickness, menstrual normalization rate, and the incidence of irregular vaginal bleeding, and the inverted funnel diagram (Figures 9(a)–9(c)) was drawn, respectively. The results of the Harbord test showed that there were no significant publication bias and small sample effect in the total effective rate (t=0.17, p=0.859), endometrial thickness (t=2.04, p=0.060), menstrual normalization (t=-0.90, p=0.39), and the incidence of irregular vaginal bleeding (t=0.17, t=0.867). The inverted funnel plots of the 3 outcomes were substantially symmetric.

4. Discussion

In recent years, some researchers have evaluated Fuke Qianjin tablets in the treatment of acute pelvic inflammation, chronic pelvic inflammation, and endometritis [17,152–154]. It is considered that the clinical effect of Fuke Qianjin tablets combined with antibiotics is better than that of antibiotics alone, which is consistent with the conclusion of this study. The purpose of this study was to compare the efficacy and safety of gynecological Qianjin tablets combined with routine treatment in patients with pelvic inflammatory diseases. The results of this study showed that Fuke Qianjin tablets combined with conventional treatment have better efficacy outcomes for acute pelvic inflammatory disease, chronic pelvic inflammatory disease, and endometritis when compared to using antibiotics alone. Moreover, it can shorten the time of clinical symptom relief, reduce serum inflammatory factor concentration, improve endometrial thickness, improve menstruation, and reduce relapse rate. According to studies reports, the combined application of Fuke Qianjin tablets has no significant adverse reactions, suggesting a strong safety profile.

The occurrence of pelvic inflammatory disease is not only related to a single bacterium. Studies have shown that 30–40% of pelvic inflammatory cases are caused by multibacterial infection [155]. Therefore, it is necessary to provide broad-

spectrum coverage of possible pathogens during treatment. The results of the subgroup analysis showed that the efficacy of Fuke Qianjin tablets combined with antibiotics was not affected by antibiotic types. It demonstrated that Fuke Qianjin tablets are effective in the treatment of a variety of bacteria and have the therapeutic effect of broad-spectrum coverage. Evidence from the PEACH research suggests that short-term and long-term outcomes of oral and intravenous regimens are similar [156], so there is no subgroup analysis of antibiotic administration routes and courses in this study. In addition, two studies of Fuke Qianjin tablets compared with antibiotics (penicillin + metronidazole) showed that Fuke Qianjin tablet was more effective in the treatment of chronic pelvic inflammation. Due to the small number of literature included, more clinical studies need to be carried out to verify the clinical efficacy of Fuke Qianjin tablets alone.

Traditional Chinese medicine has multiple components, and its complexity means it has many potential targets. This makes it more difficult for bacteria to become resistant to it, which has a definite clinical advantage for PID. Fuke Qianjin tablet is extracted from herbs including Suberect spatholobus stem, Jin Ying Gen, Angelica sinensis, and Andrographis paniculata Nees. Suberect spatholobus stem has the effect of relaxing muscles and activating blood circulation; Jin Ying Gen has the effect of fixing essence and astringent intestines; Angelica sinensis has the effect of tonifying blood, harmonizing blood, regulating menstruation, and stopping bleeding; Andrographis paniculata Nees has the effect of cooling blood and detumescence, clearing heat, and detoxification. Related animal experiments and modern pharmacological studies [157-161] showed that Fuke Qianjin tablets may achieve the anti-inflammatory effect by regulating the concentration of serum TNF-α, NF-kB, IL-2, IL-6, and other factors to reduce the inflammatory response mediated by cellular inflammatory factors. It can also promote the production of IgA, IgG, and IgM [162], improve the body's immunity, play antibacterial and anti-inflammatory effects, and also improve the body's ability to resist infection. This demonstrated that in the future, due to the increasing resistance of pathogens to antibiotics,

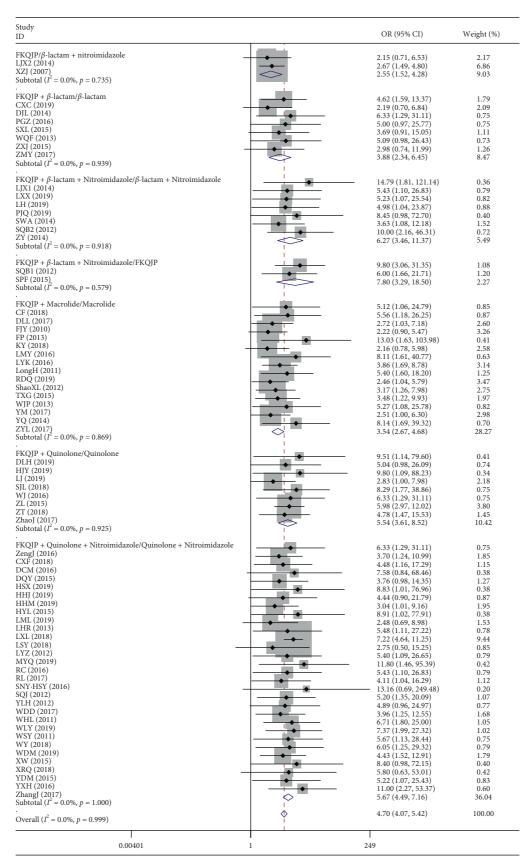


FIGURE 5: Meta-analysis of total effective rate of chronic pelvic inflammatory disease.

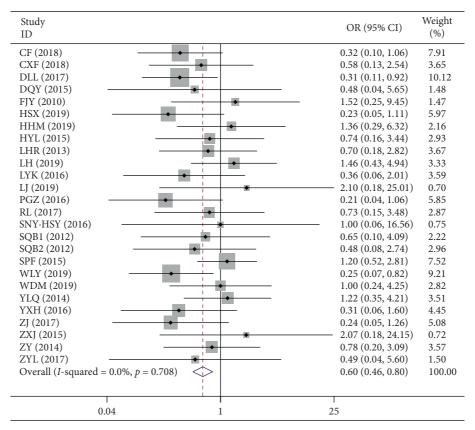


FIGURE 6: Meta-analysis of adverse reaction of chronic pelvic inflammatory disease.

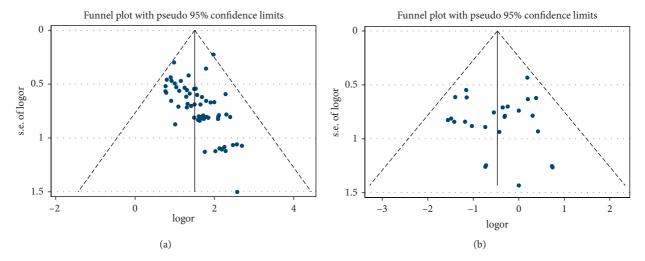


FIGURE 7: (a) Funnel plot of chronic pelvic inflammatory disease of the total effective rate. (b) Funnel plot of chronic pelvic inflammatory disease of incidence of adverse reaction.

traditional Chinese medicine may play a more important role in the treatment of PID anti-inflammatory. Therefore, it is necessary to carry out a clinical study on the graded dose response of Fuke Qianjin tablets combined with antibiotics to explore whether the combined application can reduce the dose and frequency of antibiotics, so as to alleviate the situation of reduced efficacy due to increased antibiotic resistance.

Heterogeneity between studies is a key issue in metaanalysis. The existence of heterogeneity has an impact on the merger of research results and also directly affects the interpretation of meta-analysis results. This research conducted a subgroup analysis and sensitivity analysis on the outcomes with high heterogeneity. Through a reexamination of studies with high heterogeneity and comparison with other studies, the stability of the sensitive

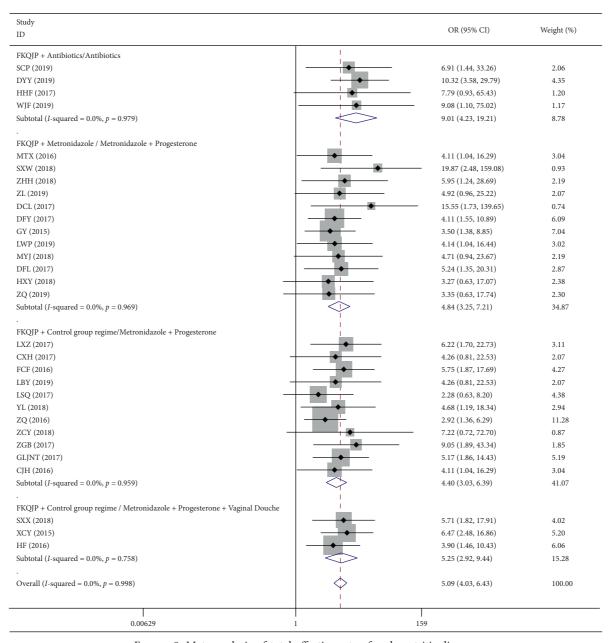


Figure 8: Meta-analysis of total effective rate of endometritis disease.

analysis results to determine the credibility of the research results and whether to retain the studies. In the meta-analysis of acute pelvic inflammatory disease, there was significant heterogeneity in some secondary outcome indicators, which was mainly caused by Zhao and Huang [29] and Fan [38]. The reverification of the two articles showed that the literature quality evaluation was moderately biased risk. After excluding the literature data, the result of meta-analysis was still significant, and the sensitivity analysis showed that the result was stable. In the meta-analysis of chronic pelvic inflammation, two secondary outcome indicators of the remission time of uterine pain and remission time of abdominal pain carried out subgroup analysis according to the course of treatment. The results showed that the heterogeneity significantly decreased, and the difference between the experimental group

and the control group was still statistically significant. It can be considered that the results of meta-analysis of these two indicators were robust. Sensitivity analysis was performed on the two secondary outcome indicators of CRP and TNF- α concentration. The outcome indicator of TNF- α concentration has passed the sensitivity analysis, and the meta-analysis results of this indicator can be considered robust. The outcome indicator of CRP concentration in chronic pelvic inflammatory disease cannot pass the sensitivity analysis. It is considered that the reliability of the result of meta-analysis of this indicator was low, and the source of its heterogeneity needs to be further discussed.

This research still has certain limitations. First of all, affected by the quality of the original literature, only 2 articles of the original literature reported the specific

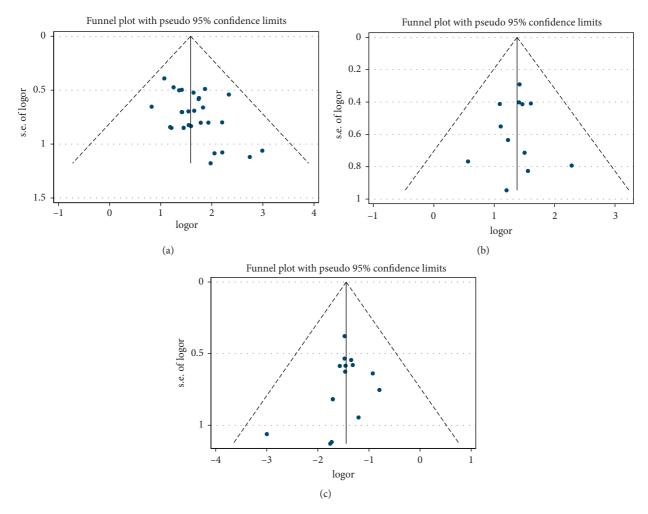


FIGURE 9: (a) Funnel plot of endometritis of the total effective rate. (b) Funnel plot of endometritis of menstruation recovery rate. (c) Funnel plot of endometritis of incidence of irregular vaginal bleeding.

implementation of the blind method, and most of them did not report the specific implementation of the random method and the blind method, which may have some potential bias. Second, the subgroup analysis and sensitivity analysis of the secondary outcome indicators with heterogeneity showed that the results were robust. But the number of secondary outcome indicators reported in articles was very small, thereby potentially affecting the strength of the results. Finally, the clinical research of gynecological Fuke Qianjin tablets is only carried out across hospitals in China. The extrapolation of the results on an international scale maybe limited. In order to overcome the above limitations and verify the results of this study, additional high-quality randomized controlled trials that employ a larger sample size are required.

5. Conclusion

In order to systematically evaluate the efficacy of Fuke Qianjin tablets in the treatment of pelvic inflammatory diseases and endometritis, this study uses indicators such as total effective rate and incidence of adverse reactions to compare with the combined application of various conventional treatment programs. Results from 125 studies have been observed in the treatment of acute pelvic inflammatory disease, chronic pelvic inflammatory disease, and endometritis. Overall, these studies report positive effects of Fuke Qianjin tablets as adjuvant medication. In addition, the incidence of adverse reactions was not statistically different in the analyzed studies.

Abbreviations

CNKI: China National Knowledge Infrastructure VIP: Chinese Scientific Journals Database

PID: Pelvic inflammatory disease

FKQJP: Fuke Qianjin tablet.

Data Availability

The data generated or analyzed during this study are included within this published article. The data used to support the findings of this study have been deposited in the 7 electronic databases, including PubMed, The Cochrane Library, Web of science, CNKI, Wan Fang, VIP, and Sinomed.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Authors' Contributions

PJ was in charge of the main execution of the research and wrote the main part of the study. All authors contributed to data analysis and drafted and revised the article. Wentao supervised and instructed the study. All authors read and approved the final manuscript.

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