INPLASY

A Systematic Review of the Mechanisms of Action of Guizhi Fuling Wan in the Treatment of Uterine Fibroids Based on Network Pharmacology

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ADMINISTRATIVE INFORMATION

Support - No.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 17 November 2025 and was last updated on 17 November 2025.

INTRODUCTION

Review question / Objective The objective of this systematic review is to evaluate the efficacy and safety of Guizhi Fuling Wan (GFW) in the treatment of uterine fibroids by synthesizing evidence from network pharmacological analyses, in vitro experiments, animal studies, and clinical trials. Specifically, the review aims to: (1) assess the impact of GFW on reducing uterine fibroid volume and alleviating associated clinical symptoms; (2) evaluate changes in hormonal and inflammatory profiles following GFW treatment; and (3) determine the safety and tolerability of GFW compared to placebo, conventional pharmaceutical treatments, or other traditional Chinese medicine interventions. This review will provide a comprehensive understanding of the potential benefits and risks of GFW as a therapeutic option for women with uterine fibroids.

Condition being studied The impact of uterine fibroids on women's health and quality of life is substantial, often necessitating medical or surgical intervention. Current treatment options range from conservative management with medications to surgical procedures such as myomectomy (fibroid removal) or hysterectomy (uterus removal), depending on the severity of symptoms, patient's age, and desire for future fertility. Despite these interventions, there remains a need for safer, more effective, and fertility-preserving treatment modalities, highlighting the importance of ongoing research in this area.

METHODS

Participant or population The review will focus on women of reproductive age who have been clinically diagnosed with uterine fibroids (uterine leiomyoma).
This population includes both symptomatic and asymptomatic patients, with a particular emphasis on those seeking medical or surgical intervention for their condition. The review will encompass studies involving diverse ethnic and geographical backgrounds to ensure broad applicability of the findings.

Intervention The primary intervention of interest is the administration of Guizhi Fuling Wan (GFW), a classic Chinese herbal formula, for the treatment of uterine fibroids.
This includes various forms of GFW, such as traditional decoctions, capsules, or pills, used either as monotherapy or in combination with other conventional treatments (e.g., mifepristone). The review will evaluate the efficacy, safety, and mechanism of action of GFW in reducing fibroid volume, alleviating symptoms, and improving hormonal profiles.

Comparator Comparative interventions will include placebo, no treatment, or conventional medical and surgical therapies commonly used for uterine fibroids, such as hormonal therapy (e.g., progestins, gonadotropin-releasing hormone agonists), myomectomy, hysterectomy, and uterine artery embolization. The review will compare the effectiveness of GFW against these interventions in terms of symptom relief, fibroid size reduction, and adverse effects.

Study designs to be included To address the objective of the review, the following study designs will be included:Randomized controlled trials (RCTs)Quasi-experimental studiesCohort studiesCase-control studiesPreclinical studies (in vitro and animal experiments) that provide mechanistic insights into GFW's action on uterine fibroids.

Eligibility criteria
Inclusion Criteria:

Studies involving women diagnosed with uterine fibroids.
Intervention with Guizhi Fuling Wan, alone or in combination with other treatments.
Comparative studies with placebo, no treatment, or conventional therapies.
Studies reporting outcomes on fibroid volume, symptom relief, hormonal profiles, and adverse effects.

Exclusion Criteria:

Studies not specifically focusing on uterine fibroids.
Non-comparative case reports or series without a control group.
Studies with insufficient data on outcomes of interest.
Duplicate publications or studies with overlapping populations.

Information sources The review will utilize multiple information sources to ensure comprehensive coverage of the literature. These include:

Electronic databases: PubMed, Embase, Cochrane Library, Web of Science, CNKI (China National Knowledge Infrastructure), Wanfang Data, and VIP (Chinese Scientific Journals Database).
Trial registers: ClinicalTrials.gov, WHO International Clinical Trials Registry Platform (ICTRP).
Grey literature: Conference proceedings, theses, and dissertations.
Manual search of reference lists of included studies and relevant reviews.
Contact with authors for additional data or clarification when necessary.

Main outcome(s) Primary Outcomes:

Reduction in uterine fibroid volume, measured by imaging techniques (e.g., ultrasound, MRI).
Improvement in clinical symptoms, assessed by validated symptom severity scores (e.g., menstrual bleeding volume, pelvic pain).
Secondary Outcomes:

Changes in hormonal profiles (e.g., estradiol, progesterone).
Adverse effects and safety profile of GFW, reported as incidence rates or severity scores.
Quality of life measures, using standardized questionnaires.
Recurrence rates of uterine fibroids post-treatment.

Quality assessment / Risk of bias analysis The method of quality assessment in primary studies will adhere to established guidelines for systematic reviews. For randomized controlled trials (RCTs), the Cochrane Risk of Bias Tool will be utilized.
For non-randomized studies, such as cohort and case-control studies, the Newcastle-Ottawa Scale (NOS) will be employed.

Strategy of data synthesis Data synthesis will be conducted using a systematic and transparent approach. For quantitative data, meta-analysis will be performed when studies are sufficiently homogeneous in terms of participants, interventions, comparators, and outcomes. The DerSimonian-Laird random-effects model will be used to account for potential heterogeneity among studies. The I^2 statistic will be calculated to quantify the degree of heterogeneity, with values above 50% indicating substantial heterogeneity.

Subgroup analysis Subgroup analyses will be planned to investigate whether the effects of Guizhi Fuling Wan (GFW) on uterine fibroids vary across different patient populations or intervention characteristics.

Sensitivity analysis Sensitivity analyses will be conducted to assess the robustness of the findings. This will involve repeating the meta-analyses or narrative syntheses after excluding studies with high risk of bias, those with small sample sizes, or those that deviate significantly from the average in terms of intervention details or outcome measures.

Country(ies) involved China.

Keywords Guizhi Fuling Wan; Uterine Fibroids; Network Pharmacology; Mechanism of Action; Systematic Review; ESR1; VEGFA; AKT1; TP53; TNF-α.

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