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Herbal medicine for anemia: an overview of systematic reviews and meta-analyses

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Lee, E; Hong, S; Sung, H; Kim, M.

Corresponding author:

Mikyung Kim

01mkkim@gmail.com

Author Affiliation:

Dongguk University Ilsan Oriental Hospital.

ADMINISTRATIVE INFORMATION**Support** - No support.**Review Stage at time of this submission** - Data extraction.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202690032**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 8 September 2026 and was last updated on 8 September 2026.**INTRODUCTION**

Review question / Objective In patients with anemia, what is the extent, certainty, and distribution of systematic-review evidence on the effectiveness and safety of herbal medicine, used alone or as an adjunctive therapy?

Rationale Systematic reviews and meta-analyses of herbal medicine for anemia have been published across a range of anemia types and clinical settings. However, the available evidence is scattered across different populations, interventions, comparators, and outcomes, making it difficult to understand the overall state of the evidence. This overview aims to synthesize the existing systematic-review evidence, assess its methodological quality and certainty, and identify areas where evidence is relatively well established or remains limited.

Condition being studied Anemia is characterized by a reduction in hemoglobin concentration and may result from a wide range of underlying causes.

These include iron deficiency, bone marrow failure, chronic kidney disease, malignancy, chronic inflammatory disorders, and other conditions. Because the etiology, clinical setting, and standard treatment of anemia vary considerably, the available evidence needs to be interpreted according to the specific anemia type and clinical context.

METHODS

Search strategy PubMed, Cochrane Library (CDSR), Scopus, Epistemonikos, CNKI, CiNii, KoreaMed, and OASIS were searched using combinations of terms related to anemia, herbal medicine, and systematic reviews or meta-analyses. Search strategies were adapted to the syntax and indexing of each database. Reference lists of relevant articles were also screened to identify additional eligible reviews.

Participant or population Patients with anemia of any etiology or clinical setting were eligible. Anemia could be the primary disease entity or an

explicitly defined component of the target clinical condition, such as anemia associated with chronic kidney disease, cancer, heart failure, or other disorders. Studies in which anemia was not explicitly specified in the target population were excluded, even if anemia-related laboratory measures were reported as secondary outcomes.

Intervention Herbal medicine of any formulation or route of administration, including single-herb preparations, multi-herb formulas, and proprietary herbal products, used alone or as an adjunct to conventional treatment.

Comparator Any comparator that allowed the effect of herbal medicine to be evaluated was eligible, including placebo, no treatment or wait-list control, usual care, and active conventional treatment.

Study designs to be included Peer-reviewed systematic reviews with meta-analysis of randomized controlled trials were eligible. Reviews including both randomized and non-randomized studies were eligible only when data from randomized controlled trials were separately extractable.

Eligibility criteria Only peer-reviewed full-text articles were eligible. Dissertations, conference abstracts, protocols, scoping reviews, narrative reviews, and other non-systematic reviews were excluded.

Information sources The following electronic databases were searched: PubMed, Cochrane Library (CDSR), Scopus, Epistemonikos, CNKI, CiNii, KoreaMed, and OASIS. In addition, the reference lists of relevant articles were screened to identify additional eligible reviews.

Main outcome(s) Anemia-related efficacy outcomes measured after treatment were considered, including hemoglobin; other erythrocyte parameters (e.g., RBC, hematocrit, MCV, MCH, MCHC, and RDW); iron status measures (e.g., ferritin, serum iron, TSAT, and TIBC); anemia-related response or remission outcomes; and patient-important clinical outcomes directly related to anemia, such as transfusion requirement, fatigue, quality of life, and functional status. For categorical treatment-response outcomes, only definitions based on anemia-related diagnostic or hematologic criteria were included. Effect estimates and 95% confidence intervals were extracted as reported in the included meta-analyses. Outcomes not directly related to anemia were not extracted.

Additional outcome(s) Safety outcomes, primarily the incidence of adverse events, as reported in the included meta-analyses.

Quality assessment / Risk of bias analysis The methodological quality of the included systematic reviews was assessed using AMSTAR 2. Risk-of-bias assessments of the primary randomized controlled trials were extracted from the included reviews rather than reassessed de novo. The certainty of evidence for each meta-analytic outcome was assessed using GRADE.

Strategy of data synthesis The findings will be synthesized narratively according to anemia type, intervention and comparison type, and outcome domain. No de novo meta-analysis will be performed. Meta-analytic results from the included reviews will be presented as reported, together with the number of RCTs and participants, statistical heterogeneity, effect interpretation, and certainty of evidence. Overlap of primary studies across reviews will be assessed using the corrected covered area (CCA) and considered when interpreting the findings.

Subgroup analysis No formal subgroup analysis is planned. Findings will be narratively stratified by anemia type and, where appropriate, by intervention and comparison type.

Sensitivity analysis No formal sensitivity analysis is planned because no de novo meta-analysis will be conducted.

Language restriction No language restrictions were applied.

Country(ies) involved South Korea.

Keywords Anemia; Herbal medicine; Systematic review; Meta-analysis; Overview of reviews; Evidence synthesis.

Dissemination plans The findings will be submitted for publication in a peer-reviewed journal.

Contributions of each author

Author 1 - Eunbi Lee.

Author 2 - Seungcheol Hong.

Author 3 - Hyunkyung Sung.

Author 4 - Mikyung Kim.