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Complete Versus Incomplete Initial Induction Regimens of IL-17 and Selective IL-23 Inhibitors for Plaque Psoriasis: A Systematic Review of Real-World Comparative Studies

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ADMINISTRATIVE INFORMATION

Support - No support.**Review Stage at time of this submission** - Preliminary searches.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY2026100002

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 1 October 2026 and was last updated on 1 October 2026.

INTRODUCTION

Review question / Objective To systematically evaluate the effectiveness, treatment persistence, and safety of complete label-recommended initial induction/loading regimens compared with incomplete, reduced, abbreviated, or omitted induction/loading regimens in adults with plaque psoriasis initiating IL-17 or selective IL-23 inhibitor therapy in real-world clinical practice. The primary focus will be early clinical effectiveness within 16 weeks, particularly PASI90 response, with longer-term effectiveness, drug survival/persistence, and safety evaluated as secondary outcomes.

Condition being studied Plaque psoriasis is a chronic, immune-mediated inflammatory skin disease characterized by well-demarcated erythematous plaques with scale and a relapsing course. Moderate-to-severe disease may require systemic treatment, including biologic agents targeting the interleukin (IL)-17 and IL-23 pathways. These biologics are generally initiated

using label-recommended induction or loading regimens before transition to maintenance dosing. In routine clinical practice, however, induction regimens may be reduced, abbreviated, partially completed, or omitted because of clinical judgment, treatment access, cost, reimbursement, adherence, or other practical considerations. The clinical consequences of incomplete initial induction compared with complete label-recommended induction remain uncertain. This review will focus on adults with plaque psoriasis initiating IL-17 or selective IL-23 inhibitor therapy in real-world clinical practice.

METHODS

Participant or population Adults (≥ 18 years) with plaque psoriasis initiating treatment with an IL-17 inhibitor or selective IL-23 inhibitor in routine clinical practice. Studies including mixed psoriasis phenotypes will be eligible only when data for patients with plaque psoriasis are separately extractable. Studies involving exclusively pediatric populations or patients treated solely for psoriatic

arthritis without separately reported plaque psoriasis outcomes will be excluded.

Intervention Complete initial induction/loading regimen with an IL-17 inhibitor or selective IL-23 inhibitor approved for plaque psoriasis in at least one jurisdiction by the final search date, defined as receipt of the full label-recommended induction/loading schedule at treatment initiation before transition to maintenance dosing. Eligible agents include secukinumab, ixekizumab, brodalumab, bimekizumab, netakimab, xeligekimab, vunakizumab, guselkumab, risankizumab, tildrakizumab, and picankibart.

Comparator Incomplete initial induction/loading regimen, defined as receipt of fewer than the label-recommended induction/loading doses, a reduced or abbreviated initial induction/loading schedule, or complete omission of induction/loading, including direct initiation with maintenance dosing where applicable. The comparator will be defined relative to the approved induction/loading regimen for the specific biologic and jurisdiction at treatment initiation.

Study designs to be included Comparative real-world observational studies, including prospective and retrospective cohort studies and eligible registry- or database-based cohort studies, that directly compare complete versus incomplete, reduced, abbreviated, or omitted initial induction/loading regimens of eligible biologics. Noncomparative studies, case reports/series, conference abstracts, and randomized efficacy trials will be excluded.

Eligibility criteria Studies will be eligible if they are full-text original research articles published in English and report comparative real-world data on adults with plaque psoriasis initiating an eligible IL-17 or selective IL-23 inhibitor. The comparison must involve the same biologic and directly evaluate complete label-recommended initial induction/loading versus an incomplete, reduced, abbreviated, or omitted initial induction/loading regimen. Studies of mixed psoriasis phenotypes will be included only when plaque psoriasis data are separately extractable. Studies will be excluded if dose modification occurs only after completion of standard induction, including maintenance dose reduction or interval extension, dose escalation for inadequate response, retreatment or re-induction after treatment interruption, or switching without an initial-induction comparison. Experimental dose-ranging or regimen-finding trials, studies comparing different biologics without an induction-strategy

contrast, noncomparative studies, case reports or case series, reviews, editorials, conference abstracts, and studies without sufficient extractable comparative outcome data will also be excluded.

Information sources Electronic searches will be conducted in PubMed/MEDLINE, Scopus, and Web of Science Core Collection from database inception to 30 September 2026. Reference lists of included studies and relevant previous reviews will be screened for additional eligible studies, and forward citation searching of included studies will also be performed. Study authors may be contacted when clarification or additional extractable data are required, including plaque psoriasis-specific or induction-regimen-specific data. Trial registries and grey literature will not be included because eligibility is restricted to full-text original comparative real-world studies.

Main outcome(s) The primary outcome will be PASI90 response during the early treatment period (≤ 16 weeks), defined as the proportion of patients achieving at least a 90% reduction from baseline Psoriasis Area and Severity Index (PASI). When multiple assessments are reported within this period, the latest available assessment at or before week 16 will be used as the primary time point, while other early time points will be retained for descriptive synthesis. Comparative effect measures will include risk ratios with 95% confidence intervals where calculable; adjusted relative measures reported by individual observational studies, including odds ratios, risk ratios, or hazard ratios with 95% confidence intervals, will also be extracted and preferentially considered when appropriate.

Quality assessment / Risk of bias analysis Risk of bias in included nonrandomized comparative studies will be assessed using the Risk Of Bias In Non-randomized Studies of Interventions (ROBINS-I) tool. Assessment will consider bias due to confounding, participant selection, classification of intervention/exposure, deviations from intended interventions, missing data, outcome measurement, and selective reporting. Particular attention will be given to confounding by indication, including differences in baseline psoriasis severity, body weight/BMI, prior biologic exposure, psoriatic arthritis, adherence, treatment access or reimbursement, and center- or time-related prescribing practices. Two reviewers will assess risk of bias independently, with disagreements resolved by discussion and, when necessary, consultation with a third reviewer.

Domain-level judgments and an overall risk-of-bias judgment will be reported for each study.

Strategy of data synthesis Data will primarily be synthesized using a structured narrative approach because substantial clinical and methodological heterogeneity is anticipated across biologic agents, induction/loading strategies, outcome definitions, assessment time points, and patient characteristics. Studies will be grouped by biologic agent, type of induction/loading comparison, and follow-up period. The primary synthesis will focus on PASI90 during the early treatment period (≤ 16 weeks), followed by other early effectiveness outcomes, outcomes at approximately 6 months (>16 –28 weeks) and 12 months (48–56 weeks), treatment persistence/drug survival, and safety.

For dichotomous outcomes, risk ratios with 95% confidence intervals will be calculated when sufficient data are available. Adjusted effect estimates reported by individual studies, including adjusted odds ratios, risk ratios, or hazard ratios, will be preferentially considered because of potential confounding in observational data. Continuous outcomes will be summarized using mean differences or standardized mean differences where appropriate.

Meta-analysis will be considered only when at least two studies are sufficiently comparable in terms of biologic agent, induction strategy, outcome definition, and assessment time point; otherwise, results will be synthesized narratively. Statistical heterogeneity will be assessed using the I^2 statistic when meta-analysis is undertaken. Studies with potentially overlapping populations will not be double-counted in quantitative synthesis; the most informative report for the relevant outcome will be selected, while overlapping reports may be described narratively. Findings will be interpreted with consideration of risk of bias, particularly confounding by indication, and absence of statistical significance will not be interpreted as evidence of equivalence.

Subgroup analysis Where sufficient data are available, subgroup analyses will explore whether findings differ according to biologic agent, type of incomplete induction/loading strategy (partial or abbreviated induction versus complete omission/maintenance-only initiation), baseline psoriasis severity, body weight/BMI, and prior biologic exposure. Because a limited number of heterogeneous observational studies is anticipated, formal subgroup meta-analysis will be performed only when at least two sufficiently comparable studies provide appropriate data. Otherwise, subgroup findings will be presented as stratified narrative comparisons and interpreted

cautiously as exploratory because of potential confounding and limited statistical power.

Sensitivity analysis Sensitivity analyses will be performed where sufficient data are available. These will include repeating quantitative or structured comparative syntheses after excluding studies judged to have serious or critical overall risk of bias, studies with substantial concerns regarding confounding by indication, and reports with probable or confirmed population overlap. Where relevant, analyses will also be repeated excluding studies in which the induction/loading comparison is not clearly isolated from differences in maintenance dosing. If meta-analysis is undertaken, the influence of individual studies will be examined by leave-one-out analysis. Because a small number of heterogeneous observational studies is anticipated, sensitivity analyses that cannot be performed quantitatively will be explored narratively, and any resulting changes in the direction or interpretation of findings will be reported.

Language restriction English.

Country(ies) involved Thailand.

Keywords plaque psoriasis; biologics; IL-17 inhibitors; IL-23 inhibitors; induction regimen; loading dose; real-world evidence; treatment effectiveness; drug survival; safety.

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