

INPLASY PROTOCOL

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Review Stage at time of this submission: The review has not yet started.

Conflicts of interest:

The authors declare no conflicts of interest.

Bone mineral density and risk of fractures in adult patients with psoriasis or psoriatic arthritis: a systematic review and meta-analysis

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Review question / Objective: To assess the bone mineral density (BMD) as well as the risk of osteoporosis and fractures among patients with psoriatic disease including cutaneous psoriasis and psoriatic arthritis.

Condition being studied: The association of bone mineral density (BMD) as well as the risk of osteoporosis and fractures among patients with psoriatic disease including cutaneous psoriasis and psoriatic arthritis.

Information sources: We will search electronic databases (PubMed, Embase, Cochrane Library, and Web of Science) and Chinese medical databases (Airiti Library and Chinese National Knowledge Infrastructure databases) for relevant studies. We will also examine the reference lists or bibliographies of the available review articles and relevant meta-analyses for additional candidates. Case reports, case series, review articles, conference abstracts, animal studies or those performed in laboratory settings will be excluded. If the qualified study do not report the data available for data synthesis, we will contact the authors for the desired effect size and relevant information.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 26 August 2020 and was last updated on 26 August 2020 (registration number INPLASY202080106).

INTRODUCTION

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patients with psoriatic disease including cutaneous psoriasis and psoriatic arthritis.

Condition being studied: The association of bone mineral density (BMD) as well as the risk of osteoporosis and fractures among

patients with psoriatic disease including cutaneous psoriasis and psoriatic arthritis.

METHODS

Search strategy: We will use the combination of the following terms: “bone mineral density”, “osteoporosis”, “fracture”, “psoriasis”, and “psoriatic arthritis”. Studies in a language other than English or Chinese will be excluded. No restrictions regarding the age of the patients will be applied.

Participant or population: Adult population.

Intervention: Exposure: diagnosis of psoriatic disease including cutaneous psoriasis and psoriatic arthritis

Comparator: Non-exposure: healthy adult controls.

Study designs to be included: observational study design (cross-sectional, case-control, or cohort studies).

Information sources: We will search electronic databases (PubMed, Embase, Cochrane Library, and Web of Science) and Chinese medical databases (Airiti Library and Chinese National Knowledge Infrastructure databases) for relevant studies. We will also examine the reference lists or bibliographies of the available review articles and relevant meta-analyses for additional candidates. Case reports, case series, review articles, conference abstracts, animal studies or those performed in laboratory settings will be excluded. If the qualified study do not report the data available for data synthesis, we will contact the authors for the desired effect size and relevant information.

Main outcome(s): The primary endpoint: the absolute value of bone mineral density. The secondary endpoints: events regarding osteoporosis and fractures.

Quality assessment / Risk of bias analysis: The Newcastle–Ottawa Scale (NOS) for non-randomized studies will be utilized for methodological quality appraisal.

Strategy of data synthesis: Considering the heterogeneity of the study populations, we will calculate the pooled estimates and their confidence intervals (CIs) using the DerSimonian and Laird random-effects model. Between-study heterogeneity will be quantified using the I² statistics. For continuous outcomes (absolute value of BMD): standardized mean difference (SMD) and 95% CIs. For dichotomous outcomes (risk estimates of osteoporosis and fractures): estimated odds ratios (ORs) and 95% CI.

Subgroup analysis: According to the site of BMD measurement, study population, study design, geographic location, age of participants, body mass index, disease duration, potential osteoporotic/anti-osteoporotic drugs use, dual-energy X-ray absorptiometry manufacturers, and study quality according to NOS.

Sensibility analysis: We will perform a sensitivity analysis to evaluate the influence of each study on the overall effect by omitting them individually.

Country(ies) involved: Taiwan.

Keywords: psoriasis, psoriatic arthritis, bone mineral density, osteoporosis, fracture.

Contributions of each author:

Author 1 - Tai-Li Chen.

Author 2 - Jing-Wun Lu.

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