INPLASY PROTOCOL

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Conflicts of interest:
None.

Prevalence of Sarcopenia and Its Impact on Clinical Outcomes in Lumbar Degenerative Spine Disease: a Protocol for Systematic Review and Meta-analysis

Wu, WT[1]; Chang, KV[2].

Review question / Objective: **To analyze the prevalence of sarcopenia in patients with lumbar degenerative spine disease and to examine the impact of sarcopenia on the clinical outcomes.**
Condition being studied: **The prevalence of sarcopenia and its association with clinical outcomes (such as symptom severity and quality of life) in patients with lumbar degenerative spine disease.**
Information sources: **The main database for literature search will be PubMed (US National Library of Medicine) and Embase (Wolters Kluwer Ovid). The reference lists or bibliographies of the available review articles and meta-analyses will be scrutinized for additional candidates. Case reports, case series, conference abstracts, animal studies or those performed in laboratory settings will be excluded from the present meta-analysis.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 25 December 2020 and was last updated on 25 December 2020 (registration number INPLASY2020120123).

INTRODUCTION

Review question / Objective: **To analyze the prevalence of sarcopenia in patients with lumbar degenerative spine disease and to examine the impact of sarcopenia on the clinical outcomes.**

Condition being studied: **The prevalence of sarcopenia and its association with clinical outcomes (such as symptom severity and quality of life) in patients with lumbar degenerative spine disease.**

METHODS

Search strategy: The combinations of the following keywords will be used for literature search, including skeletal muscle, sarcopenia, frailty, low back pain, spinal stenosis, spondylolisthesis and lumbar degenerative disc disease.

Participant or population: Middle aged or old adults with or without lumbar degenerative spine disease.

Intervention: Exposure: patients with lumbar degenerative spine disease or sarcopenic participants in the group with lumbar degenerative spine disease.

Comparator: Non-exposure: matched controls without lumbar degenerative spine disease or non-sarcopenic participants in the group with lumbar degenerative spine disease.

Study designs to be included: Cross-sectional, case-control, or cohort studies.

Eligibility criteria: The inclusion criteria include: (1) original research investigating the association of sarcopenia with clinical outcomes in patients with degenerative lumbar spine disease; (2) inclusion of middle aged or older adults and (3) with a clearly defined protocol to differentiate participants with and those without sarcopenia.

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Main outcome(s): The primary endpoint: the prevalence of sarcopenia in patients with lumbar degenerative spine disease. The secondary endpoints: (1) relative risk of sarcopenia in lumbar degenerative spine disease and (2) impact of sarcopenia on intensity of low back and leg pain, quality of life and post-operative compilation rates

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

Strategy of data synthesis: The comparisons of the prevalence of sarcopenia between patients with lumbar degenerative spine disease and matched controls or clinical outcomes between patients with and those without sarcopenia will be quantified by using the risk ratio. The standardized mean difference (SMD) will be used to compare the continuous variables. The data pooling will be achieved by using the random effect model, considering differences of the patient population across the included studies. The potential existence of publication bias will be determined by the Egger test and visual inspection of the distributions of the effect size on the funnel plot. A two-sided P value <0.05 will be considered statistically significant and all the analyses will be implemented by using Comprehensive Meta-analysis Software v 3 (Biostat, Englewood, NJ).

Subgroup analysis: A subgroup analysis will be performed based on the different diagnostic criteria of sarcopenia.

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

Language: No limitation of languages.

Country(ies) involved: Taiwan.

Keywords: Sarcopenia, frailty, lumbar spondylosis, spinal stenosis, aging.

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