INPLASY PROTOCOL

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Interaction risk between sarcopenia and osteoporosis or low bone mineral density: A systematic review and meta-analysis

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Review question / Objective: Does sarcopenia significantly increase the risk of low bone mineral density or osteoporosis, and vice versa?

Condition being studied: To systematically review studies on the association between sarcopenia and low bone mineral density or osteoporosis.

Strategy of data synthesis: We systematically searched PubMed and Embase (from their inception to April 1, 2020), with no publication type or language restrictions, for studies conducted in humans on the association between sarcopenia and osteoporosis or LBMD. Our core search consisted of the following keywords: "sarcopenia", "osteoporosis", "osteopenia", and "low bone mineral density".

INTRODUCTION

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METHODS

Search strategy: Pubmed and Embase.

Participant or population: Older population.

Intervention: Sarcopenia and osteoporosis.

Comparator: Sarcopenia and osteoporosis.

Study designs to be included: Cross-sectional study, Case-control study, Cohort study, and others.

Eligibility criteria: We searched PubMed (from 1946 to April 1, 2020) and Embase (from 1947 to April 1, 2020) .for studies. There were no restrictions regarding the language or type of publication. The last search was conducted on April 1, 2020. A total of 1546 studies were retrieved, and after removing 263 duplicates, 1283 were identified. After screening the title and abstract, 1015 were excluded, and 268 necessitated reading of the full article. A total of 84 studies preliminarily met the eligibility criteria. After screening of the data, 60 studies fulfilled the established criteria.

Information sources: PubMed and Embase databases.

Main outcome(s): The primary outcome was the mutual risk between sarcopenia and low bone mineral density or osteoporosis.

Quality assessment / Risk of bias analysis: Begg rank correlation test.

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Subgroup analysis: Subgroup meta-analyses performed according to gender, study design type and region.

Sensibility analysis: Sensitivity analysis via sequential exclusion of single studies did not alter the overall combined results, indicating that the outcome was robust.

Country(ies) involved: Australia, Brazil, China, Korea, Morocco, Switzerl, Italy, USA, Poland, Belgium, Japan, Chile, LIthuanian, and UK.

Keywords: osteoporosis, sarcopenia, low bone mineral density.

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