INPLASY PROTOCOL

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Support: None

Review Stage at time of this submission: Data analysis.

Conflicts of interest:
None.

A Systematic Review of the Association between Vitamin D and Anti-Mullerian Hormone

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Review question / Objective: The current systematic review aims to evaluate and summarize the available evidence regarding the relationship between serum vitamin D and AMH as an ovarian reserve marker. Population: Adult females; Intervention: None or vitamin D supplementation; Comparison: Placebo; pre- and post-supplementation; Outcome: Serum AMH levels.

Condition being studied: Antimullerian hormone (AMH) is an ovarian biomarker which plays an important role in folliculogenesis. It is the most sensitive ovarian reserve marker and is widely used clinically in reproductive medicine.

INTRODUCTION

Review question / Objective: The current systematic review aims to evaluate and summarize the available evidence regarding the relationship between serum vitamin D and AMH as an ovarian reserve marker. Population: Adult females; Intervention: None or vitamin D supplementation; Comparison: Placebo; pre- and post-supplementation; Outcome: Serum AMH levels.

Rationale: Accumulating evidence from animal and human studies indicates a role for vitamin D in female reproductive physiology, and numerous clinical studies have suggested its potential benefit for

various aspects of human reproduction. Antimullerian hormone (AMH) is an ovarian biomarker which plays an important role in folliculogenesis. Currently, there is debate in the field whether vitamin D has the capacity to influence ovarian reserve as indicated by AMH.

Condition being studied: Antimullerian hormone (AMH) is an ovarian biomarker which plays an important role in folliculogenesis. It is the most sensitive ovarian reserve marker and is widely used clinically in reproductive medicine.

METHODS

Search strategy: A systematic literature search conducted in PubMed, EMBASE, Cochrane Library and ClinicalTrials for relevant publications in English to identify prospective and retrospective clinical studies assessing the relationship between vitamin D and AMH. The searches included combinations of the following MeSH and non-MeSH terms: ''vitamin D'', "25 hydroxyvitamin D", "AMH", "antimullerian hormone", "MIS", "mullerian inhibiting substance", and "ovarian reserve".

Participant or population: Adult females.

Intervention: Vitamin D.

Comparator: Placebo, or comparison of pre- and post-treatment values.

Study designs to be included: Restrospective, prospective.

Eligibility criteria: Studies assesing the relationship between serum vitamin D and serum AMH levels in adult females. Exclusion criteria: Studies involving nonhuman or only male populations, studies not investigating serum levels, review articles/letters.

Information sources: Pubmed, Embase, Cochrane Library and ClinicalTrials.gov.

Main outcome(s): Relationship between serum vitamin D and serum AMH levels.

Relationship between vitamin D supplementation and serum AMH levels.

Data management: Data will be extracted from relevant literature identified from search in publicly available databases. Extracted data will be entered in a table format.

Quality assessment / Risk of bias analysis: The cochrane risk of bias assessment tool was deployed to evaluate the method of randomization, allocation of concealment, blinding of participants, personnel and outcome assessment, incomplete outcome, selective reporting and other bias. Risk bias of each study was graded as low, unclear and high.

Strategy of data synthesis: Data were extracted from the articles text and tables and organized into tables in a systematic manner.

Subgroup analysis: Studies will be divided into observational and interventional.

Sensibility analysis: None

Language: English.

Country(ies) involved: USA.

Keywords: AMH, Vitamin D.

Contributions of each author:
Author 1 - Irene Moridi - Data Curation, Writing – Original Draft Preparation.
Author 2 - Alice Chen - Data Curation, Writing – Original Draft Preparation.
Author 3 - Reshef Tal - Data Curation, Writing – Original Draft Preparation.