

INPLASY PROTOCOL

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None declared.

Association of ADAMTS proteoglycanases downregulation with IVF-ET outcomes in patients with polycystic ovary syndrome: A systematic review and meta-analysis

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Review question / Objective: A disintegrin and metalloproteinase with thrombospondin-like motifs (ADAMTS) is involved in inflammation and fertility in women with polycystic ovary syndrome (PCOS). This study aims to assess the role of ADAMTS level in the outcomes of in vitro fertilization and embryo transfer (IVF-ET) in women with PCOS, using a meta-analytic approach.

Condition being studied: Several members of the a disintegrin and metalloproteinase with thrombospondin-like motifs (ADAMTS) family have been identified in growing follicles during ovulation and in the corpora lutea of several mammalian species. These findings indicate that the members at the proteoglycanase arm of the ADAMTS family were the most expressed. However, the expression of all members of the ADAMTS family during folliculogenesis, was not systematically explored. No systematic review or meta-analysis have been conducted to assess the role of ADAMTS levels in the outcome of IVF-ET in patients with PCOS.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 30 June 2022 and was last updated on 30 June 2022 (registration number INPLASY202260115).

INTRODUCTION

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METHODS

Search strategy: “Polycystic ovary syndrome”[Mesh] or “polycystic ovary syndrome” or “PCOS” and “ADAMTS Protein”[Mesh] or “ADAMTS” or “Aggrecanase-1” or “A Disintegrin And Metalloproteinase With Thrombospondin Motifs”.

Participant or population: All patients diagnosed with PCOS.

Intervention: Members of the ADAMTS family, including ADAMTS-1, ADAMTS-4, ADAMTS-5, ADAMTS-9, ADAMTS-19.

Comparator: ADAMTS level.

Study designs to be included: No restrictions were placed on study design.

Eligibility criteria: The inclusion criteria were as follows: (1) Patients: all patients diagnosed with PCOS; (2) Exposure: members of the ADAMTS family, including ADAMTS-1, ADAMTS-4, ADAMTS-5, ADAMTS-9, ADAMTS-19; (3) Comparison: ADAMTS level; (4) Outcomes: implantation, follicles punctured, oocytes retrieved, metaphase II oocytes, germinal vesicle oocytes, and oocyte recovery, oocyte maturity, fertilization, cleavage, good-quality embryo, blastocyst formation, and clinical pregnancy rates; and (5) Study design: no restrictions were placed on study design.

Information sources: Three databases (Web of Science, PubMed, and EmBase) and the Cochrane library.

Main outcome(s): implantation, follicles punctured, oocytes retrieved, metaphase II oocytes, germinal vesicle oocytes, and oocyte recovery, oocyte maturity, fertilization, cleavage, good-quality embryo, blastocyst formation, and clinical pregnancy rates.

Quality assessment / Risk of bias analysis: Newcastle-Ottawa Scale.

Strategy of data synthesis: The pooled effect estimates were calculated using the random-effects model, which considered the underlying differences across included studies

Subgroup analysis: None.

Sensitivity analysis: The robustness of pooled conclusions was assessed using a sensitivity analysis through sequential removal of individual studies

Country(ies) involved: China.

Keywords: ADAMTS; IVF-ET outcome; polycystic ovary syndrome; systematic review; meta-analysis.

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