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New evidence about malignant transformation of endometriosis - systematic review

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Keywords: endometriosis, malignant transformation, EAOC, clear cell adenocarcinoma, endometrioid adenocarcinoma , malignant transformation of endometriosi, cancer among endometriosi, endometriosi, ovarian cancer, new evidence about malignant transformation, malignant transformation, oncogenic pathway, uterus, cancer, disruption in chromatin remodeling, targets such as the mtor pathway, chromatin remodeling, mtor pathway, clear cell adenocarcinoma, activation of oncogenic pathway

Disclaimer

Not applicable.

Abstract

Background: Endometriosis is a disorder in which the presence of endometrial-like tissue is found outside the uterus and affects 5-15% of women. It may undergo malignant transformation, generally presenting with ovarian cancers of endometrioid and clear cell adenocarcinomas, in 0.5-1% of women. Genetic mutations lead to disruption in chromatin remodeling, particularly targeting ARID1A, and activation of oncogenic pathways, which include targets such as the mTOR pathway. *Methods:* The search in PubMed, Europe PMC, and Google Scholar will be done comprehensively using the keywords "endometriosis," "malignant transformation," and "cancer" for articles ever published until December 2024. Only those studies will be included that provided information specifically on the malignant transformation of endometriosis. Studies with a random diagnosis of cancer among endometriosis patients will be excluded. Data will be extracted by two authors using predefined criteria.

Image Attribution

Not applicable.

Guidelines

According to PRISMA 2020 checklist.

TITLE

The report is identified as a systematic review.

ABSTRACT

This research is written according to PRISMA 2020 checklist for Abstracts.
Title: The report is identified as a systematic review.
Background: An explicit statement of the main objective the review addresses is provided.
Methods: The inclusion and exclusion criteria for the review are specified. The information sources (e.g. databases, registers) used to identify studies and the date when each was last searched are specified. The methods used to assess risk of bias in the included studies are specified.

INTRODUCTION

The rationale for the review is described in the context of existing knowledge. An explicit statement of the objective the review addresses is provided.

Materials

This systematic review will be carried out strictly according to the guidance by the PRISMA Statement.

Data sources and Search Strategy

A systematic search of three major databases-PubMed, Europe PMC, and Google Scholar-will be performed with the keywords ''endometriosis, malignant transformation, cancer''. All available articles will be considered for this study until December 2024.

Eligibility Criteria for Articles of Inclusion

Articles have to be full-length research papers written in English, whereas abstracts presented at scientific meetings, case reports and review articles will be excluded. In addition, only those studies will be included that provide information specifically on the malignant transformation of endometriosis. Studies with a random diagnosis of cancer among endometriosis patients will be excluded. The quality and potential risk of bias for these studies will be assessed using the ROBINS-I tool.

Data Extraction

Specific data will be extracted from each publication in duplicate, including publication date, authorship, studied population, methodologies employed, criteria for inclusion or exclusion (I/E), sample type, and primary outcome measures.

Safety warnings

None to declare.

Ethics statement

Not applicable.

Introduction

1 Endometriosis is featured by the presence of endometrial-like tissue outside the uterus and affects approximately 5%-15% of women of reproductive age. Though usually benign, about 0.5%-1% of cases undergo malignant transformation, mostly into ovarian cancers, including endometrioid and clear cell adenocarcinomas.
Genetic mutations, most notably in the ARID1A gene, are involved in the pathogenesis of EAOC; these disrupt chromatin remodeling and activate oncogenic pathways such as PI3K/Akt.
Besides, the implication of the mTOR signaling pathway in the malignant transformation of endometriosis suggests potential therapeutic targets.
Postmenopausal endometriosis is less frequent, but it is clinically challenging due to its malignant transformation potential. Prolonged administration of estrogen-only HRT and history of definitive gynecological surgery are some of the risk factors associated with the condition.
This systematic review seeks to synthesize recent findings in the malignant transformation of endometriosis regarding genetic and molecular mechanisms, clinical risk factors, and potential therapeutic interventions. The more these processes are understood, the better the diagnosis of early detection and the treatment approaches against persons at risk for EAOC.

Materials and Methods

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Results

3 Results will be presented in a standardized fashion and the publication and author data, demographics, metrics, and key findings of the included studies will be tabulated to optimize readability.

Discussion

4 A critical appraisal of the included studies will be undertaken.

Conclusion

5 In this section, we will recapitulate the key findings of our research.

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