

CHRONIC ENDOMETRITIS AND RECURRENT REPRODUCTIVE FAILURE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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INTRODUCTION

The endometrium holds a crucial role in reproduction by supporting blastocyst adhesion, cytotrophoblast invasion and fetal development. Among the various uterine disorders, endometritis, particularly chronic endometritis (CE), has gained attention due to its association with adverse reproductive outcomes (recurrent pregnancy loss (RPL), recurrent implantation failure (RIF), and infertility). The association between CE and adverse reproductive outcomes stresses the necessity for comprehensive diagnostic and therapeutic strategies to optimize fertility outcomes and support individuals in their journey towards parenthood.

OBJECTIVES

To explore the relationship between CE and reproductive disorders.

METHODS

Following PRISMA guidelines, a systematic review and meta-analysis using published data from 1990 to 2024 were carried out. All studies examining the correlation between chronic endometritis (CE) and recurrent pregnancy loss (RPL), infertility, and repeated implantation failure (RIF) were included in the review. However, due to the absence of standardized diagnostic criteria for chronic endometritis and the varying definitions across the included studies, CE was identified based on the specific parameters outlined in each article reviewed. Randomized controlled trials, cohort studies, case-control studies, and cross-sectional studies were deemed suitable for scientific analysis. The research and selection criteria were restricted to articles published in English from 1990 onwards. Systematic reviews, meta-analyses, reviews, case reports, notes or letters, book chapters, errata, and conference abstracts were excluded. Only studies involving human participants were included, while those involving animals were excluded.

RESULTS

A population of 1,038 women was included. Regarding CE-infertility association, a positive correlation was found, with 19.46% CE rate in infertile women compared to 7.7% in controls (OR: 2.96, 95% CI 1.53-5.72, p 0.001). No significant association was observed between RIF and CE (OR: 1.10, 95% CI 0.26- 4.61, p 0.90), CE rates in both groups were relatively comparable, with 6.35% in women with RIF and 5.8% in controls. On the opposite, a strong association between CE and RPL was found, reporting a CE rate of 37.6% in RPL cases compared to 16.4% in controls (OR: 3.59, 95% CI 2.46-5.24, p < 0.00001).

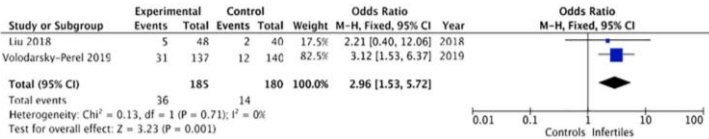


FIGURE 4
Forest plot for chronic endometritis and infertility.

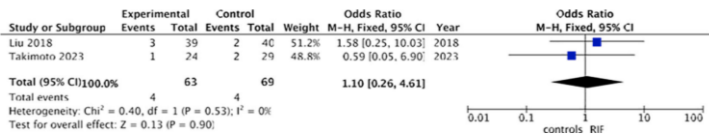


FIGURE 5
Forest plot for chronic endometritis and repeated implantation failure (RIF).

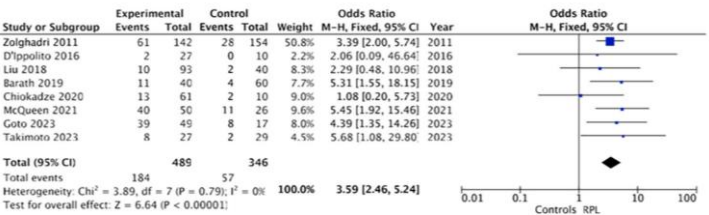


FIGURE 6
Forest plot for chronic endometritis and recurrent pregnancy loss (RPL).

CONCLUSIONS

CE appears to be associated to infertility and RPL, while no significant association was noted in cases of RIF.

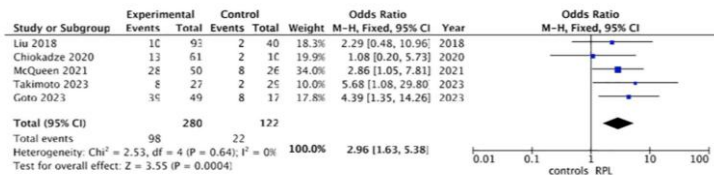


FIGURE 7
Forest plot for sensitivity analysis: CE diagnosed with IHC CD138 and RPL.



FIGURE 8
Forest plot for sensitivity analysis: CE and recurrent pregnancy loss defined as two or more spontaneous pregnancy losses.

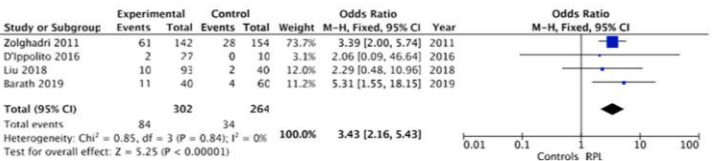


FIGURE 9
Forest plot for sensitivity analysis: CE and Recurrent pregnancy loss defined as three or more spontaneous pregnancy losses.