

A Systematic Review and Meta-analysis of Blastocyst-Stage Embryo Thaw Outcomes, With and Without a Corpus Luteum

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Background

- There is ongoing debate regarding the optimal endometrial preparation to optimise live birth rate (LBR) in thaw cycles
- Several studies have suggested the IVF protocols which bypass the formation of a corpus luteum (CL) have more unfavourable outcomes^{1,2,3}

Aim

- We performed a literature review and meta-analysis to determine if the presence of a CL impacts pregnancy outcomes

Method

- The review (PROSPERO: CRD42020209583) was conducted searching MEDLINE, EMBASE, CINAHL and CENTRAL for studies regarding blastocyst-embryo thaw cycles, comparing protocols with and without a CL

Results

- Nine publications were included in the final analysis
- The rates of positive b-hCG results (RR1.0, 95%CI 0.95-1.05) and clinical pregnancies (RR 1.06, 95%CI 0.96-1.18) were comparable between the two groups
- Live birth rates (LBR) were higher in thaw-cycles with CL (RR1.14, 95%CI 1.06-1.22)
- Analysis of pregnancy losses demonstrated that both biochemical pregnancy (RR0.71, 95%CI 0.62-0.82) and miscarriage rates (RR0.72, 95%CI 0.62-0.83) were increased in cycles without a CL

Conclusion

- This meta-analysis shows that blastocyst thaw-cycles involving a CL yielded significantly better treatment outcomes in terms of LBRs and pregnancy losses
- This is biologically plausible, possibly related to the complex activity of a CL
- The suboptimal quality and quantity of published studies is a limitation of this study. Additional randomised controlled trials with blastocysts embryos are required to further explore these findings

References

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