عنوان مقاله:

The Composition of Human Uterine Fluid Compared to Clinically Used Preimplantation Embryo Culture Media

محل انتشار:

بیستمین کنگره بین‌المللی بیولوژی تولید مثل و پانزدهمین کنگره بین‌المللی سلول های بنیادی (سال: 1398)

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خلاصه مقاله:

Background: Embryo culture media used in IVF not only af-fect IVF efficacy but also have a direct effect on child outcomes. Composition analysis of routinely used embryo culture media showed that no two media had the same composition, making clear that the optimal composition has not been determined yet. Considering that the in vivo conditions could provide valuable information for the improvement of currently used embryo culture media, we analyzed the composition of human uterine fluid.Materials and Methods: We determined the composition of human uterine fluid of 22 non stimulated women on the third day of the luteal phase of the menstrual cycle when the endo-metrium is considered to become receptive for embryo implan-tation. Fertile women of reproductive age with normal uterine anatomy were included. We compared our findings to the com-position of 15 human preimplantation embryo culture media that are commonly used in IVF. In total, 37 components includ-ing ions, metabolites, immunoglobulins, proteins and amino acids were measured. The effects of potential confounders, such as female age and BMI, were evaluated using linear mixed models and the Mann-Whitney U test was used for comparing the concentrations of different components in uterine fluid with concentrations in culture mediaResults: Compared to the embryo culture media, calcium, phosphate, lactate, pyruvate, albumin and 21 amino acids were present at significantly different concentrations in human uter-ine fluid. Immunoglobulins, citrulline, ornithine and uric acid were absent from all analyzed culture media, while being pre-sent in uterine fluid. The mean concentration and variation of all 37 components in uterine fluid seemed not to be affected by age or BMIConclusion: The concentration of 32 analysed components dif-fered between human uterine fluid and human embryo culture media. These differences suggest that current in vitro culture conditions might be suboptimal to provide support for the de-veloping embryo in vitro. Our findings provide valuable infor-mation for the improvement of embryo culture media

کلمات کلیدی:

Human Uterine Fluid Composition, Human Preim-plantation Embryology, Embryo Culture Media, IVF