Role of Follicular Fluid in Decidualization Induction of Endometrial Stromal Cells

Fatemeh Shirvanizadeh[1], Akram Eidi[1*], Maryam Hafezi[2], Poopak Eftekhari-Yazdi[3*]

[1]Department of Biology, Science and Research Branch, Islamic Azad University, Tehran, Iran.

[2]Department of Endocrinology and Female Infertility, Reproductive Biomedicine Research Center, Royan Institute for Reproductive Biomedicine, ACECR, Tehran, Iran.

[3]Department of Embryology, Reproductive Biomedicine Research Center, Royan Institute for Reproductive Biomedicine, ACECR, Tehran, Iran.

[*]Corresponding authors: Emails: eftekhari@royaninstitute.org, eidi@srbiau.ac.ir

INTRODUCTION

Polycystic ovary syndrome (PCOS) is the most common endocrine disorder in women of reproductive age. Induction of inflammatory processes increases the rate of decidualization, which is one of the important stages of implantation. Since PCOS is an inflammatory disease, the follicular fluid of these patients has amounts of pro-inflammatory cytokines.

Methods

In this prospective control case study, 40 patients under 35 years referred to Royan Institute (Tehran, Iran) who were candidates for assisted reproductive methods were included in the study, and were divided into four groups: PCOS with AO, PCOS without AO, non-PCOS with AO and non-PCOS without AO. Follicular fluid (FF) samples were collected from each patient. Then follicular fluid with 50% dilution was added to the culture medium of endometrial stromal cells (ESC) in all 4 groups. Then the rate of decellularization, was measured by examining decidual markers (IGFBP-1, PRL) by Eliza kit.

RESULTS

Protein analysis showed that the non-PCOS group without AO has the highest decidualization potential and has higher expression of decidualization markers ($P \leq 0.05$). After that, groups with an inflammatory phenotype of PCOS or abdominal obesity showed the highest expression of decidual pathway markers.

CONCLUSION

Adding the FF of non-PCOS without AO patients to the culture medium of endometrial stromal cells with normal uterus was able to provide the primary inflammation necessary to induce decidualization. It seems that the use of FF can be a suitable alternative for endometrial scratch.

REFRENCESS

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CONTACT:

Corresponding authors:

*Department of Embryology, Reproductive Biomedicine Research Center, Royan Institute for Reproductive Biomedicine, ACECR, P.O.BOX: 16635-148, Tehran, Iran, Tel: +98 21 22339901, Fax: +98 21 22339916.

* Department of Biology, Science and Research Branch, Islamic Azad University, P.O. Box 16535-446, Tehran, Iran, Tel: +98 9123380064, Fax: +9821 44865939

Emails: eftekhari@royaninstitute.org, eidi@srbiau.ac.ir

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