Abstract citation ID: deac107.170

P-175  Relationship Between oocytes with sERC and Ploidy

M. Tokudome1, Y. Mizobe1, Y. Kuwatsuru1, Y. Kuroki1, Y. Fukumoto1, H. Moewaki1, M. Tabira1, T. Iwakawa1, K. Takeuchi1

1Takeuchi Ladies Clinic, Center for Reproductive Medicine, 502-2 Higashinochida-Aira-cho, Kagoshima 899-5421, Japan

Study question: We investigated the effects of the presence or absence of sERC on subsequent embryonic development and the ploidy of embryos.

Summary answer: The acquisition rates for euploid embryos were similar to those for the embryos derived from oocytes without smooth endoplasmic reticulum cluster (sERC).

What is known already: The effects of the presence of sERC have been reported on embryonic development processes and pregnancy rate after embryo transfer (ET). In this study, we investigated the effects of the presence of sERC not only on embryonic development and pregnancy rate, but also on the ploidy of embryos from the oocytes with sERC.

Study design, size, duration: The subjects comprised women from whom oocytes were collected from January 2019 to November 2021. The group with the oocytes with sERC was designated as sERC(+), and the other group without sERC as sERC(-).

Participants/materials, setting, methods: Retrospective analysis was performed using a time-lapse system (EmbryoScope+). They were divided into two groups according to the presence of sERC. The groups were compared for fertilization rate, degeneration rate, abnormal fertilization rate (1PN, 3PN, 2.1PN), blastocyst rate, and good-quality-blastocyst rate after ICSI. The prognosis of the transferred embryos was followed up on. In addition, the embryos that were subjected to NGS analysis were investigated for effects of the presence of sERC on their ploidies.

Main results and the role of chance: The sERC(+) group exhibited a significantly lower fertilization rate (74.8%) compared to that of the sERC(-) group (82.4%, P < 0.01). The sERC(+) group exhibited a significantly higher abnormal fertilization rate (14.8%) compared to that of the sERC(-) group (6.6%, P < 0.01). The sERC(+) group showed a significantly higher blastocyst formation rate (57.4%) compared to the sERC(-) group (45.2%, P < 0.01). With respect to after ET prognosis, eight women gave birth with no confirmed congenital anomaly. At the very least, the presence of sERC has been shown to have no effect on childbirth. The investigation on ploidy showed that the oocytes in the sERC(+) group included 24.2% euploidy (8/33), 9.1% mosaic (3/33), and 66.7% aneuploidy (22/33) embryos, while the oocytes in the sERC(-) group included 30.4% euploidy (137/451), 12.4% mosaic (56/451), and 57.2% aneuploidy (258/451) embryos. Thus, there was no difference due to the presence of sERC. Three out of the eight euploid blastocysts in the sERC(+) group had been transferred, one of which reached childbirth.

Limitations, reasons for caution: PGT-A is still under clinical research in Japan.

Wider implications of the findings: Many reports suggested that oocytes with sERC can be used as embryos appropriate for transfer when they develop into blastocysts. The investigation into the ploidy of sERC(+) derived...
blastos in this study confirmed that the presence of sERC did not affect the ploidy of embryos and that these embryos were transferable.

**Trial registration number:** not applicable