CONCLUSIONS: Single blastocyst transfer in the U.S. is associated with higher cMLBR than cleavage stage embryo transfer in Finland. Probable reasons for these findings are high selectivity of patients for blastocyst transfer compared to Finland where embryos were lower use of gonadotropins during stimulation and more embryos available for transfer, compared to Finnish cleavage stage patients, who are selected for eSET on a much wider basis.

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DEVELOPMENT OF NEW PROCEDURE TO REDUCE THE AMOUNT OF RECIPIENT CYTOPLASM (MITOCHONDRIA) AT THE M-II KARYOPLAST TRANSFER FOR THE TREATMENT OF MITOCHONDRIAL DISEASES.

A. Tanaka,a M. Nagayoshi,b Y. Takemoto,c H. Kusunoki,c S. Watanabe,c aSaint Mother Hospital, Kita-kyusyu, Japan; bFaunal Diversity Sciences, Graduate School of Agriculture, Kobe University, Kobe, Japan; cAnatomical Science, Hiroasaki University Graduate School of Medicine, Hiroasaki, Japan.

OBJECTIVE: The mitochondrial diseases caused by mitochondrial DNA mutation are inherited through the maternal cytoplasm. The radical treatment for this is the exchange of patient’s cytoplasm for a healthy one (donor). Through this procedure decreasing the amount of transferred cytoplasm surrounding the M-II chromosome is vital to avoid the lack phenomenon. We developed a new technique to decrease the amount of transferred cytoplasm by approximately one third of the conventional one.

DESIGN: Retrospective embryonic development following newly developed oocyte plasmic exchange.

MATERIALS AND METHODS: We look for the chromosome lump centrally located in the transparent, round substance, which is the spindle with the aid of an inverted microscope (Nikon, TE300, Japan) equipped with a Normarski differential interference contrast system. After confirmation of the localization of M-II chromosome the oocytes with opened zona pellucida were placed in an HTF microdrop containing 5 μg/ml cytochalasin B (CCB) for 10 minutes. After obtaining patients’ consent we used mature M-II oocytes collected following GnRH-a long protocol. Using a Piezo manipulator (PRIME TECH LTD.: PMM-4G), the karyoplast was aspirated using a 10-12 mm inner diameter pipette with a vertical cut and then a 5-6 μm inner diameter pipette with a vertical cut surface. Then the first karyoplast in the CCB medium was aspirated into the smaller pipette and the M-II chromosome with surrounding transparent part, believed to be spindle was isolated from the remaining cytoplasm by shaking the pipette. By repeating this procedure mostly M-II chromosome with spindles could be isolated very safely.

The second karyoplast was transferred into the HTF medium for 10-15 minutes and aspirated into the aspiration pipette. The membrane of the second karyoplast was easily broken and this M-II chromosome was injected directly into the enucleated self oocyte using a Piezo manipulator. After two hours incubation in the medium ICSI was performed. Mitochondrial DNA in the first and second smaller karyoplasts was measured by quantitative PCR.

RESULTS:
1. The percentage of successful first and second karyoplast was 100% (25/25), 92.0% (23/25). The amount of cytoplasm in second karyoplast decreased to approximately 10% of the first karyoplast. MT-DNA in the first karyoplast and second karyoplast were 7.05±2.31 and 0.76±0.85 in comparison with the set point of 100 in the whole M-II cytoplasm measured by real time PCR.

Fertilization, cleavage stage Finnish cycles (184.3±22.3, P<0.0001) was constituted only 3.7% of all fresh cycles.

The estimated number of cleavage stage transfer cycles was 184.3, P<0.0001; high eSET use: 223.8, P<0.0001).

OBJECTIVE: Evidence-based treatment options for women who fail to achieve a pregnancy with the transfer of morphologically normal embryos are limited. Endometrial disruption performed in the luteal phase preceding a transfer cycle has been proposed as an intervention to enhance pregnancy rates in these patients. While small prospective trials have shown benefit, the impact of this intervention on subsequent endometrial proliferation has not been rigorously evaluated. As an added safety measure prior to offering this technique, we sought to determine whether performing endometrial disruption would impact subsequent endometrial proliferation.

DESIGN: Prospective, Paired.

MATERIALS AND METHODS: IVF patients aged 21-42 with normal ovarian reserve and normal endometrial cavities who were undergoing a planned freeze-all cycle were enrolled. A total of 208 women underwent an endometrial disruption via pipelle biopsy 6 days after oocyte retrieval. With the subsequent menstrual patients immediately initiated a programmed frozen embryo transfer (FET) cycle with escalating doses of oral estradiol tablets. After at least 12 days of estradiol intake, intramuscular progesterone in oil was initiated. The endometrial thickness as measured by ultrasound on the day of hCG or GnRH agonist trigger in the fresh IVF cycle was compared to the maximal endometrial thickness in the subsequent frozen FET. A paired t-Test was used and a P-value of 0.05 was considered statistically significant.

RESULTS: The mean endometrial thickness in the fresh cycle was 10±2.0 mm and in the FET was 10±2.2 mm (P=0.7). More patients failed to attain at least a 7 mm thickness in the fresh cycle (13 vs. 5), a relatively rare occurrence in each group which was not significantly different (P=0.06). The vast majority of patients attained a trilaminar endometrial pattern in both the fresh and frozen cycles.

CONCLUSIONS: In women with normal endometrial cavities, performing a pipelle endometrial biopsy after oocyte retrieval and immediately prior to a planned FET does not impact the subsequent proliferation of the endometrium. While further prospective data on the efficacy of this intervention is needed, clinicians and patients can be reassured that there does not appear to be risk of impairing endometrial proliferation with the disruption technique.

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PRECONCEPTION LIFESTYLES AND LIFESTYLE MODIFICATION AMONG WOMEN SEEKING FOR INFERTILITY.

L. S. Joelsson,a A. Berglund,a A. Rosenblad,b T. Tyden,c aDepartment of Women’s and Children’s, Uppsala University, Uppsala, Sweden; bDepartment of Public Health and Caring Sciences, Uppsala University, Uppsala, Sweden; cCentre for Fertility, Uppsala University, Uppsala, Sweden.

OBJECTIVE: To study lifestyle behaviors and demographic background of women seeking for infertility.

DESIGN: A cross-sectional study; participants completed a self reported questionnaire.

MATERIALS AND METHODS: Women (n=747), aged 19-42 were recruited on their first visit to fertility clinics (n=10) in mid-Sweden during May 2013 to October 2014. Main outcome measures were: lifestyles behaviors, lifestyle changes and demographic background among women during the time they tried to conceive. Data were analyzed with logistic regression, t-test and χ2-test.

RESULTS: A total of 447 women (62%) completed the questionnaire. Mean duration of infertility was 1.8 years, during which 17% used tobacco, 13 % consumed alcohol weekly, 14% had more than three cups of coffee/day. Six out of ten women took the recommended dose of folic acid when they started to conceive, but 11% stopped taking folic acid after some time. Intake of folic acid was more common among women with higher level of education (P<0.05). This sample 24 % were overweight and 13 % were obese. Obese women exercised more and changed more frequently to healthy diets compared to normal weight women ( odds ratio 7.43, 95 % CI 3.7-14.9).

OR 1.91, 95% CI 1.68-2.16). Gonadotropin dose per oocyte was higher in cleavage stage Finnish cycles (184.3±141.0 IU), compared with U.S. blastocyst cycles (low eSET use: 154.2±129.5, P<0.0001; high eSET use: 158.1±223.8, P<0.0001). The estimated number of cleavage stage transfer cycles was 184.3, P<0.0001; high eSET use: 223.8, P<0.0001). The estimated number of cleavage stage transfer cycles was 184.3, P<0.0001; high eSET use: 223.8, P<0.0001).