rate than those with non-eSET (79/115 (68.7%) vs 99/214 (46.3%), respectively, P<0.0001) but were also younger at retrieval than those with non-eSET (mean age 30.9±4.7 years vs 34.0±4.7 years, respectively, P<0.0001), suggesting potential confounding effects. Logistic regression was used to examine differences between eSET and non-eSET while controlling for age at retrieval, revealing that eSET had significantly greater probability of clinical pregnancy (OR=2.1, P=0.0048) while age was simultaneously significant in predicting clinical pregnancy (OR=8.0, P=0.0007). Among patients <35 years old at retrieval, eSET had a significantly greater clinical pregnancy rate than non-eSET (64/92 (69.6%) vs 66/118 (55.9%), respectively, P=0.0435).

CONCLUSIONS: Historical SET success rates are not representative of those with eSET. Centers considering their own historical results may be unduly discouraged from using eSET. This might result in eSET being under-recommended and under-utilized.

**P-350** Tuesday, October 20, 2015

**THE COMPARISON OF FACTORS AFFECTING THE CHANCE OF CLINICAL PREGNANCY VS. ACHIEVING TOP QUALITY EMBRYO IN ICSI CYCLES: USING A NEW RANKING ALGORITHM (RIMARC).** B. Demir,[a] H. Guvenir,[b] I. Kahyaoglu,[c] A. Turkkani,[d] I. Kaplanaoglu,[c] L. Mollamahmutoglu.[c] [a]Obstetrics and Gynaecology, Etlik Zubeyde Hanim Women's Health Teaching and Research Hospital, Ankara, Turkey; [b]Computer Engineering, Bilkent University, Ankara, Turkey; [c]Etlik Zubeyde Hanim Women's Health Teaching and Research Hospital, Ankara, Turkey; [d]TOBB University, School of Medicine, Ankara, Turkey.

OBJECTIVE: Machine learning techniques can be used to estimate the probability of success rate using patient characteristics and ovarian hyperstimulation results in ART cycles. Recently, a machine learning algorithm, called RIMARC, has been shown to learn the importance of parameters as weights and their particular values, or range of values that are affective(1). In this study, we used the RIMARC algorithm to compare the importance of factors affecting clinical pregnancy rate vs. top quality embryos in ICSI cycles.

DESIGN: Longitudinal cohort.

MATERIALS AND METHODS: A total of 2544 fresh cycles are included in this study. Two datasets are constructed, one for clinical pregnancy and the other for top quality embryos. The first dataset had 136 and the second had 122 parameters. For the sake of fair comparison, in the first dataset the success is defined as clinical pregnancy following day 3-5 embryo transfers; in the second, the success is defined as achieving the grade 1-2 embryos in day 3-5.

RESULTS: The Areas Under the Curve were 0.833 and 0.895 for clinical pregnancy and top quality embryo, respectively. The rates of clinical pregnancy and achieving the top quality embryos per started cycle were 21.7% (553/2544) and 56.9% (1447/2544), respectively. The most important factors affecting the success of clinical pregnancy, in decreasing order of weight are found to be no of pronucleus, no of mature oocytes, hCG day progesterone level, total antral follicle count, ovulation induction protocol and female age. For top quality embryo, they are no of pronucleus, no of mature oocytes, hCG day E2 level, total antral follicle count, oocyte quality index, day 3 FSH level (Table).

CONCLUSIONS: Importance of factors affecting the success of clinical pregnancy are different than that of top quality embryos. Also the cut-off values for the success are different for both groups.

Examples for the weights of factors and their cut-off values for success for both groups.

| | Clinical pregnancy | | Top quality embryos | |
|---|---|---|---|---|
| | Weight (%) | Cut-off value | Weight (%) | Cut-off value |
| No. of pronucleus | 35.7 | 2 | 61.3 | 1 |
| No. of mature oocytes | 28.8 | 4 | 48.9 | 5 |
| Progesterone level on the hCG day (ng/ml) | 28.3 | 0.87 | 20.3 | 1.34 |
| Estradiol level on the hCG day (pg/ml) | 18.8 | 1114.25 | 31.3 | 1923.75 |
| Female age (y) | 16.7 | 39 | 16.6 | 40 |
| Oocyte quality index | 15.6 | 4.3 | 29.3 | 4.28 |

Reference:

1. H. Altay Güvenir, Murat Kurtcephe, Ranking Instances by Maximizing the Area under ROC Curve, IEEE Transactions on Knowledge and Data Engineering, 2013;25(10):2356-2366.

## OUTCOME PREDICTORS - LAB - ART

**P-351** Tuesday, October 20, 2015

**OOCYTE SURVIVAL RATE HIGHLY AFFECT THE OUTCOMES OF A OOCYTE BANK FOR AN EGG DONATION PROGRAM.** T. S. Domingues,[a,b] R. Mazetto,[a] A. P. Aquino,[a] B. Barros,[c] J. R. Alegretti,[a] P. C. Serafini,[d,a] E. L. Motta.[a,b] [a]Huntington Medicina Reprodutiva, Sao Paulo, Brazil; [b]Ginecologia, Escola Paulista de Medicina - Universidade Federal de Sao Paulo, Sao Paulo, Brazil; [c]Huntington Medicina Reprodutiva, Sào Paulo, Brazil; [d]Discipline of Ginecolgy, Hospital das Clinicas, Un, Sao Paulo, Brazil.

OBJECTIVE: Oocyte vitrification was used as an experimental protocol for fertility preservation until recently. Improvements in the oocyte cryobiology and its methods over the past few years are responsible for its routine use in in vitro fertilization (IVF) cycles. The aim of this study was to evaluate the relation of the survival rate at oocyte warm process and the outcomes in a Banked Donor Eggs program.

DESIGN: Observational retrospective cohort study.

MATERIALS AND METHODS: This study included 364 oocyte donation cycles, with donors at the mean age of 24.4±3.9 years old, carried out from 2013 to 2015. All oocytes were vitrified and warmed using Kitazato protocols following manufacturer directions. A maximum of 4 oocytes are loaded in each Cryotop for cryopreservation. Recipients underwent endometrium preparation with estradiol plus micronized progesterone according to our standard protocols. Warmed oocytes were fertilized by ICSI, cultured and transferred in blastocyst stage on days 5 or 6.

RESULTS: Recipients were 42.0±4.8 years of age with the mean number of 8.9±2.3 warmed eggs. The oocyte survival and fertilization rates were 90.0% and 76.8% respectively, resulting in 54.9% of fertilized oocytes, which developed to blastocyst stage and 2.1±0.5 embryos were transferred per patient. Implantation rate was 28.2% and pregnancy was 55.9%. To evaluate the influence of all variables, we performed a logistic multiple regression analysis and we observed a positive association of oocyte survival rate (OR: 1.05, p<0.001) and blastocyst rate (OR: 1.01, p=0.03) in the pregnancy chance, adjusted to donor age, recipient age, endometrium thickness, number of oocytes warmed and number of embryos transferred. The oocyte survival rate from banked donor eggs were determinant to patients who become pregnant (92.6%) compared to those who failed (87.3%, p<0.001).

CONCLUSIONS: The vitrification has advanced the expectations in routine clinical practice in the IVF laboratory, suggesting the vitrified oocyte bank is a safe and worth method for patients receiving oocyte donation. However, there are inconsistencies regard to survival rate and fertility outcome since this is a new and developing technology. Our results shown the efficiency of oocytes warming, represented by warmed oocytes survival rate, is related to success in fertilization, implantation and pregnancy, indicating the technique approach during warming is essential for subsequent outcomes.

**P-352** Tuesday, October 20, 2015

**NON-INVASIVE ANALYSIS OF SECRETOME PARAMETERS IN SPENT BLASTOCYST CULTURE MEDIA USING MALDI-TOF MS CAN IDENTIFY ANEUPLOID BLASTOCYSTS: A POTENTIAL ALTERNATIVE TO PREIMPLANTATION GENETIC SCREENING..** F. Sharara,[a] R. K. Iles,[b] S. A. Butler.[b] [a]Virginia Center for Reproductive Medicine, Reston, VA; [b]MAP Diagnostics, London, United Kingdom.

OBJECTIVE: To interpret mass spectral differences between aneuploid blastocysts and euploid blastocysts by non-invasive proteomic analysis of spent blastocyst culture media by MALDI ToF MS.

DESIGN: Prospective pilot study.

MATERIALS AND METHODS: Spent culture media from blastocysts in culture prior to embryo transfer were collected as part of 40 routine ART