

quality (n=78), were more likely to be euploid than non-freeze quality blastocysts (n=369) (64.1% vs., 43.0%, respectively; P<0.01). Transfer of a freeze quality blastocysts resulted in higher implantation rates (94.1% vs., 60.0%, respectively; P=0.06) but not in higher ongoing pregnancy rates (64.7% vs. 51.4%, respectively; P = 0.11). Trophoblast-quality grades were significantly and directly correlated to the euploidy rate (P<0.01). ICM-quality grades trended towards a similar effect on the euploidy rate (P = 0.08). The letter-specific trophoblast- and ICM-quality grades did not have an effect on implantation or ongoing pregnancy rates.

CONCLUSIONS: With the increased use of PGS and the dramatic improvement in blastocyst cryosurvival after vitrification, embryos that would not have been frozen before are now routinely cryopreserved. This study suggests that a significant portion of blastocysts that would not have been considered for cryopreservation in the past are actually euploid and can now survive newer vitrification techniques. While there seems to be a positive relationship between good-quality grades and ploidy, a significant number of embryos below the traditional freeze quality grades still result in successful implantations and ongoing pregnancies.

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THEN AND NOW: ARE PAST IVF EXPERIENCES ASSOCIATED WITH CURRENT PREFERENCES REGARDING ELECTIVE SINGLE EMBRYO TRANSFER? J. D. Kapfhamer,^a K. M. Summers,^a G. Ryan,^a E. M. Munch,^a B. Collura,^b G. D. Adamson.^c ^aUniversity of Iowa Carver College of Medicine, Iowa City, IA; ^bRESOLVE: The National Infertility Association, McLean, VA; ^cPAMF Fertility Physicians of Northern California, Saratoga, CA.

OBJECTIVE: Previous experiences with fertility treatment and pregnancy outcomes may influence the likelihood of a patient choosing elective single embryo transfer (eSET). Our objective was to investigate whether desire to undergo eSET is associated with previous IVF experiences.

DESIGN: Retrospective descriptive analysis of on-line cross-sectional survey.

MATERIALS AND METHODS: An anonymous survey regarding eSET preferences and experiences was distributed through social media over a five-week span in 2014. This study focused on survey participants who completed at least one IVF cycle with embryo(s) transferred or were planning to undergo IVF. Respondents self-selected into one of five mutually exclusive groups based on IVF treatment history and outcomes (see Results for description of these groups). Outcome variables included preference for single embryo transfer (defined as transferring one embryo when multiple were available) vs. multiple embryo transfer (MET), and potential likelihood of undergoing multifetal reduction if advised by a provider. Participants with a multiple birth were excluded, as eSET preference data were missing. Bivariate analyses were performed using chi-squared for comparison of proportions among groups. Significant associations (p<.05) were included in a subsequent logistic regression analysis.

RESULTS: 759 of 888 participants met inclusion criteria. Six percent were planning for an IVF cycle (Group 1), 16% were pregnant for the first time as a result of IVF (Group 2), 37% had completed at least 1 IVF cycle with no resulting births (Group 3), and 41% had at least one singleton birth and no multiple births from IVF (Group 4). Compared to Group 3 (no IVF births), participants in Group 4 (at least one singleton IVF birth) were more likely to prefer eSET (OR 1.67[1.06-2.64]). Participants in Group 1 (planning for IVF) would be more likely to consider multifetal reduction if recommended by a physician (OR 2.15 [1.09-4.25]) than those in Group 3 (no IVF births). No other inter-group differences were seen.

CONCLUSIONS: Patients with at least one live birth resulting from IVF may be more likely to elect eSET, possibly reflecting the increased psychological pressure of an unsuccessful IVF cycle. Patients early in infertility treatment may be most likely to consider multifetal reduction.

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ONE VS. TWO: PATIENT PERSPECTIVES ON ELECTIVE SINGLE EMBRYO TRANSFER (ESET). M. D. Werner, M. Costantini, J. M. Franasiak, C. R. Juneau, T. L. Metzgar, C. V. Reda, R. T. Scott. RMA, NJ, NJ.

OBJECTIVE: To determine patients' perspectives and attitudes regarding eSET after the outcome of an embryo transfer is known. This approach gains

novel insight on patient choices in an effort to identify barriers to eSET and improve patient counseling.

DESIGN: Prospective.

MATERIALS AND METHODS: Patients ≤42 years old who had previously completed a single or double blastocyst transfer (DET) as at a single IVF center were offered participation. Data were collected via an IRB approved HIPPA compliant electronic survey.

RESULTS: Of the 774 patients contacted via email, 235 completed the survey. The mean age was 34.1±4.0 years and 92.8% had delivered in the treatment cycle. 33.2% (N=78) of patients had completed a SET and 85.9% (N=67) of these delivered a singleton. 66.8% (N=157) completed a DET: 51.6% (N=81) of delivered a singleton and 44.6% (n=70) delivered twins. There were no deliveries of monozygotic twins or triplets. 71.1% of patients would have chosen to deliver their children one at a time regardless of transfer order, and 44.3% of study participants would recommend an eSET to a friend. Finally, 64.3% (N=151) of participants replied that they would elect for Comprehensive Chromosome Screening (CCS) with SET if free of charge. Most patients preferred to deliver children one at a time, with the exception of the patients who underwent DET and delivered twins. The majority of patients who were unsuccessful as well as those delivering singletons after SET would recommend eSET to a friend, whereas only a minority of those patients successfully delivering either one or two after DET would recommend eSET. The majority of patients in all groups reported a preference for eSET with CCS if free of charge, with the lowest incidence in the group of patients who had a singleton after DET. Table 1 displays responses based on transfer order and delivery outcome.

Patients' recommendations for eSET stratified by historical cycle outcomes.

	ET with no delivery (N=17)	SET delivered singleton (N=67)	DET delivered singleton (N=81)	DET delivered twins (N=70)
Preferred to deliver children one at a time (N;%)	15 (88.2)	61 (91.0)	64 (79.0)	27 (38.6)
Would recommend eSET to a friend (N;%)	9 (52.9)	52 (77.6)	18 (22.2)	25 (35.7)
Would choose eSET with CCS if free of charge (N;%)	10 (58.8)	59 (88.1)	41 (50.6)	41 (58.6)

CONCLUSIONS: Patients who were successful preferred the transfer order that they originally selected. Overall patients preferred to deliver children one at a time. The majority of patients in all groups recognized the value of eSET with CCS and would choose that option if they had access to treatment free of charge. Given the impact of higher order multiples and the significant long term health consequences that may result this information may be helpful to clinicians when counseling their patients. Support: None.

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A COMPARISON OF PREGNANCY RATES OF FROZEN EMBRYO TRANSFERS OF VITRIFIED BLASTOCYSTS TO VITRIFIED EUPOID BLASTOCYSTS. A. Picou,^a A. Hellmers,^a H. Werland,^a T. G. Turner,^a K. Silverberg.^b ^aAustin IVF, Austin, TX; ^bTexas Fertility Center, Austin, TX.

OBJECTIVE: To compare the pregnancy rates of frozen (vitrified) blastocyst transfers to the transfers of vitrified euploid blastocysts.

DESIGN: Retrospective study in a private assisted reproductive technology program.

MATERIALS AND METHODS: Pregnancy rates for transfer of vitrified blastocysts were compared with those of euploid vitrified blastocysts in a total of 448 embryo transfer cycles. A total of 94 euploid embryos and 354 frozen embryo transfers (FET) were performed. All embryos were cultured in Continuous Single Culture Media (Irvine Scientific) to the blastocyst stage. The embryos were vitrified dependent on freeze quality (grade CC or higher). The embryos that underwent preimplantation genetic screening (PGS) were laser assist-hatched on day 3, then biopsied once they reached

hatching with a differentiated inner cell mass and trophectoderm. All blastocysts were collapsed prior to freezing. Vitrification and warming were performed using Irvine Scientific freeze and thaw kits and Cryolocks. Patients who used donor eggs were excluded from this study. The outcomes of interest were positive hCG and positive clinical pregnancy rates (defined as the presence of fetal activity at 7 weeks).

RESULTS: A total of 253 of the 354 (71%) FET patients had a positive hCG compared to 61 of the 94 (67%) of euploid FET patients. Of the FET patients, 182 (of 354) developed fetal cardiac activity at their 7 week ultrasound, resulting in 51% clinical pregnancy rates. In comparison, 35 (of 94) patients who transferred euploid embryos developed fetal cardiac activity, resulting in 53% clinical pregnancy rate. Statistical analysis by t-Test demonstrated no significant difference between standard frozen embryo transfer and transferring frozen euploid embryos.

CONCLUSIONS: Vitrified blastocyst that reach freeze quality have no significant difference in positive hCG or clinical pregnancies compared to transferring vitrified euploid embryos. These results may be indicative that biopsy may impact the ability of the embryo to implant or develop. Also, the criteria of the embryos that are biopsied is not as consistent as what is classified as "freeze quality". This flexibility in grading may be detrimental to the embryo's ability to survive the biopsy and subsequent transfer.

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AVOIDING CANCELLATION OF EMBRYO TRANSFER: EMBRYOS WITH POOR MORPHOLOGY ON DAY 5 YIELD PREGNANCIES AND LIFE BIRTHS. G. Koustas, H. Smith, C. Sjoblom. Obstetrics and Gynaecology, University of Sydney/ Westmead Fertility Centre, Sydney, Australia.

OBJECTIVE: The objective of this study was to assess the occurrence and outcome of clinical pregnancies and live birth following transfer of embryos on day 5 of development with deviant morphological parameters.

DESIGN: Retrospective analysis of fresh cycles with resulting poor quality embryos on day 5 for single embryo transfer (SET) and double embryo transfer (DET) between January 2010 and January 2015.

MATERIALS AND METHODS: This study included patients having conventional IVF and/or ICSI in a total of 5019 fresh non-donor transfer cycles conducted from January 2010 to January 2015. Embryos were assessed on day 5 of development based on morphology. A poor embryo was identified as having inadequate compaction and/or poor or absent inner cell mass (ICM) and trophectoderm (TE), in accordance with the grading system defined by Gardner and Schoolcraft (1999).

RESULTS: Out of 5019 fresh cycles, we identified 367 cycles where the embryos transferred had been assessed as poor. There was a significant difference in age between patients with poor quality embryos compared to the overall average age of patients during this period. The proportion of IVF/ ICSI and number of embryos transferred was found to be significantly higher in the poor embryo group ($P < 0.05$; Table 1). The transfer of poor quality embryos on day 5 resulted in a clinical pregnancy rate of 21% (77/367) including 28 singleton-, 6 twin- and 1 triplet pregnancy (one monozygotic). Out of the 77 ongoing pregnancies 35 have so far resulted in a live birth. The gestational length was 38.8 ± 2.3 weeks and the birth weight for 28 singletons was 3181.2 ± 582 gr, 2279.2 ± 830 gr for 7 twins and 2170 ± 171 gr for the triplets.

CONCLUSIONS: Cycles yielding poor quality embryos are often cancelled, resulting in great stress and disappointment for the patients. The findings of this retrospective analysis highlights that poor quality embryos

transferred on day 5 have the capability to implant and result in healthy pregnancies and live births.

Analyzed parameters between all cycles and cycles with poor embryos.

	Total number of cycles	Proportion IVF/ICSI cycles	Proportion IVF/ICSI cycles	Female age	p
		IVF	ICSI		
All cycles	5029	62	38	34.6 ± 4.9	<0.05
Poor	367	53	47	36.7 ± 4.2	<0.05

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CLINICAL OUTCOMES FOR IVF (IN-VITRO FERTILIZATION) CYCLES WITH FRESH AND FROZEN-THAWED EMBRYO TRANSFERS. T. Khruapenkova,^a M. Troshina,^a A. Mironova,^a E. Kalinina,^a A. Bolt,^a M. Kharitonova,^a I. Ermilova,^a A. Klepukov,^a A. Naumova,^a N. Dmitrieva,^a E. Shalamova,^a V. Apryshko,^{a,b} S. Yakovenko.^{a,c} ^aAltravita IVF Clinic, Moscow, Russian Federation; ^bFaculty of Biology, M. V. Lomonosov Moscow State University, Moscow, Russian Federation; ^cFaculty of Physics, M. V. Lomonosov Moscow State University, Moscow, Russian Federation.

OBJECTIVE: The aim of this study was to compare clinical pregnancy and early miscarriage rates following fresh embryo transfer (ET) and frozen embryo transfer (FET) among different age groups.

DESIGN: Retrospective study.

MATERIALS AND METHODS: A total of 4832 non-donor ICSI (intracytoplasmic sperm injection) cycles with single ET (SET) from January 2007 to October 2014 were reviewed. Patients aged between 20 and 47 years underwent controlled ovarian hyperstimulation with gonadotropins, using GnRH antagonist for pituitary suppression. Oocyte maturation was achieved with either hCG or GnRH agonist. SET of day 5 blastocyst or day 5-6 vitrified-warmed blastocyst (Kawayama's protocol) was performed. Blastocysts were selected for transfer or vitrification on the basis of the following criteria: at least moderate expansion and AA,AB,BA,BB grades according to Gardner's system. Progesterone was initiated on the day of retrieval in fresh autologous cycles, and five days prior to warming and transfer in FET cycles. FET performed in natural cycles were included in the study. All cases were divided into 3 age groups: (20-34); (35-39); (40-47). The following clinical outcomes were compared: clinical pregnancy (presence of a gestational sac(s)) rate per ET and early miscarriage rate (a fetal loss before the 12th week) per clinical pregnancy. Data was analyzed using Student's t-test.

RESULTS: Frozen ET cycles yielded higher clinical pregnancy rates compared with fresh ET cycles regardless of maternal age. However, ongoing pregnancy rates/per ET were similar following fresh ET and FET for all age groups. Present study also showed a significant increase in early miscarriage rates in frozen ET cycles compared with that in fresh in women <35 .

CONCLUSIONS: Despite higher clinical pregnancy rate, women <35 undergoing FET are at increased risk of early pregnancy loss compared with those undergoing fresh ET. Collected data shows that in the absence of medical contraindication fresh ET results in better outcome for women of this age group. No difference in ongoing pregnancy rates following fresh ET and FET

Table 1. Clinical outcomes following fresh and frozen ET

	20-34 (2799 patients);		35-39(1363 patients);		40-47(670 patients);	
	Fresh/Frozen	p value	Fresh/Frozen	p value	Fresh/Frozen	p value
Clinical pregnancy rate/ET(%)	32.9/39.4	<0.001	27.9/32.3	<0.004	15.8/20.3	<0.01
Early miscarriage rate/Clinical pregnancy rate(%)	20.9/32.3	<0.01	40/41	>0.05	63.2/57.4	>0.05
Ongoing pregnancy rate/ET (%)	15.3/15.9	>0.05	10/10.3	>0.05	3.7.4.7	>0.05