

(SPA), have the capacity to predict success in ICSI cycles. The SDD Test measures the fraction of cells fully decondensed after a 15 minute incubation in frog egg extract, measuring delayed decondensation while the SPA measures the sperm capacitation index (SCI), the average number of sperm penetrations per zona-free hamster oocyte. The objective of this study was to review the pregnancy outcome in ICSI cycles in relation to the SPA and the SDD results.

**DESIGN:** A prospective, double blinded, single center, cohort study. Outcome was evaluated by delivery rate (ODR), defined as the number of ongoing pregnancies and/or deliveries per ICSI cycle.

**MATERIALS AND METHODS:** Ejaculates were divided into 3 portions, one used for the SPA, the second for the SDD and the third frozen for use in a future ICSI cycle. The data consisted of 50 ICSI cycles. Cycles were grouped according to abnormal v. normal score in the gradient SPA (<14 vs. ≥14 SCI) and the SDD (<80% vs. ≥80%) with the normal score based on previous outcome data from cycles other than ICSI, including In Vitro Fertilization (IVF) with conventional insemination and intrauterine insemination cycles. The SDD was performed on the raw specimen. A gradient preparation was used for sperm preparation for the SPA as well as ICSI. Standard methods were used for ovarian stimulation and embryo culture. Odds ratios (OR) and positive predictive value (PPV) for failure were calculated, and the statistical significance was assessed by the Chi<sup>2</sup> distribution.

**RESULTS:** Outcomes of cycles with a SDD <80 were compared to cycles with a SDD ≥80. The ODR was 45.0% vs. 43.3% (*P*>0.05), respectively. Outcomes of cycles with a SPA SCI <14 were compared to cycles with a SPA SCI ≥14. The ODR was 52.9% vs. 39.4% (*P*>0.05), respectively.

	SDD (%)		SPA (gradient SCI)	
	<80	≥80	<14	≥14
ICSI cycles	20	30	17	35
Ongoing/delivered pregnancies	9	13	9	13
Delivery rate (ODR)	45.0%	43.3%	52.9%	39.4%
OR	0.93		0.58	
PPV	55%		47%	

**CONCLUSIONS:** 1. The SDD is not predictive of ODR in IVF cycles with ICSI. 2. The SPA is not predictive of ODR in IVF cycles with ICSI.

*Supported by:* None.

#### P-828

**SUCCESSFUL SPERM RETRIEVAL, IVF/ICSI AND PREGNANCY IN A COUPLE WITH A 45X,46XY MALE PARTNER.** J. D. Schiff, N. Bar-Chama. Male Reproductive Medicine and Surgery, Genesis IVF, Brooklyn, NY; Urology, Mount Sinai School of Medicine, New York, NY.

**OBJECTIVE:** Successful sperm retrieval using the microsurgical testicular sperm extraction can be expected in up to 70% of men with non-obstructive azoospermia. Success varies with the specific genetic problem and the testicular histology identified. Men with specific chromosomal problems including Klinefelters' syndrome can have successful retrievals of sperm and achieve pregnancies using IVF with ICSI. No reports of successful retrieval in a male partner with 45X,46XY have been reported. We report our experience treating a man with 45X,46XY for non-obstructive azoospermia.

**DESIGN:** Case Report.

**MATERIALS AND METHODS:** A 31 year old man with a 30 year old wife had a 3 year history of primary infertility. Laboratory testing included an hormonal profile, semen analysis and genetic testing. Sperm retrieval was performed using a microsurgical approach. IVF with ICSI was performed using fresh sperm.

**RESULTS:** He had bilaterally undescended testes at birth resulting in an orchiectomy on the right and an orchiopexy on the left. Sexual function was normal, he was healthy, and his wife's evaluation was normal. On physical exam, his solitary testis was 14 mL, slightly soft and had no palpable masses. His testosterone level was 132 ng/dL (normal 240–862 ng/dL) with an FSH of 25.4 IU/dL normal (4.2–18.4 IU/dL) and LH was 8.6 (normal 3.8–9.4 IU/dL). Three semen analyses revealed azoospermia. His karyotype was 45X,46XY, with no Y microdeletions. Genetic counseling was performed, and they proceeded with a microsurgical TESE. Prior to treatment, the patient was treated with clomiphene citrate 25 mg daily for three months. Repeat testosterone after two months was 382 ng/dL. Microsurgical TESE

resulted in the procurement of sperm adequate for IVF with ICSI. Three fertilized embryos were transferred and a singleton pregnancy ensued. A healthy baby girl was born nine months later.

**CONCLUSIONS:** Microsurgical TESE has been used to successfully retrieve sperm from men with a variety of genetic and chromosomal abnormalities. To date, men with a 45X,46XY karyotype have not been reported to have had successful retrieval attempts. We successfully treated a man with 45X,46XY with clomiphene citrate prior to microsurgical TESE and then successfully retrieved sperm. This sperm resulted in successful fertilization and pregnancy, and a normal healthy child was born. This report suggests that men with a 45X,46XY should be offered microsurgical TESE with appropriate genetic counseling in order to affect pregnancy with IVF/ICSI.

*Supported by:* None.

#### P-829

**SPERM MOTILITY IN BASELINE SPERMOGRAM IS PREDICTIVE OF TOTAL MOTILE SPERM AFTER PREPARATION FOR INSEMINATION.** F. Ayala A, A. Morales, M. Merino, B. L. Juarez, L. Absalon, G. Enrique. University Center of Reproductive Medicine, Hospital Universitario, UANL, Monterrey, NL, Mexico.

**OBJECTIVE:** Every institution has different cut-off values to determine which is the required amount of total motile sperms after preparation for intra-uterine insemination. In our center we consider 3 million total motile sperm as the minimum necessary to consider the sample as appropriate. The objective of this study is to determine whether sperm motility in baseline spermogram is predictive of total motile sperm count after sperm preparation for insemination.

**DESIGN:** Retrospective, descriptive analysis.

**MATERIALS AND METHODS:** Patients presenting to the University Center of Reproductive Medicine at "Hospital Universitario" in Monterrey, Mexico for sperm preparation between July 2004 and June 2006. Spermogram parameters were recorded according to WHO guidelines. Swim-up and density gradients preparations were included. ROC curve was used to determine the amount of total motile sperm in the baseline evaluation were necessary to obtain more than 3 millions motile sperm after preparation.

**RESULTS:** 348 patients were included. Samples were prepared with both swim up and density gradients techniques separately. After ROC analysis sample prepared with swim up technique showed a breaking point at 4.13 millions motile sperms/ml in spermogram to determine the highest sensitivity and specificity to predict more than 3 millions motile sperms after preparation, with a sensitivity of 80.5% (95% CI 75.2%-85.1%) and specificity of 82.3% (95% CI 72.1%-90%). The PPV was 93.3% and NPV 57.8%.

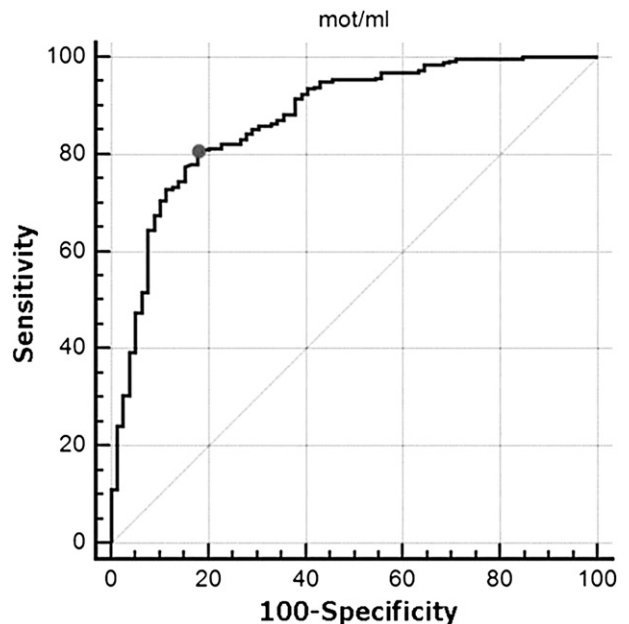


Figure 1.

Samples prepared with density gradient technique showed a breaking point at 4.03 million sperms/ml for a sensitivity of 90.7% (95% CI 77.8%-97.3%) and a specificity of 70.59% (95% CI 44.1%-89.6%). The PPV was 95% and NPV 54.9%.

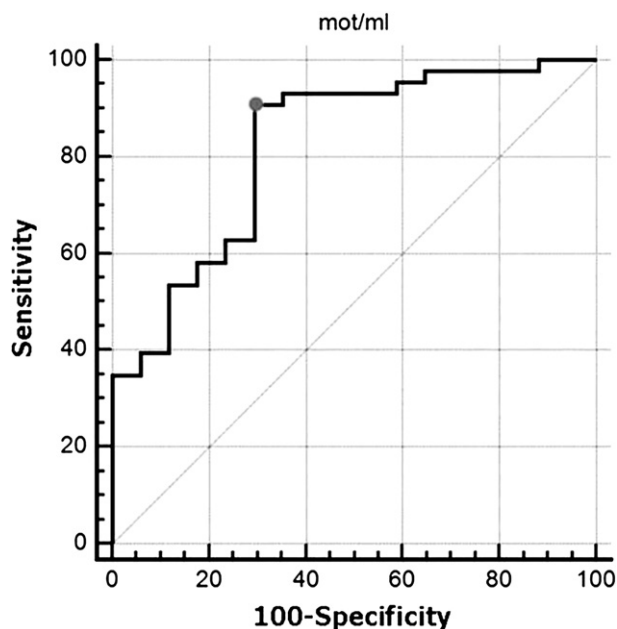


Figure 1.

**CONCLUSIONS:** Total motile sperm count in baseline spermogram can be used as a good predictor for and adequate total motile sperm count after sperm preparation for insemination with swim up or density gradient technique.

*Supported by:* None.

**P-830**

**SPERM DNA DAMAGE VS. REACTIVE OXYGEN SPECIES (ROS) – IS THERE EVIDENCE OF A CAUSAL RELATIONSHIP?** J. P. Alukal,

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**OBJECTIVE:** Assessments of sperm DNA damage are thought to measure DNA decondensation that is in large part due to peroxidative damage. ROS levels are checked often; studies have shown that treatment of patients with high ROS levels in semen can improve overall semen parameters. However, there exists little evidence that ROS activity actually correlates to degree of DNA damage. In order to define this relationship, we examined our database of patients with male infertility.

*DESIGN:* Retrospective Review.

**MATERIALS AND METHODS:** Between 1/04 and 4/07, 1173 patients underwent assessment of sperm DNA damage using a modified COMET assay (single cell gel electrophoresis). 1212 patients underwent assessment of ROS using a commercially available chemiluminescent assay. 653 patients had both ROS and DNA damage performed on the same specimen, with a total number of 735 pairs of tests. All patients had a routine semen analysis performed at the same time as both studies. Statistical analysis was performed using ANOVA on ranks with Dunn's posthoc, Spearman's correlation, and  $\chi^2$  analysis.

**RESULTS:** Sperm DNA damage levels were higher in patients with poorer sperm density ( $P < 0.001$ ); ROS levels did not follow a pattern ( $P = 0.368$ ) (Table). An attempt to correlate sperm DNA damage levels and ROS levels did not demonstrate a significant relationship ( $R = 0.003$ ,  $P = 0.944$ ). Finally, a comparison of test results (normal vs. abnormal), regardless of value, failed to demonstrate a significant relationship ( $P = 0.37$ ,  $\chi^2$ ).

TABLE. Sperm Density vs. DNA Damage, ROS

Sperm Density	#DNA Damage Abnormal Result/Total (%)	# ROS Abnormal Result/Total (%)	DNA	
			Damage Level (median percent)	ROS Level (median RLU)
Severe Oligospermia (<5 million/ml)	64/130 (49%)	93/130 (71%)	27	1.85
Oligospermia (5–20 million/ml)	36/168 (21%)	128/168 (76%)	16	2.00
Normospermia (>20 million/ml)	23/437 (5%)	318/437 (72%)	11	1.30
<i>P</i> -value	<0.001	=0.633	<0.001	=0.368

Performed using chi squared, ANOVA on ranks using Dunn's posthoc.

**CONCLUSIONS:** Surprisingly, we found no correlation between ROS levels and DNA damage results. While this points to the possibility that ROS levels do not influence DNA damage levels, this conclusion is contradicted by existing data. Instead, it seems likely that a multifactorial process exists in which oxidation, environmental exposures, protamine deficiency, or programmed germ cell apoptosis all play a role in inducing sperm DNA damage.

*Supported by:* Supported in part by NIH P01HD36289 (DJL), NIH M01RR00188 (BN), and AUA Foundation (JA).

**P-831**

**EVALUATION OF PRE- AND POST-WASH SPERM PARAMETERS ON INTRAUTERINE INSEMINATION OUTCOME.** K. Makker,

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**OBJECTIVE:** Intrauterine insemination is a cost effective treatment commonly used to treat infertile couples. The goal of our study was to evaluate the sperm quality in pre-and post-wash samples and correlate them with the IUI outcomes.

*DESIGN:* Prospective study.

**MATERIALS AND METHODS:** Semen samples were collected from 102 infertile men undergoing IUI and examined according to WHO 1999 guidelines for sperm count, motility and morphology. Patients underwent controlled ovarian hyperstimulation and IUI. Semen samples were prepared by gradient sperm wash technique. Pre and post wash sperm count, and leukocyte count were assessed. Pregnancy was assessed by quantitative  $\beta$ -HCG test after 1 week of the missed period and confirmed by vaginal ultrasound 3 week after positive pregnancy test. Statistical analysis was done to compare different variables in the group achieving pregnancy versus the patients who did not achieve pregnancy. Wilcoxon's test or Fisher exact test were utilized and a  $P < 0.05$  was considered significant.

**RESULTS:** Women who achieved pregnancy showed significantly higher levels of post wash sperm concentration compared with the non-pregnant group ( $P = 0.017$ ). There was no significant difference between pregnant vs. non-pregnant groups regarding the male age, female age, duration of infertility, or infertility type (Table).

TABLE. Pre- and post-wash sperm parameters in pregnant and non-pregnant groups after IUI

Parameters	Non pregnant group (n = 50) Mean $\pm$ SE	Pregnant group (n = 52) Mean $\pm$ SE	P - value
Pre wash sperm concentration (million/ml)	74.9 $\pm$ 6.9	89.5 $\pm$ 7.5	0.2
Post wash sperm concentration (million/mL)	13.4 $\pm$ 1.5	17.9 $\pm$ 1.7	<b>0.017</b>
Pre-wash: Normal forms (%)	26.4 $\pm$ 2.1	29.3 $\pm$ 2.0	0.15
Female age (years)	27.8 $\pm$ 0.6	27.9 $\pm$ 0.6	0.96
Male age (years)	32.0 $\pm$ 0.75	31.7 $\pm$ 0.7	0.77
Duration of infertility	6.5 $\pm$ 0.9	5.9 $\pm$ 0.7	0.68
Infertility type:			
Primary	37(36.3%)	9(8.8%)	0.084
Secondary	21(20.75 %)	35(33.3%)	

Values are mean  $\pm$  SE, or N (%).  $P < 0.05$  considered significant by Wilcoxon's test or Fisher exact test.

**CONCLUSIONS:** IUI outcome is not affected by infertility type or age of the infertile couple. Post-wash sperm concentration correlates positively with pregnancy outcome after IUI.

*Supported by:* None.

**P-832**

**THE TREATMENT OF THE PATIENTS WITH OBSTRUCTED AZOOSPERMIA WITH MICROSURGICAL TECHNIQUES FROM THE EPIDIDYMIS (MESA) AND TESTICULAR SPERM EXTRACTION BIOPSY (TESE).** H.-T. Yu, H.-Y. Huang, H.-M. Wu, C.-H. Lai, Y.-K. Soong.

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**OBJECTIVE:** To compare the outcome of male factor ICSI cycle using MESA with TESA for patients with obstructive azoospermia.