TABLE 1. Summary of semen parameters

	TUNEL<20% (X±SD)	TUNEL≥20% (X±SD)
N	13	14
Age	33±13.3	42±6.3
Kruger(%)	10±3.2	6±3.2
Volume(ml)	2.5±1.2	3±1.5
Concentration(millions/ml)	59±31.2	46±31.7
Motility	54±15	40±15

All neat semen samples significantly reduced their TUNEL levels after gradient (26.2±9.8 to 18.7±8.8)*. In group A: TG TUNEL levels (10.2±3.0) were significantly higher in TG2+1.5hr in PVP (13.4±4.5)* and TG2+0.5hr (12.7±4.1)* in HA, but did not reach abnormal levels(20%). In group B: TG TUNEL levels (25.4±5.1) were significantly higher in TG2+1.0hr in PVP (30.4±6.4)* and TG2+0.5hr in HA (29.4±6.8)*.

CONCLUSION: Sperm DNA fragmentation significantly decreases after centrifugation gradient regardless of the initial levels of the sample. Samples with TUNEL≥20% are more susceptible to a significant increase in DNA fragmentation over time, and increases faster in HA compared to PVP; this data may have significance during sperm preparation for ICSI.

Supported by: CEGyR foundation.

P-441 Wednesday, October 24, 2012

SEMINAL HYPERVISCOSITY IS NOT ASSOCIATED WITH SEMENOGELIN DEGRADATION AND SPERM DNA DAMAGE: A PROSPECTIVE STUDY OF INFERTILE MEN.

N. Esfandiari,[a,d] E. de Lamirande,[c] A. Gokturk,[a] M. San Gabriel,[b] R. F. Casper,[a,d] A. Zini.[c] [a]IVF, Toronto Centre for A.R.T., Toronto, ON, Canada; [b]IVF, OVO Fertility Clinic, Montreal, QC, Canada; [c]Urology, Department of Surgery, Montreal, QC, Canada; [d]Ob/Gyn, University of Toronto, Toronto, ON, Canada.

OBJECTIVE: Infertile men have poorer sperm DNA quality than do fertile men, a sperm defect that may contribute to reducing male reproductive potential. However, the etiology of the DNA damage has not been fully characterized. We sought to examine the relationship, if any, between seminal hyperviscosity (HV), semenogelin (Sg) degradation, and sperm DNA damage in a consecutive series of non-azoospermic, infertile men in order to determine whether seminal hyperviscosity may contribute to sperm DNA damage.

DESIGN: A prospective study on consecutive semen samples obtained from men undergoing infertility treatment.

Conventional semen parameters and sperm chromatin structure assay in patients with seminal hyper viscosity and in controls

	Hyperviscosity	Controls	*P* value
Semen Volume	2.45±0.9	3.25±1.2	0.02
Sperm Count	45±37.0	49±24.1	NS
Sperm Motility	33.3±19.4	41.5±19.2	0.02
Sperm Morphology	11.7±6.47	14.7±4.4	0.03
Sperm %DFI	7.4±5.9	8.2±5.1	NS
Sperm %HDS	4.3±2.5	4.6±1.5	NS

A Values are Mean±SD, $P<0.05$ was considered statistically significant.

MATERIALS AND METHODS: Semen volume and seminal hyperviscosity, sperm concentration, motility, morphology (WHO), extent of semenogelin degradation (by immunoblotting), and sperm DNA damage (by sperm chromatin structure assay-SCSA and expressed as% DNA fragmentation index-%DFI) were evaluated in men with (n=24) and without seminal hyperviscosity (n=25).

RESULTS: Mean (±SD) semen volume, total sperm motility and normal morphology were significantly lower in samples with seminal hyperviscosity compared to those without. Mean sperm %DFI was not different in samples with hyperviscosity compared to those with normal seminal viscosity (Table 1). There was no correlation between the extent of Sg degradation and viscosity or any other semen parameters.

CONCLUSION: Our data indicate that seminal hyperviscosity is not associated with sperm DNA damage and suggest that seminal hyperviscosity is unlikely to have a significant direct or indirect effect on sperm DNA integrity.

P-442 Wednesday, October 24, 2012

EFFECT OF POLYMORPHISM IN THE PROMOTER ESTROGEN RECEPTOR ALPHA ON SPERM COUNT.

B. Lledo,[b] A. M. Fabregat,[b] R. Morales,[b] J. A. Ortiz,[b] J. Llacer,[a] R. Bernabeu.[a] [a]IB Biotech, Instituto Bernabeu, Alicante, Spain; [b]Reproductive Medicine, Instituto Bernabeu, Alicante, Spain.

OBJECTIVE: Given that it has been reported that polymorphisms in the estrogen receptor gene alpha (ER) may be associated with impaired semen analysis, our goal was to determine whether the length TA repeat in the promoter region of the ERa gene is associated with low sperm count.

DESIGN: Restrsopective case-control study.

MATERIALS AND METHODS: A retrospective study in determining the number of repeats TA in the ER alpha gene promoter in two study groups: Control: normozoospermic (n=50) and Patients: oligozoospermic or azoospermic (n=150). DNA was purified from peripheral blood lymphocytes using the commercial kit (Wizard ® Genomic DNA purification kit. Promega). The TA repeat region in the ER alpha promoter is amplified by PCR in which the forward primer is fluorescently labeled in position 5 'with 6-FAM. The length of the amplified product and therefore the number of repeats TA is determined by capillary electrophoresis (ABI PRISM 310, Applied Biosystems). Two-tailed X2 test was used to compare allelic frequency between patients and control group.

RESULTS: There was great variability in the number of TA repeats in the promoter region of the gene. The range varies between 7 and 24 repetitions. There was similar distribution in the length of the repeats in both groups. An in-depth study reveals differences between the two groups under study. For low number of TA repeats, the controls display relative frequencies higher than those observed in patients, while for higher number of TA repeats the situation is reversed and patients are those with higher frequencies. We quantified these differences and in particular 42.6% of the controls have a number of alleles repeats not exceeding 15 repetitions compared to 25.4% of patients ($P<0.05$). This difference is particularly large in the case of azoospermia in which only 14.3% have alleles with a repeat number less than or equal to 15.

CONCLUSION: Men with a high number of repetitions are more likely to have low sperm count.

Supported by: Instituto Bernabeu.

P-443 Wednesday, October 24, 2012

SPATIAL AND TEMPORAL TRENDS IN MALE INFERTILITY THROUGHOUT THE UNITED STATES, 1995-2009.

A. Y. Odisho,[a] A. K. Nangia,[b] J. F. Smith.[a] [a]Department of Urology, University of California, San Francisco, San Francisco, CA; [b]Department of Urology, University of Kansas Medical Center, Kansas City, KS.

OBJECTIVE: To estimate the overall prevalence of male infertility among couples seeking assisted reproductive technology (ART) and its spatial and temporal distribution in the US from 1995-2009.

DESIGN: Cross-sectional geospatial analytic study.

MATERIALS AND METHODS: IVF cycle data from every clinic providing ART (Assisted Reproductive Technology) services were obtained from the Centers for Disease Control ART Surveillance System. The data were analyzed with Google Refine and Stata. R and GeoCommons were used to determine the geographical location of each clinic and map number of cycles and the prevalence of male factor infertility, defined as any abnormal semen parameter or sperm functional assay.

RESULTS: Between 1995 and 2009, 1,167,883 cycles of ART using non-frozen non-donor eggs were performed in the US. This increased from 43,505 cycles in 1995 to 100,880 cycles by 2009. During that time, the nationwide prevalence of male factor infertility as diagnosed at ART clinics was 17.8% (range 10.6-26.1%). Across all years, the highest prevalence was reported in Utah (26.1%) and lowest in Mississippi (10.6%). All states demonstrated a higher overall prevalence of male infertility diagnoses from 1995-1998 (mean 21.1% for all states), with a substantial decline in 1999. Significant annual increases in the prevalence of male infertility were noted in Utah, Minnesota, and Wisconsin. The total number of cycles with male factor infertility increased from 9,689 in 1995 to 17,583 in 2009.