SSMR NEWS

February *Society for the Study of Male Reproduction* 2005

President's Message

Now that 2004 had bid its farewell, it is time to look around the corner to the upcoming Society for the Study of Male Reproduction meeting at the annual American Urological Association meeting in San Antonio in 2005. San Antonio presents a wonderful venue for scientific interaction, with its quaint atmosphere and river walk, and all who attend will not only benefit from the academic sessions but will undoubtedly enjoy a delightful time as well.

Craig Niederberger, MD, FACS

The SSMR scientific meeting will be held Saturday May 21, 2005, and the topic this year, "spermatotoxicity," is very unusual and should prove both interesting and highly clinically relevant. Few instances offer the opportunity to review in depth the agents, treatments and conditions that are toxic to male reproductive potential. We have set out to provide a program that covers spermatotoxicity from its biological basis to "nuts and bolts" clinical issues encountered every day by practitioners.

Our director, Peter Chan, has assembled a list of speakers well known both for their expertise in areas of spermatotoxicity and for their ability to condense significant material into informative and entertaining talks as we cover a wide array of topics. The first hour of the program will include a discussion of the basic science laying the foundation for the following two hours, which will focus on direct clinical relevance. Dolores J. Lamb, PhD, will give an "Update on the Molecular Biological Basis of Spermatotoxicity" and Susan Benoff, PhD, will integrate with Dr. Lamb with "Update on the Biochemical Basis of Spermatotoxicity."

Following the groundwork provided by Drs. Lamb and Benoff will be a series of succinct, targeted talks designed to give the practicing Urologist the specific information he or she needs in treating patients in whom fertility is a concern. These short talks will be given by noted experts in various fields who were chosen to separate the wheat from the chaff in their presentations. Larry I. Lipshultz, MD, will give "Common Medications and Drugs: How Do They Affect Male Fertility?" Marvin L. Meistrich, PhD, and Gunapala Shetty, PhD, will speak on the "Impact of Chemotherapy Agents on Male Fertility" and the "Impact of Radiation on Male Fertility." Rebecca Z. Sokol, MD, will address the "Impact of Environmental Toxins on Male Fertility." Randall B. Meacham, MD, will discuss "Spermatotoxicity of Recreational and Body-Building Drugs," and Mark Sigman, MD, will speak on the "Roles of Nutraceuticals and Phytoestrogens on Male Fertility." To finish, Armand Zini, MD, will speak on the "Impact of Heat on Male Fertility." While we will cover a very broad array of areas of spermatotoxicity in the afternoon talks, these speakers are known not only for their knowledge but also for their educational skills and will concentrate on specific points of clinical relevance.

Shortly after the business meeting, we will depart to La Margarita Restaurant and Oyster Bar for our annual reception and banquet. Drs. Dolores Lamb and Edmund Sabanegh, and Wendy Weiser, Ann Marie DuPlessis and Debbie Roller of W.J. Weiser and Associates have orchestrated a truly outstanding evening of fun and camaraderie at this wonderful San Antonio eatery. The restaurant is within walking distance from the Marriott Riverwalk Hotel, and trolley service is also available from the hotel. Cocktails begin at 6:30 p.m., and dinner and entertainment start at 7:30 p.m. The dress code is relaxed or business casual. Please make an early reservation, as our banquet should prove quite popular.

I would like to express my gratitude to all who suggested topics for this year's scientific meeting and who contributed to the intensive process of building the program. I would also like to thank the SSMR board of directors, who has labored tirelessly during the year for the functions of the Society, Peter Chan for his hard work on the scientific program, and Dolores Lamb for her great help and for assembling this newsletter.

I would also like to extend my personal thanks to GlaxoSmithKline pharmaceuticals for support of our scientific program and topic this year. "Spermatotoxicity" is certainly a topic with no commercial interest. Yet GlaxoSmithKline not only provided completely unrestricted support for our program, the company provided the year's funding for the SSMR as well. That GlaxoSmithKline offered to make possible our scientific event as well as this year's operating expenses marks it as an unparalleled high-minded companion to the science and practice of male reproduction. ⌘

CONTENTS

Review of ASRM 2004

Contributions by Peter Kolettis, Dolores Lamb, Ajay K. Nangia, Craig Niederberger, Jon Pryor, Jay Sandlow, and Paul Turek.

SATURDAY, OCTOBER 16, 2004

POSTGRADUATE COURSE
"The Role of the Andrologist in the Era of ART"
Peter N. Kolettis, MD, Chair, Jay I. Sandlow, MD, Co-Chair, Peter N. Schlegel, MD, Michael P. Steinkampf, MD, MPH

New advances in both the assisted reproductive technologies and new microsurgical techniques have dramatically altered the field of male infertility. Today, have improved outcomes in microsurgical reconstruction and sperm retrieval are realized because of enhanced microsurgical techniques. Because of improvements in the assisted reproductive technologies (ART), the urologist is challenged to offer treatments allowing couples to conceive with the least therapeutic intervention and most cost-effective means. As new empiric therapies are developed, their efficacy must be defined. This course goal was to update the urologist on advances and current practice in the evaluation and management of male factor infertility in the era of ART. After a review of the current evaluation and treatment of male factor infertility, laboratory evaluation of the infertile male, female factor evaluation and ART, the course emphasized the contribution of he urologist to the evaluation and treatment of the infertile couple. Additional topics presented focused on treatment of the male, including surgical treatment for male infertility; sperm retrieval techniques; empiric medical therapy for male infertility; and an overview of ART - which technique is indicated and why.

MONDAY, OCTOBER 18, 2004

PRESIDENT'S GUEST LECTURE
"Reproduction and Responsibility: The Regulation of New Biotechnologies"
Leon Kass, MD, PhD

Dr. Leon Kass, MD, PhD, a renowned bioethicist from the University of Chicago, gave the President's Guest Lecture on "Reproduction and Responsibility: The Regulation of New Biotechnologies." Ethical considerations and regulatory oversight have tended to lag biotechnological advances. These issues are discussed in the April, 2004 report from the President's Council on Bioethics, entitled "Reproduction and Responsibility." This report reviews current regulatory practices and encourages professional societies to improve their systems of oversight. The report also recommends legislation to prohibit radical reproductive practices that threaten widely shared values. These recommendations are grouped under four principles:

- Preserve the boundary between human and animal species. Human embryos should not be placed in animal uteruses.
- Preserve respect for women. Prohibit initiating a pregnancy for research purposes or to secure body parts.
- Preserve respect for children conceived with ART. A child should only be conceived by the union of egg and sperm.
- Establish boundaries how embryos can be used. For example, an embryo should not be produced using animal sperm and a human egg or vice versa. They also recommended prohibiting the use of embryos beyond 10-14 days for research.

Though serious disagreements remain, Dr. Kass concluded that ethical boundaries on the use of new technologies need to be implemented.

WORKSHOP
"Sperm Anomalies Affecting Embryo Development"
Craig S. Niederberger, MD, Ashok Agarwal, PhD, Gianpiero D. Palermo, MD

The topic of the Monday, October 18 workshop was "Sperm Anomalies Affecting Embryo Development." Dr. Niederberger introduced Drs. Agarwal and Palermo by noting that putative sperm defects may affect embryogenesis at multiple points, including fertilization, early embryogenesis and fetal formation. Dr. Agarwal discussed genetic spermatotoxicity, including how sperm DNA damage may occur, how it may be detected, and how it may be prevented or repaired. Highlights of Dr Agarwal's presentation include a discussion of mechanisms responsible for the susceptibility of sperm DNA to damage, including leukocytospermia, smoking, iatrogenic DNA damage, chemotherapy and radiation toxicity. Dr. Agarwal followed this introduction by relating reactive oxygen species, apoptosis and sperm DNA damage to explain acquired DNA defects. Various assays for DNA damage were then described, with TUNEL, COMET and SCSA highlighted, and followed by an interesting discussion of the relationship between DNA damage and embryo quality, pregnancy rates and recurrent pregnancy loss. The gist of Dr. Agarwal's excellent presentation was that although preliminary evidence suggests a relationship between DNA damage as measured by various assays, controlled trials need to be performed before clinicians my comfortably apply these innovative methods to their patients.

Dr. Palermo furthered the workshop by discussing further clinical aspects of sperm anomalies affecting embryo development, including male infertility related to sperm anomalies, the types of anomalies, whether functional or genetic, improving sperm performance especially in artificial reproductive techniques, and the clinical outcomes of those techniques. Dr. Palermo began with a discussion of clinical sperm anomalies in general, including morphology, bulk seminal parameters, and the acrosome reaction, and continued with observations that defective sperm may still fertilize ova in ICSI. Continuing, genomic structure and sequence assays were discussed, and outcomes related to Y-chromosomal microdeletions. Dr. Palermo discussed sperm aneuploidy screening and the androgen receptor gene. In the next section, Dr. Palermo described his sperm processing techniques for IVF and ICSI, and finished by describing outcomes of IVF and ICSI with anomalous sperm. Of interest, whether ejaculated sperm was used in IVF or ICSI, or if testicular sperm was used in ICSI, pediatric developmental parameters for children born to these techniques were not outside normal ranges.

WILLIAM C. ANDREW WYETH ENDOWED LECTURESHIP
"Endocrine Aspects of Reproduction in Aging Men and Women"
Professor Henry G. Berger

Professor Henry G. Burger, A.O, F.A.A. from Prince Henry's Institute of Medical Research at Monash Medical Centre in Victoria, Australia, delivered the William C. Andrew Wyeth Endowed Lectureship entitled

"Endocrine Aspects of Reproduction in Aging Men and Women." He began by focusing on endocrine changes in aging men. Though there is wide variability in the data, overall there is a rise in FSH, LH, and SHBG, and a decline in total testosterone (T), free T, and inhibin B with aging. Obesity is a factor in that several studies have shown no relationship between T and age after adjusting for obesity. In women, there is a slow rise in E2 and variable rises in FSH and LH in women with aging, and marked rise in FSH and LH and a fall in E2 at time of final menses. There is a slight decline in T in women around 35-40 years of age, but T does not fall at the transition to menopause. He did not discuss treatment of women with testosterone, but focused on andropause, which he defined as symptoms of low T (decreased energy, libido, and mood) in men between 40 to early 60's. He recommended measuring total T in the morning and repeating for confirmation if low and treatment is being considered. The problem with clinical studies on treatment with T is that they are all short term studies (<3 years), with a small number of subjects (< 100) and the baseline T levels are variable. Though there are potential benefits of T supplementation in hypogonadal men, such as increased muscle mass, improvement in libido, etc, there are some potential problems such as inducement of prostate cancer, BPH, or cardiovascular disease. He recommends T therapy in those with total T<200ng/dl (conservative approach) and potentially if less than 300ng/dl, given symptoms of hypogonadism. Absolute contraindications include breast or prostate cancer, and relative contraindications include severe BPH, or elevated PSA or hematocrit. Theses patients need to be monitored on an annual basis, including a rectal exam and PSA level. Finally, Dr. Burger noted that there are ASRM guidelines on treating these patients.

SOCIETY OF REPRODUCTIVE SURGEONS (SRS) DEBATE
"Management of Post-Vasectomy Fertility"
Peter N. Schlegel, MD, Richard J. Paulson, MD, Marc Goldstein, MD

In a debate moderated by Peter N. Schlegel, MD, Richard J. Paulson, MD, a reproductive endocrinologist from the University of Southern California and Marc Goldstein, MD, a urologist from Cornell University, discussed management of post-vasectomy fertility. The discussion underscored the difficulty of a direct comparison of the two treatment options for having one's own biological children, that is, vasectomy reversal or sperm retrieval with in vitro fertilization and intracytoplasmic sperm injection (IVF/ICSI). It is difficult to compare them strictly based on success rates because these can vary between surgeons and IVF centers. Dr. Paulson suggested using fecundability curves to estimate success rates after vasectomy reversal. These are probably not a valid way to report these success rates because the timeframe for pregnancy after vasectomy reversal is different than for IVF. IVF can allow for pregnancy to occur faster although this time estimate depends on what point for time zero is selected. Also, the choice about treatment is ultimately the couple's to make. Some couples object to IVF for personal or religious reasons and others cannot afford it. Similarly, although probably less commonly, some men may not wish to have a vasectomy reversal. IVF/ICSI is generally more expensive when comparing direct costs, i.e., cost of the procedure versus the cost of an IVF cycle. Cost comparisons which account for indirect costs, such as multiple births or multiple IVF cycles, have generally demonstrated that vasectomy reversal is more cost-effective. The issue was perhaps best summarized by Dr. Goldstein who stated that this is not an "either or" issue. Rather it amounts to individualizing treatment based on characteristics of the couple. Patients with shorter (< 15 years) obstructive intervals are better managed with vasectomy reversal unless there are female factors that would necessitate IVF anyway. Those with obstructive intervals greater than 15 years or significant female factors generally have a better chance for success with IVF/ICSI.

TUESDAY, OCTOBER 19, 2004

AMERICAN UROLOGICAL ASSOCIATION BRUCE STEWART MEMORIAL LECTURE
"Laparoscopic Surgery: Past, Present, and Future"
Inderbir S. Gill, MD

Laparoscopic surgery has revolutionized urologic surgery. Advances in this field are rapid. Dr. Gill presented a brief retrospective look into the historical origins of laparoscopic surgery. He stressed the importance of the accomplishments in urologic surgery to date and provided the audience with a vision of the future of this field in urology.

WEDNESDAY, OCTOBER 20, 2004

WORKSHOP
"Stem Cell Technology for Male Infertility Treatment"
Dolores J. Lamb, PhD, Kirk C. Lo, MD, Pasquale Patrizio, MD

This session focused on new techniques used predominantly in the basic science arena but with great translational potential in the future. Dr. Kirk Lo began the session with an overview of stem cell "basics". He described the differences between embryonic stem cells (that are obtained from cell lines derived from blastocysts) and adult stem cells, such as those found in the hematopoietic system, neural, mammary, muscle and testis. Of particular interest are the spermatogonial stem cells. Although their existence had been known for several years based upon studies of restoration of spermatogenesis after exposure to gonadotoxins, Brinster first proved their presence by transplanting spermatogonial stem cells into a sterile mouse with Sertoli cell only syndrome. Dr. Lo presented some of the challenges of using this technology to restore fertility after exposure to chemotherapy, in particular the need for methods for the purification of spermatogonial stem cells. Specific approaches to enrich spermatogonial stem cells ranging from cryptorchidism to flow cytometry were discussed.

Dr. Dolores Lamb then discussed the presence of Leydig cell progenitors (stem cells) in the testis. These were demonstrated by transplantation using methods similar to those described by Brinster and the ability of the cells to colonize and expand in mice lacking the LH receptor gene. These mice, normally unable to produce testosterone, were used a recipients for Leydig cell progenitor transplantation. After transplantation of partially enriched Leydig cells, androgen production was partially restored resulting in restoration of spermatogenesis.

Finally, Dr. Pasqualae Patrizio discussed spermatogonial stem cell transplantation in primates and the potential of transplantation of human cells into non-human recipients. Although some transplantation between species (mouse to rat and visa versa) has been successfully achieved, the more disparate the species, the less successful the procedure. In the human situation, colonization was achieved but completion of spermatogenesis leading to the production of mature sperm did not occur. Clearly

Review of ASRM 2004 cont. on page 4

Review of ASRM 2004 cont.

this research area is progressing rapidly and discussion ensued regarding the feasibility of collecting testicular biopsies from cancer patients prior to their chemotherapy and freezing the tissues in anticipation of the development of techniques for optimal purification and expansion. This would allow the possibility of restoration of spermatogenesis for today's patients in the future once the techniques are improved.

ORAL SESSIONS AND POSTERS

MONDAY, OCTOBER 18, 2004

SOCIETY FOR MALE REPRODUCTION AND UROLOGY SESSION
(O51 - O55)

Williams et al (O-51) presented a study that indicates an increasing paternity rate among men aged 30-39, regardless of race. This most likely reflects couples' delaying having children, which is a common trend. The potential concern with this trend is the recent suggestion that genetic abnormalities may also be related to paternal age. The actual significance of the contribution of paternal age, compared to maternal age, is probably very small. Benoff et al (O-52) investigated angiogenic factor expression in infertile men with varicoceles. They suggested that VEGF and CD34 may be useful as markers to select patients who could benefit from varicocele repair. Lawal et al (O-53) assessed changes in semen quality after clomiphene citrate treatment. They concluded that clomiphene citrate in well selected men with hypogonadism or relative hypogonadism may represent a rational therapy with 64% of infertile men demonstrating a > 50% increase in total motile sperm count. Kolettis et al (O-54) examined the phenomenon of secondary azoospermia after vasovasostomy. Secondary azoospermia was more common in unilateral cases and was related to the obstructive interval. It was not related to any other factor studied. The mechanism by which this occurs remains poorly understood. Pasqualotto et al (O-55) investigated the relationship between past fertility status and current semen parameters. Patients with previous paternity cannot be assumed to have normal semen parameters when evaluated for infertility in the future. This observation also underscores the limitations of a semen analysis as a fertility test.

SOCIETY FOR MALE REPRODUCTION AND UROLOGY SESSION
"Male Factor: ART"
(O109-118)

One of the major themes of this session was the role of the DNA fragmentation test in predicting the need for conventional IVF versus ICSI. Presentation O-110 by C. Adams et al. was a retrospective study of 50 egg donor cycles. DNA fragmentation Index (DFI) for sperm was subdivided into 3 groups: <15%, 15-30% and >30%. Fertilization rates with conventional IVF were similar in all groups (64-74%) with significantly decreased pregnancy and implantation rates in sperm with a DFI > 30% versus the other groups (22 and 13% versus 74% and 30%). DFI was not always performed on the day of the insemination. Egg quality was maximized using donor eggs. In contrast to this, J. F. Payne et al. (O-115) performed a prospective study of 100 cycles of conventional IVF and ICSI. Correlation of outcomes with sperm DFI on the day of the IVF cycle was performed. 9/19 pregnancies were seen with DFIs >27% and only 2/22 pregnancies with the DFI <9%. These results were independent of type of ART and conflict with those seen by C Adams et al in presentation O-110 and other authors. To support that data that DFI does not matter, T. A Elliot et al. (O-117) performed a retrospective review of 68 cycles of ICSI was performed. Outcomes were correlated with sperm DFI categories as indicated in talk O-112. Fertilization rates and pregnancy rates were not significantly different with the different DFI groups. Finally, F. Barnes et al. retrospectively studied sperm with DFI >30% used for IVF cycles. Men were treated for up to 6 months with *Fertile Blend* prior to egg retrieval. No repeat DFI was performed. The pregnancy rate was 11-40%. This paper demonstrated that men with DFI >30% did not need to move on to sperm donations. The role of *Fertile Blend* in allowing this was not known and was unclear if this improved the DFI on the day of the egg retrieval, although suggested.

The other major theme in this session was the possible genetic abnormalities associated with IVF and the role of male factor. P. A. Lanchaster (O-111) first defined the incidence of major congenital malformations and chromosomal abnormalities related to ICSI versus conventional IVF. The national registry of Australia and New Zealand was used. 8, 364 births and terminations since 1996 have been documented. Major malformations from ICSI were 2.2% versus 2.6% with conventional IVF. The author indicated that these were similar to the general population. Certain malformations were twice as common with ICSI than in the general population e.g. tracheo-esophageal fistulae, but caution in interpretation is recommended due to the size of the population studied.

E. Macas et al. (O-114) performed a retrospective study looking at chromosomal problems found by PGD in zygotes from ICSI as a result of male infertility versus conventional IVF. FISH probes for chromosomes X, Y, 18 and 21 were used. The numerical chromosomal anomalies were significantly higher in the ICSI group versus IVF (9.5 versus1.2%) and higher with cryptoozospermia than azoospermia. Sex chromosomal aneuploidy was the most common abnormality found. Autosomal chromosomal abnormalities were not significantly different with ICSI or IVF.

Ma et al. (O-118) compared the outcomes using frozen TESE versus MESA with ICSI and determining the chromosomal abnormalities that resulted. Obstructive (OA) and non obstructive azoospermia (NOA) were compared. TESE and MESA had similar fertilization and pregnancy rates with lower pregnancy rates with NOA. FISH analysis showed higher levels of aneuploidy with the NOA sperm. This paper was limited by the small study groups.

TUESDAY, OCTOBER 19, 2004

SOCIETY FOR MALE REPRODUCTION AND UROLOGY SESSION
(O211-O218)

Loret d Mole and colleagues (O-211) studied the effects of leukospermia and bacteria in the semen on the acrosome reaction in men with teratozoospermia using a calcium ionophore induction of the acrosome reaction. Nearly 20% of individuals failed the acrosome reac-

tion test and the presence of leukospermia correlated with this failure. It is unclear how inflammation of the male genital tract influences the acrosome reaction.

Investigators from the Carrell laboratory (OR-212) sort to test the hypothesis that the expression of protamines 1 and 2 was abnormal in the sperm of infertile males. Their studies indicated that a deregulated P1:P2 ratio of protamines was highly correlated with male infertility. Of note, they found a group of infertile men with a reduced P1:P2 ratio. The deregulation observed appears to be in the P2 (not P1) protamine.

O-213 focused on a description of the pathway for treating non-obstructive azoospermia based upon the testis biopsy and mapping data. The authors used a systematic approach to integrating the results from the diagnostic testis biopsy and fine needle aspiration to enhance sperm retrieval by minimizing the time effort and complexity of the process.

The impact of DNA damage on sperm function is not clearly understood. Presentation O-214 (Lo, et al), demonstrated that there was no significant association between high levels of sperm DNA damage and sperm penetration assay results. Thus, sperm from men with high levels of DNA damage in sperm still possess the ability to bind to the egg membrane, penetration and undergo the initial stages of sperm head decondensation. Indeed, in IVF/ICSI cycles sperm with high levels of DNA damage do not appear to have diminished fertilization rates although high DNA damage is proposed to result in poor embryo quality and increased miscarriage rates.

Men with spinal cord injury have diminished motility when obtained by electro- or vibratory ejaculation. (O-215, Zhu, et al) Platelet-activating factor appears to have a positive relationship with motility. These levels were elevated in the semen of men with SCI compared to age-matched healthy control subjects. The mechanism or relationship of this alteration remains to be identified.

Enclomiphene citrate (Androxal™), the *trans*- or (E) isomer of clomiphene citrate consistently acts as an estrogen antagonist and this study (O-216, Wiehle) was designed to compare this agent at varying doses with Androgel or placebo to increase serum testosterone levels without increasing DHT proportionally. It is proposed that this drug may be a new oral approach to elevate testosterone levels in men with secondary hypogonadism.

SOCIETY FOR MALE REPRODUCTION AND UROLOGY SESSION (O219-O233)

O-216 (Wiehle, et al). This study demonstrated the effectiveness of enclomiphene, a cis-isomer of clomiphene citrate with more anti-estrogen properties. It was shown to produce a diurnal variation of testosterone, free testosterone, LH, and estradiol similar to testosterone gel. However, unlike the gel, there were no increases in DHT levels. The study also demonstrated greater efficacy at higher doses (25 and 50 mg).

O-217 (Bakircioglu, et al). The authors compared recovery rates and ICSI outcomes of sperm retrieved via TESE from patients with non-obstructive azoospermia (NOA) and cryptozoospermia (CZ). Of 240 patients, 207 were NOA and 33 were CZ. TESE was successful in 51% of NOA and 85% CZ (statistically significant difference). There was no significant difference in fertilization, pregnancy, and implantation rates between the two groups.

O-218 (Sagayan, et al). The authors defined oxidative stress (OS) as the loss of the balance of free radical scavengers and free radical generation. They used the sperm DNA integrity test expressed as DNA fragmentation index (DFI). They examined 30 men pre and post anti-oxidant treatment, and demonstrated a small change in DFI post-treatment. They recommended further studies in men with high OS.

O-229 (Parekattil, et al). The authors developed a program to predict TESE success based upon TESE results on 45 patients at their institution. They found that testicular size and semen pH were predictive factors and created a model that could be used on either a PC or PDA. This model was then tested on data from 3 other institutions. The accuracy was approximately 70% based on these parameters. The program is available at www.uroengineering.com .

O-230 (Danziger, et al). This group presented their data regarding genetic testing and subsequent counseling in couples with male factor infertility. They defined testing acceptability, as well as the prevalence of genetic abnormalities in these couples. In reviewing 5 years of results, the authors found that 80% of couples pursued testing, with the vast majority (80%) having CFTR mutations. They also found that the most common reason for not pursuing either testing or counseling was lack of insurance coverage for these services.

O-231 (Mehri, et al). The authors reported on a method of haplotyping DNA from a single sperm. They utilized multiple displacement amplification (MDA) and demonstrated an accuracy of 99% in detecting changes. This technique allows for detection of a single nucleotide mutation, as well as more extensive genomic changes in chromosomes.

O-232 (Sprague, et al). This study examined alterations in the deleted in azoospermia-like (DAZL) protein by using single nucleotide polymorphisms. They demonstrated these polymorphisms in DAZL introns, but not exons, in a cohort of male infertility patients and discussed the potential use of these findings.

O-233 (Sallam, et al). The authors performed a meta-analysis of the use of FSH products in oligoasthenoteratospermia. They found 8 studies that met their inclusion criteria and examined the effect of treatment on seminal parameters, natural pregnancy rates, as well as fertilization and pregnancy rates in couples going through IVF. They found that seminal parameters improved, as did the fertilization and pregnancy rate in IVF/ICSI, thus suggesting a role for this therapy in select couples.

MINI-SYMPOSIUM
"The Rational Use of Ultrasound in the Evaluation of the Infertile Male"
Jay Sandlow, MD

This mini-symposium examined the rational use of ultrasound in the evaluation of the infertile male. Data was presented examining the utility of routine ultrasound in the male infertility evaluation (probably most effective in those men at higher risk of abnormalities, eg cryptorchidism), as well as in the diagnosis of subclinical varicoceles (not cost-effective). Data was also presented regarding the use of transrectal ultrasound for both the diagnosis and treatment of ejaculatory duct obstruction (good for screening, may not be sensitive enough to be used alone for treatment of partial obstruction). Finally, the use of high power Doppler ultrasound for prediction of sperm retrieval in NOA patients was presented. The author also presented his own personal biases and a lively discussion followed (in which no one was badly injured).

Review of ASRM 2004 *cont. on page 6*

Review of ASRM 2004 cont.

MINI-SYMPOSIUM
"Testicular Fine Needle Aspiration Mapping in the Azoospermic Male"
Paul J. Turek, MD

Paul Turek, MD, gave a comprehensive summary of the world experience with FNA mapping at the SMRU Mini-Symposium. The seminar began with a discussion of the unreliability of most clinical parameters, including testis size, biopsies and inhibin levels, in predicting the presence of absence of sperm in nonobstructive azoospermia (NOA. He then presented data suggesting that the ability to find sperm in NOA testis is proportional to sampling intensity and followed this with a brief discussion of several strategies used to overcome this problem. After this introduction, a focused discussion of the history and current status of systematic fine needle aspiration (FNA) followed.

Although the FNA technique is over 100 years old, the idea of "mapping" testes for diagnostic information is what is relatively new. Based on the idea that prostate cancer can be geographically localized to specific areas in the gland, Turek began approaching sperm production in the testis in a similar fashion 8 years ago. He reviewed his first study that showed that when both FNA and biopsies are performed at the same place in the testis, that they generated very similar information. The advantage to the FNA technique, however, is that it is percutaneous and less invasive, thus allowing many more sites of sampling in a single testis. After showing a video of the office-based technique, he discussed its currently evolved form: 11-15 FNA samples in each testis, regardless of size. A summary of the data from 5 centers around the world that use this technique reveals that about 53% of men with NOA will have sperm detected.

Turek generally combines FNA mapping (diagnosis) with TESA and TESE to later retrieve sperm at the time of IVF-ICSI. When preceded by FNA mapping, TESA or TESE can be used to retrieve enough sperm for all eggs at IVF-ICSI in 80% of cases. In the remaining 20% of cases in which very few sperm are found on the FNA map, microdissection TESE used to retrieve sperm with a 90% success rate. In addition, an added value of diagnostic mapping is that it allows for advanced planning of sperm retrieval for several IVF-ICSI cycles if necessary, as the sperm "pockets" are known in advance. Indeed, Turek has a sperm retrieval rate in excess of 90% in second and even third attempts at sperm retrieval after mapping (n=35 cases). The mapping technique has also been applied to guide backup sperm retrieval procedures in men with intermittent or virtual azoospermia who are planning to ejaculated sperm for ICSI, but may not have any to work with on a given day. Turek presented his data on the geographic variability of sperm production in NOA testis as revealed by FNA mapping: 25% intratestis variability sperm in one area and not another) and 20% intertestis variability. Finally, he summarized the value of FNA in finding other testis pathology, in improving the phenotyping of male infertility and the possibility that it can replace the testis biopsy in the future.

WEDNESDAY, OCTOBER 20, 2004

ORAL SESSION
(O234-O238)

In "Multi-institution testing of vasectomy reversal predictor," Drs. S. J. Parekattil and coauthors presented a linear regression model to predict whether or not epididymovasostomy would be required in a microsurgical vasectomy reversal setting from patient age and duration from vasectomy to reversal. The model was designed to optimize sensitivity in an attempt to identify all possible epididmyovasostomy procedures, and cross-validated well when multi-institutional data was used. The model may be accessed at www.uroengineering.com, and Palm and Windows versions are available at that site. In "Relationship between seminal ascorbic acid and sperm DNA fragmentation in infertile men," Drs. Song and coauthors correlated seminal ascorbic acid and total antioxidant capacity to DNA fragmentation as measured by SCSA DNA fragmentation index (DFI), with correlation especially noted in the higher DFI ranges. This interesting preliminary analysis suggests future studies in which ascorbic acid may be investigated as a therapeutic intervention. In "Correlation between normal sperm head morphology (NSHM) and sperm binding potential to the Sperm Hyaluronan- Binding Assay (HBA)," Drs. Worrilow and coauthors observed a correlation between sperm morphology and the Sperm Hyaluronan-Binding Assay (HBA), especially if sperm head morphology was specifically observed. The authors seem most interested in using this technique as a supplement to morphology rather than as a functional assay of potential sperm binding. In "Sperm DNA damage in neat and density gradient fractions of patient and donor semen samples by different chromatin evaluation assays," Drs. Chohan and coauthors demonstrated differing outcomes of various DNA integrity assays including SCSA, TUNEL, acridine orange staining and sperm chromatin dispersion, with sperm in the 90% fraction demonstrating the least DNA damage, indicating the potential benefit of density gradient fractionation in selecting for genomically intact sperm. ⌘

Needs and Objectives for the SSMR AUA Program

Needs:
What practical information Urologist needs to have on Spermatotoxicity:

1. Biochemical and Molecular mechanisms on spermatotoxicity.
2. Impact of medical therapies, including medications, radiation therapy and chemotherapy on sperm.
3. Roles of various nutraceuticals and diet supplements on male reproduction.
4. Impact of recreational drugs, heat and environmental toxins on sperm.

Objectives:
At the conclusion of the session the participant will:

1. Understand the biochemical and molecular principles of spermatotoxicity.
2. Be able to outline the negative fertility impact of various medical therapies on male reproduction.
3. Be able to provide fertility counseling to men who had previously received or who are about the receive radiation and chemotherapy.
4. Understand the potential reproductive benefits of commonly used diet supplements.
5. Be familiar with the potential impact of various recreational and performance enhancing drugs, heat and environmental toxins on male fertility.

Male reproductive medicine represents one of the fastest developing fields in urology. With the increasing popularity and established safety of assisted reproduction, more and more couples are perceptive in seeking fertility counseling and treatment. As a result, there is an increasing need for Urologists to be updated on the various aspects of male reproductive medicine. The main theme of this year's SSMR conference will be on "Spermatotoxicity." A panel of world-renowned experts will be presenting the latest updates on the various factors that can affect sperm function. The purpose of these presentations is to update practicing Urologists on various aspects of spermatoxicity, including the impacts of chemotherapy, radiation therapy, common medications, recreational and performance enhancing drugs, heat and environmental toxins. These topics remain essential facets of the modern management of male infertility. They cover matters that are frequently brought up by infertile couples and are highly relevant to urologists' daily practice. More importantly, information to be presented here is rarely reviewed in an integrated fashion in any other forums. For all practicing Urologists, the quality of their infertility counseling to patients can be greatly enhanced with the information from these presentations. ⌘

Agenda for SSMR at the AUA

Saturday, May 21, 2005
San Antonio, Texas
1:00 p.m. – 5:30 p.m.

Program Chair: Peter Chan, MD

1:00 p.m. **Introduction**
1:05 p.m. **Update on the Molecular/Biological Basis of Spermatotoxicity**
Dolores J. Lamb, PhD
1:35 p.m. **Update on the Biochemical Basis of Spermatotoxicity**
Susan Benoff, PhD
2:05 p.m. **Q&A**
2:15 p.m. **Common Medications and Drugs: How They Affect Male Fertility?**
Larry I. Lipshultz, MD
2:35 p.m. **Impact of Chemotherapy Agents on Male Fertility**
Gunapala Shetty, PhD and Marvin L. Meistrich, PhD
2:50 p.m. **Impact of Radiation on Male Fertility**
Gunapala Shetty, PhD and Marvin L. Meistrich, PhD
3:05 p.m. **Q&A**
3:20 p.m. **Break**
3:35 p.m. **Impact of Environmental Toxins on Male Fertility**
Rebecca Z. Sokol, MD
3:50 p.m. **Spermatotoxicity of Recreational and Body-building Drugs**
Randall B. Meacham, MD
4:05 p.m. **Q&A**
4:15 p.m. **Roles of Nutraceuticals and Phytoestrogens on Male Fertility**
Mark Sigman, MD
4:30 p.m. **Impact of Heat on Male Fertility**
Armand Zini, MD
4:45 p.m. **Q&A**
5:00 p.m. **Annual Business Meeting**

You are Invited to Attend the 2005 SSMR Annual Banquet

Saturday, May 21, 2005
La Margarita Restaurant and Oyster Bar
120 Produce Row
San Antonio, Texas 78207

Register online at www.ssmr.org!

Housed in a two-story New Orleans-style building, La Margarita is one of San Antonio's most favorite restaurants when it comes to sizzling fajitas. With two outdoor patios and a friendly atmosphere, La Margarita is perfect for sipping cool drinks, dining and people-watching while enjoying cultural festivities in Market Square. The restaurant's famed tequila margaritas can wash down any one of the delicious fajita dishes, as well as specialties such as charbroiled chicken, Acapulco-style shrimp in butter-garlic sauce, steak tampiqueño and vegetable enchiladas.

The restaurant is within walking distance from the Marriott Riverwalk Hotel, but Trolley Service will also be available.

6:30 p.m. – 7:30 p.m.	Cocktails
7:30 p.m. – 10:00 p.m.	Dinner

(If you have any dietary needs, please contact the SSMR office at (847) 517-7225 prior to April 29, 2005.)

The dress code is relaxed or business casual.

# of people attending _____ x $65.00 per person = $ _____ (on and before April 29, 2005)

# of people attending _____ x $75.00 per person = $ _____ (after April 29, 2005)

Name:_____

Spouse/Guest:_____

Address:_____

City:_____State:_____ Zip: _____

Phone:_____Fax:_____

Method of Payment:

❒ Check (payable to the SSMR) ❒ Visa ❒ MasterCard

Card #:_____ Exp. Date:_____

Signature:_____

Please return this form to the SSMR office no later than April 29, 2005.

SSMR
1111 N. Plaza Drive, Suite 550
Schaumburg, IL 60173
Phone: (847) 517-7225
Fax: (847) 517-7229
E-mail: ssmr@wjweiser.com
Website: www.ssmr.org

Register online today!

Tentative Schedule of Events for the 2005 SSMR Men's Health Traveling Fellowship

May 21 – 26, 2005 | San Antonio, Texas

All functions from Saturday through Monday are required (unless otherwise noted). Sessions from Tuesday through Thursday are strongly recommended but not required.

SATURDAY, MAY 21
- Fellows Lunch with SSMR Board
  11:30 a.m. – 1:00 p.m. (Marriott Riverwalk –Travis Room)
- SSMR Annual Meeting
  1:00 p.m. – 5:00 p.m. (Marriott Riverwalk – Salon C)
- SSMR Annual Banquet
  6:30 p.m. – 10:00 p.m. (La Margarita Restaurant and Oyster Bar)
  120 Produce Row, San Antonio, TX 78207, (210) 227-7140

SUNDAY, MAY 22
- Society of Sexual Medicine of North America (SMS)
  8:00 a.m. – 2:00 p.m. (Marriott Riverwalk – Salon A-C)
- SMS Lunch
  12:00 p.m. – 1:00 p.m. (Marriott Riverwalk – Salon D-F)

Post Graduate Course (*optional*)
- Office Evaluation of the Male and Female Patients with Sexual Dysfunction: Wayne Hellstrom
  6:00 a.m. – 7:00 a.m.

MONDAY, MAY 23
- Career Development Breakfast (Attendance required)
  7:00 a.m.

Plenary Session (*optional*) (Convention Center)
Panel Discussion – Varicocelectomy
8:00 a.m.
- State-of –the-Art Lecture: IVF and ICSI
  Larry Lipshulz
  8:40
- Association of LUTS and Sex
  Steven Kaplan
  11:10
- Obesity and Erectile Dysfunction
  Christopher Saigal
  11:30

Poster and Podium (*optional*) – (Convention Center)
- Sexual Function
  8:00 a.m. – 12:00 p.m.
- Sexual Function/Peyronies
  1:00 p.m. – 5:30 p.m.

Post Graduate Course (*optional*)
- New Advances in Erectile Function Therapy
  6:00 p.m. – 8:00 p.m.

TUESDAY, MAY 24

Plenary Session (*optional*) (Convention Center)
- Rehabilitation of Erectile Function After Radical Prostatectomy
  Francesco Montorsi
  10:00 a.m.

Post Graduate Course (*optional*)
- Premature Ejaculation
  Ira Sharlip
  6.00 a.m. – 7:00 a.m.
- **Diagnosis and Treatment of the Infertile Male**
  Larry Lipshultz and Paul Turek
  (Convention Center – 61C)
  (Strongly recommended)
  7:30 a.m. – 9:00 a.m.
- Practical Guide to the Management of Erectile Dysfunction
  Jonathan Jarow
  6:00 p.m. – 8:00 p.m.

Podium and Poster (*optional*) (Convention Center)
- Sexual Function
  8:00 a.m. – 12:00 p.m.
- Sexual Function
  1:00 p.m. – 5:30 p.m.
- Infertility Therapy
  1:00 p.m. – 5:30 p.m.

WEDNESDAY, MAY 25

Post Graduate Course (*optional*)
- Peyronies Disease
  Allen Seftel
  6:00 a.m. – 7:00 a.m.

Podium and Poster (*optional*) (Convention Center)
- Infertility: Physiology
  8:00 a.m. – 12:00 p.m.
- Infertility: Evaluation
  1:00 p.m. – 5:30 p.m.

THURSDAY, MAY 26

Take home messages for infertility

Please Note: The dates and times of these activities are tentative, and might change after the final AUA schedule is determined.

Sincerely,
Ajay Nangia, MD
Chair, SSMR Traveling Fellowship Award
Ajay.K.Nangia@Hitchcock.org

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Mark Your Calendars!

30th Annual Meeting of the American Society of Andrology
April 2 – 5, 2005
Grand Hyatt Seattle
Seattle, Washington

American Urological Association Annual Meeting
May 19 – 25, 2004
San Antonio, Texas

SSMR Meeting at the AUA Annual Meeting
May 21, 2005
1:00 p.m. – 5:30 p.m.
San Antonio, Texas

SSMR

1111 N. Plaza Drive, Suite 550
Schaumburg, IL 60173-4950