SSMR NEWS

Fall **Society for the Study of Male Reproduction** 2009

President's Message

Robert E. Brannigan, MD

Greetings, fellow SSMR Members,

This past year has been an outstanding one for the SSMR. Our annual meeting here in Chicago in April was very successful, and preparations are well underway for our 2010 annual meeting in San Francisco. As I will detail below, 2009 has been a very busy one for the SSMR. Our organization, through the efforts of our membership, is having a positive effect by way of patient education and advocacy, mentoring of young trainees interested in the field of male reproductive medicine, and collaborative efforts at the national level with other healthcare organizations that share a vested interest in men's health.

Enclosed in this newsletter are several scientific and plenary session summaries from the 2009 AUA Annual Meeting. These summaries were prepared by the SSMR/SMSNA Men's Health Traveling Fellowship award winners and the SSMR/SMSNA mentors with whom they were paired. For the 2009 program, 31 individuals applied for the SSMR/SMSNA Men's Health Traveling Fellowship, and ultimately 10 applicants were awarded traveling fellowships. In case you are not familiar with this program, the SSMR and SMSNA team together to select award recipients, and these traveling fellows are hosted for a series of academic and social gatherings during the AUA Annual Meeting. The goal of the program is to expose these young physicians to our field and to provide them with an opportunity to meet and interact with leaders in male reproductive and sexual medicine. In addition to attending the SSMR and SMSNA annual programs and the SSMR Banquet, the participants are also hosted at a series of less formal networking gatherings. The SSMR and SMSNA both have a rich history of fostering career development, and the combined efforts of our two organizations in this program advance this outstanding tradition. I encourage each of you to remind interested individuals from your respective institutions to apply for this coming year's fellowship program. On behalf of the SSMR, thank you to the SMSNA board of directors and membership for their partnership and invaluable support of this worthwhile program.

Several SSMR members have been involved in important healthcare initiatives and deserve special recognition in this newsletter. Stan Honig, MD, past president of the SSMR, has helped spearhead a national campaign calling for increased public awareness of male reproductive health issues. He was involved in the development of a new male infertility patient information pamphlet, and he was interviewed by several local and national media outlets regarding this male infertility initiative. Ajay Nangia, MBBS, SSMR vice-president, is working with the Centers for Disease Control, the American Fertility Association, and the Men's Health Network on male reproductive health initiatives as well. The collaborative venture, named the Men's Reproductive Health Coalition, is in its organizational stages. Large potential exists here for positive outcomes on many fronts, given the combined approach being employed. The two above mentioned efforts exemplify the many ways that SSMR members strive to engage the public and professional sectors of our health care system; such endeavors are important, because they help to heighten awareness of male reproductive health and facilitate collaborative solutions to the numerous challenges we face within our field.

The 2010 SSMR program is being chaired by Edmund Sabanegh, MD and is entitled, "Beyond the Event Horizon –Where are We Going with Male Infertility?" This program promises to provide us all with a unique glimpse into the future of male reproductive medicine and surgery as speakers offer their perspectives on the up and coming clinical and scientific activities we will engage in "down the road". Dr. Sabanegh has put much time and effort into carefully crafting this program, and I am confident that it will prove to be one of the most thought-provoking SSMR sessions in recent years. This program is being held on Tuesday, June 1, 2010 — please mark you calendars now.

I wish to personally thank my fellow SSMR Board members for their work on behalf of our society. They are: Ajay Nangia, MBBS,

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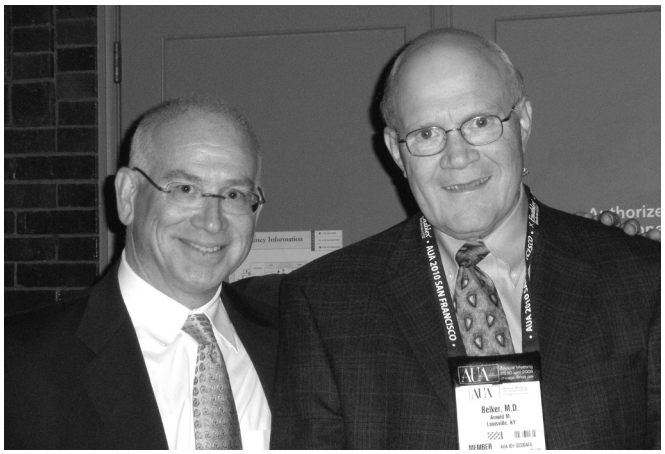
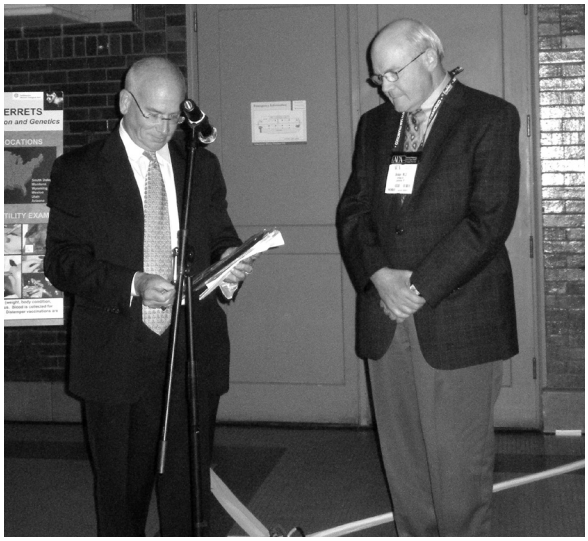
Vice President; Keith Jarvi, MD, Secretary; Natan Bar-Chama, MD, Treasurer; Past Presidents Stan Honig, MD and Jay Sandlow, MD; Members at Large Ed Sabanegh, MD and Paul Shin, MD; Director of Development Harris Nagler, MD; and Director of Traveling Fellowship Trey Brugh, III, MD. Each of these board members has actively contributed to the ongoing efforts of the SSMR and has helped ensure the stability and visibility our organization.

I would like to acknowledge the invaluable assistance of the staff of WJ Weiser and Associates, Inc. In particular, Ms. Debbie Roller continues to serve as an incredibly dependable, knowledgeable and resourceful liaison. Thank you, Debbie! I would also like to personally thank Ms. Ruth Gottmann for her assistance in assembling this newsletter.

In closing, I encourage each of you to remind colleagues and friends who may not be current members of the SSMR to consider joining. Membership is the lifeblood of every organization, and the SSMR is no exception. Opportunities for participation within the SSMR abound at numerous levels, providing physicians and scientists at all stages of their career an opportunity to help shape the future of our field. Thank you. ⌘

Sincerely,
Robert E. Brannigan, MD
President, the Society for the Study of Male Reproduction





Congratulations to the 2009 Distinguished Reproductive Urology Award winner: Arnold M. Belker, MD.

2009 ASRM Events of Interest

American Society for Reproductive Medicine
65th Annual Meeting
October 17 – 21, 2009
Georgia World Congress Center
Atlanta, GA

Sunday, October 18, 2009
Post Graduate One-Day Course
Male Reproduction in 2009: New Clinical and Scientific Paradigms
Faculty: Nancy L. Bracket, PhD, HCLD; Dana A. Ohl, MD; Trevor Cooper, PhD; Dolores Lamb, PhD, HCLD

Monday, October 19, 2009

9:00 a.m. – 9.45 a.m.
The President's Guest Lecture: What Happens When Good Doctors Confront a Broken Health Care System
Darrell Kirsch, MD

1:15 p.m. – 2:15 p.m.
Interactive Session: Treatment of Male Testosterone Deficiency During and After the Reproductive Years
Presented by the Society for Male Reproduction and Urology
Abraham Morgentaler, MD
Larry I. Lipshultz, MD

1:15 p.m. – 2:15 p.m.
Roundtable Luncheons: Male Reproduction and Urology

RTM11. New Concepts in Male Infertility
Sandro C. Esteves, MD, PhD

RTM12. Methods of Semen Retrieval in Men with Spinal Cord Injury
Charles M. Lynne, MD

RTM13. Medications that Impair Male Reproduction
Ajay K. Nangia, M.D.

4:15 p.m. – 6:15 p.m.
ASRM Symposium
Male Reproductive Health: What Do We Know/What Do We Need to Know?
Lawrence S. Ross, MD
Larry I. Lipshultz, MD
Peter N. Schlegel, MD

5:45 p.m. – 6:15 p.m. **Society for Male Reproduction and Urology Mini-Symposium**
Testosterone and Cardiovascular Disease: The Chicken or the Egg?
Edward D. Kim, MD

Tuesday, October 20, 2009

9:45 a.m. – 10:30 a.m. **Plenary Session 3**
Regenerative Medicine:
New Approaches to Healthcare
Anthony Atala, MD

1:15 p.m. – 2:15 p.m. **Interactive Session**
Debate: When is Genetic Testing of Infertile Men Indicated?
Mark Sigman, MD
Robert D. Oates, MD
Moshe Wald, MD

1:15 p.m. – 2:15 p.m. **Roundtable Luncheons:**
Male Reproduction and Urology

RTT18. Treatments for Azoospermia: Current Decision Analysis
Peter N. Schlegel, MD

RTT19. Optimizing Reproductive Health in Men with Spinal Cord Injury
Nancy L. Brackett, PhD

2:45 p.m. – 3:30 p.m. **Plenary Session 4:**
William C. Andrews Lecture
Epigenetic Basis for Developmental Origins of Health and Disease
Professor Mark Hanson, MA, Dphil, Cert. Ed., FROCG

4:15 p.m. – 6:15 p.m. **Abstract Sessions**
Society for Male Reproduction and Urology

5:45 p.m. – 6:15 p.m. **Society for Male Reproduction and Urology Mini-Symposium**
Future Directions in Andrology Training
Joel L. Marmar, MD

6:15 p.m. – 7:00 p.m. **Members' Meetings**
Society for Male Reproduction and Urology

Wednesday, October 21, 2009

9:00 a.m. – 9:45 a.m. **Plenary Session 5**
American Urological Association Bruce Stewart Memorial Lecture
The Genetic Basis of Severe Male Factor Infertility: What Every Reproductive Clinician Needs to Know
Presented by the Society for Male Reproduction and Urology
Robert D. Oates, MD

1:15 p.m. – 2:15 p.m. **Meet the Professor**
The Genetic Basis of Severe Male Factor Infertility
Robert D. Oates, MD

1:15 p.m. – 2:15 p.m. **Roundtable Luncheons**

Male Reproduction and Urology

RTW11. Microsurgical Pearls for Vasectomy Reversal and Varicocelectomy
Marc Goldstein, MD

RTW12. Evaluation of Sperm Damage: Beyond the World Health Organization
Ashok Agarwal, PhD

RTW13. Sperm Sorting: Laboratory Consideration
David Karabinus, PhD

RTW14. Environmental Factors that Impair Male Reproduction
Susan H. Benoff, PhD

RTW15. Varicoceles and ART
Edmund S. Sabanegh, Jr., MD

Reproductive Endocrinology and Infertility

RTW28. Clomiphene Treatment of Azoospermia in Men
J.C. Trussell, MD

3:45 p.m. – 5:45 p.m. **Abstract Session**
Male Reproduction and Urology

5:15 p.m. – 5:45 p.m. **Society for Male Reproduction and Urology Mini-Symposium**
Gender Differences in the Impact of Environmental Toxins on Reproductive Health
Susan H. Benoff, PhD ⌘

2009 SSMR Annual Meeting at the AUA Course Summaries

2009 SSMR Annual Meeting at the AUA
Course Summaries

State-of-the-Art Lecture: The Impact of Toxicants on Male Reproductive Health
Speaker: Larry I. Lipshultz, MD
Monday, April 27, 2009
Reviewer: Shaheen Alanee Abdullah

Dr. Lipshultz presented a review of the literature and his personal experience of the effect of environmental toxins on the reproductive system. According to Dr. Lipshultz, environmental toxins are proving to have a strong influence in the process of development and function of the genital system. There are multiple mechanisms for the effect of these toxins on human health: the two well documented of which are hormonal disruption and interference with cell meiosis and apoptosis. Four examples of these toxins are: Bisphenols A, Pthalates, glycol ethers, and DBCP. Almost all of these compounds potentially produce congenital abnormalities in genital organs, alter their function and may even be a predisposing factor for cancer development. Considering that there is no cure and effects are permanent, prevention is the best treatment. Government and citizens are acting to decrease the exposure to these compounds through regulations. As urologists and scientists, our goal should be to be on the lookout for such compounds and actively assist in raising the public awareness about their dangerous effects.

Panel Discussion: Declining Sexual Function in the Aging Male
Moderator: Craig S. Niederberger MD
Panelists: Daniel H, Willaims IV, MD; Ajay K. Nangia MD
Monday, April 27, 2009
Reviewer: Shaheen Alanee Abdullah

It is confirmed that some of the effects of age on males include increasing incidence of BPH, ED and CAD. Strong interactions between these problems and the changes of aging in males make it hard to decide what the cause is and what the effect is. A good start would be to think that they share the same risk factor and exacerbate each other. A general statement seems to be forming about the function of ED as a sign for the more life threatening condition of CAD. A general opinion is also forming regarding the role of PDE-5 inhibitors not only in treating ED, but also preventing, treating or ameliorating the effect of the other aging related health problems through their vascular and endothelial effects

Point-Counterpoint: Decision Making in the Severely Oligospermic Male with a Varicocele: Factors that Affect Recommendations
Moderator: Stanton Honig, MD
Debaters: Jay I. Sandlow, MD; Harris M. Nagler, MD
Monday, April 27, 2009
Reviewer: Shaheen Alanee Abdullah

In a very practical session, the panel emphasized that clinically palpable varicocele repair is beneficial in even the most severe forms of sperm production defects (azoospermia). Two important exclusions, however, need to be made before varicocele repair: a genetic cause for infertility (Y chromosome microdeletions, karyotype abnormalities) and genital duct obstruction as both carry poor prognosis to the success of surgery. Assessing the possible benefit from varicocele repair should include person and disease characteristics. Female age is a significant predictor of the success or failure of the ultimate goal of treatment, pregnancy. Yet even in cases of advanced female age and IVF being the more successful option, varicocele repair may be appropriate as it has been shown in studies to improve the chance of success of IVF and to even possibly replace it with IUI. Practical points during the work up and the management of varicocele in infertility patients include:

1) Scrotal ultrasound is not routinely indicated in the work up of infertility to identify varicoceles
2) There is no need to repair unilateral subclinical varicocele as this would not improve the seminal fluid parameters
3) There is no need to repair a right subclinical varicocele in a patient with a palpable left varicocele; as this would not change the success rate of the surgery and may come with added morbidity.

Diagnosis and Management of Hypogonadism
Speaker: Abraham Morgentaler, MD
Tuesday, April 28, 2009
Reviewer: Bryan Bruner

Hypogonadism was defined as a clinical syndrome with a characteristic set of symptoms associated with decreased androgen levels. Emphasis was properly placed on the disparity that exists on the diagnosis and treatment of the disease state since approximately 95% of hypogonadal men are undertreated. The prevalence was shown to increase significantly with each decade of life. This is partly due to a significant increase in the sex hormone binding globulin (SHBG) with age as well as decreased production of testosterone. The diagnosis of the disorder has become an area of confusion with many different biochemical tests to measure testosterone levels, many different cut-off threshold levels, and an international value system that differs not only in units of measurement but also in cutoff threshold from the values used in the United States. The gold standard lab measurement of hypogonadism remains equilibrium dialysis to determine free testosterone. However, many labs continue to use calculated or radioimmunoassay free testosterone levels, which are much simpler to measure since equilibrium dialysis

takes 18 hours to perform. These tests are viewed as less accurate than the equilibrium dialysis technique but the degree of difference may not be as significant as often believed. Dr Morgantaler showed data to support this. The benefits of therapy were addressed showing the crucial effects it can have on sexual function, increased muscle mass, bone mineral density, increase in lean body mass, improved mood, and increased cumulative survival. The risks were mentioned with the most common side effect being erythrocytosis in 5% of men. Two important points were made about delivery systems. First, up to 20% of men on testosterone gel therapy never reach therapeutic levels and second was that the optimal time to measure testosterone after intramuscular therapy is 1-2 weeks. Finally, Dr. Morgentaler discussed the issue of testosterone and risk of prostate cancer. He showed that men with hypogonadism are unlikely to be at any higher risk of prostate cancer than men with normal testosterone levels if replacement is performed to eugonadal levels. Also he showed his data in treating men with prostate cancer (e.g post radical prostatectomy and PIN) with no increased risk of disease progression. Informed discussion and consent is required from the patient in view of the off label use in this setting.

Physiology of the Hypthalamic-Pituitary-Testicular Axis
Speaker: Sijo J. Parekattil, MD
Tuesday, April 28, 2009
Reviewer: John S. Colen

The topic for the Annual Meeting of the SSMR at the 2009 AUA in Chicago was "Endocrinology of Male Reproduction". At the beginning of the session, Dr. Sijo J. Parekattil presented an overview entitled "Physiology of the Hyothalamic-Pituitary-Testicular Axis". Dr. Parekattil nicely summarized the three stages of this regulatory system: the pulsatile release of GNRH from the hypothalamus stimulating the anterior pituitary to release LH and FSH, finally resulting in testosterone production and spermatogenesis. This system has multiple regulatory factors including feedback inhibition by testosterone and inhibin, the pulsatile nature of GNRH release and several other chemicals, including other hormones such as prolactin. Dr. Parakattil provided an excellent overview of the H-P-T axis which was a good reference point for the remainder of the discussions.

Hypogonadotropic Hypogonadism: Update in Diagnosis and Management
Speaker: John K. Amory, MD
Tuesday, April 28, 2009
Reviewer: John S. Colen

The next speaker, Dr. John K. Amory, presented a lecture entitled "Hypogonadotropic Hypogonadism: Update on Diagnosis and Management: Are There Any New Treatments on the Horizon?". Hypogonadotropic hypogonadism, defined as low FSH, LH and testosterone, affects a small, but treatable group of infertile men. Dr. Amory discussed the treatment options for these patients which include pulsatile GNRH, injections of gonadotropins (HCG and/or FSH) and anti-estrogens. Dr. Amory stressed the importance of patience: most patients will not have sperm in their ejaculate until 7 months following the initiation of therapy and will not impregnate their partners until 26 months following the initiation of therapy. Dr. Amory continued his lecture with a discussion on ant-estrogens which include Clomid, an estrogen receptor blocker, and anastrazole, an aromatase inhibitor. Some studies have shown these drugs to be effective in the treatment of hypogonadotropic hypogonadism, although more placebo controlled and head-to-head studies need to be performed. Finally, novel agents being developed for this patient population include oral LH receptor mimetics. These agents appear promising.

Anabolic-Steroid-Induced Male Infertility
Speaker: Larry I. Lipshultz, MD
Tuesday, April 28, 2009
Reviewer: John S. Colen

Dr. Larry I. Lipshultz followed with a talk entitled "Anabolic-Steroid-Induced Male Infertility". Anabolic steroids, by definition, have both anabolic and androgenic components, and the goal of most commercially available steroids is to increase the anabolic properties. Anabolic steroids cause atrophy of the germinal epithelium and suppress spermatogenesis leading to azoospermia typically after 10 weeks of use. Dr. Lipshultz went on to discuss methods to recover spermatogenesis in the steroid suppressed patient. Several studies were cited showing that HCG could be an effective treatment for these men. Of note, the rate of sperm return appears to be associated with the method of testosterone or steroid delivery, as transdermal delivery systems lead to a longer delay in return of sperm in the ejaculate. Dr. Lipshultz used the final portion of his lecture to discuss a difficult clinical dilemma: maintaining fertility in men who must use exogenous testosterone. In these men, low-dose HCG can be effective in maintaining adequate semen parameters.

Treatment of Testosterone in the Infertile Hypogonadal Male
Speaker: Darius A. Paduch, MD, PhD
Tuesday, April 28, 2009
Reviewer: Genoa Ferguson

The lecture titled "Treatment of Testosterone in the Infertile Hypogonadal Male", given by Darius A. Paduch, was a great update in both the diagnosis and treatment of infertile hypogonadism. In regards to initial diagnosis of hypogonadism, it must be remembered that there are many different assays on the market with many different normal ranges, often with a low value that many would consider inappropriate. We must use age-adjusted norms with more appropriate ranges when diagnosing these gentlemen. The technology of treatment continues to evolve and many options are being evaluated. This lecture focused on gonadotropins, selective estrogen receptor modulators (SERMs), and social habit modifications.

For men with hypogonadotropic hypogonadism, use of gonadotropins continue to be the treatment of choice. Various preparations of LH, FSH, and GnRH substitutions have been used successfully to increase sperm production in these men. Additionally, HCG (an LH-like gonadotropin) is also being used to stimulate the Leydig cells to produce testosterone in combination with other gonadotropins to further increase sperm production. However, HCG does lead to an increase in estradiol, and can cause gynecomastia (especially in older men). Men with low levels of inhibin B may benefit from adding FSH to their treatment plan.

SERMs, which bind to the estradiol receptor, block estrogen feedback at the pituitary. This increases LH and FSH production, which thus increases testosterone production and leads to increased sperm produc-

tion. Clomiphene, tamoxifen, and raloxifene have all been evaluated for use in hypogonadal men for infertility. Studies by Hussein have demonstrated increased sperm counts and testosterone levels following clomiphene treatment, while Patenkar et al demonstrated increased sperm density and increased sperm motility with treatment. Some men may see a decline in sperm concentrations during treatment with clomiphene which is thought to be due to a rise in estradiol levels. A concern about SERMs that must be remembered is the possible adverse events that may come along with their use. Thromboembolic events and osteoporosis are both side effects that have been seen in their use in breast cancer and must be monitored for.

A growing problem in America is obesity, a cause of secondary hypogonadism. As body fat increases, the conversion of testosterone to estradiol via aromatase increases. This inhibits secretion of LH and FSH from the pituitary, thus reducing testosterone synthesis and sperm production. Recent investigation into using anastrazole, an aromatase inhibitor, has been shown in case reports to both increase testosterone levels and sperm counts in morbidly obese patients. Additionally, previous reports by Raman and Schlegel in 2002 demonstrate improved sperm density and number of motile sperm with its use.

Future research will be needed to further elucidate both the efficacy of these treatments, and which patient populations will benefit from each combination. As we continue to develop these treatments, we will further be able to better understand the mechanisms of fertility.

Fertility Counseling and Treatment Prior to Cancer Treatment
Speaker: Daniel H. Williams, IV, MD
Tuesday, April 28, 2009
Reviewer: Genoa Ferguson

This year's lecture, "Fertility Counseling and Treatment Prior to Cancer Treatment" given by Daniel H. Williams, IV, was an excellent review of fertility preservation options for young men who may be undergoing chemotherapy or radiation. With over 20,000 men per year undergoing chemotherapy or radiation, and with improved long-term survival rates across the board for men with cancer, it is important that these men understand their potions to father children in the future. While sperm-banking prior to treatment is currently the least expensive and most accessible option, other new technologies are under investigation. For some patients, sperm-banking is not an option, as they may have tumor-induced azoospermia even before chemotherapy or they may be pre-pubertal. "Onco-TESE", is the pre-chemotherapy extraction of sperm in azoospermic men for the intention of future use in ICSI. While this has been done in only limited studies, they have shown some success and it is a promising new method. Additionally, the idea of hormonal suppression of spermatogenesis during chemotherapy or radiation treatment, using GnRH agonists and exogenous testosterone, is another option which is being evaluated. By suppressing spermatogenesis during treatment, the gonadal toxicity is significantly decreased, allowing for theoretical recovery of fertility after treatment is complete, using GnRH analogs. While sperm banking continues to be the best option, technology continues to develop to increase options. It is our job to spread the word about sperm-banking to primary care physicians, oncologists, and radiation therapists to ensure that men are allowed to continue their fertility, despite their cancer therapy.

Insights into Androgens and Erectile Function
Presenter: Wayne Hellstrom, MD
Tuesday, April 28, 2009
Reviewer: Gregory Lowe

The well recognized decrease of free testosterone with male aging has gained popularity in recent public press such as Newsweek. In the United States, annual sales of testosterone replacement therapies now approach 1 billion dollars annually. As further studies emerged, it has become apparent that testosterone is necessary for more than libido and erectile function. Testosterone is known to effect bone mineralization, metabolic effects, and cognition. Even with the improved knowledge of testosterone benefits, the role of testosterone in erectile dysfunction (ED) remains controversial.

A clear correlation between testosterone level and ED does not exist. As the role of phosphodiesterase inhibitors expanded, the effect of testosterone in ED has been reviewed. Castrated rabbits have regained erectile function after replacement with testosterone. An increase in intracavernosal pressure without an increase in systolic blood pressure has been noted in castrated animals replaced with testosterone. In animal models, dorsal nerves have been noted to be less robust after castration, and to regain myelination with replacement. The same has been seen with muscle. In a rabbit model, increased adipocytes have been seen between the tunica and cavernosal spaces with castration. This has been noted in diabetic patients as well. Upon replacement of testosterone, the rabbits decrease this adipocity. Androgens have been found to effect levels of nitric oxide synthetase in endothelial cells and phosphodiesterase 5 levels in muscle cells. Clearly androgen deficiency alters cell signaling, structure and function of penile tissue.

Dr. Bhasin presented a theory in 2008 suggesting testosterone inhibits stromal precursor cells which could lead to increased adiposity. The increased adipocytes noted sub-tunical could provide a mechanism for venoocclusive dysfunction which is not able to be recovered with phosphodiesterase inhibitors. To this point, Dr. Yassin presented in the Journal of Sexual Medicine in 2006 a group of 12 men with DICC proven venous leak erectile dysfunction, of which 5 improved with androgen replacement. Several clinical papers exist which note patients who fail phosphodiesterase inhibitors can be salvaged with testosterone addition.

Dr. Hellstrom concluded with a take home message that 2.1 to 21% of patients have coexistent ED and androgen deficiency. Replacement of testosterone may be curative in some patients. Currently there is no consensus on which therapy to pursue first in these patients, but checking a morning testosterone is warranted in men presenting with ED.

Update on Non-Surgical Male Contraception: What Should We Expect in the Next 10 Years?
John Amory, MD
Tuesday, April 28, 2009
Reviewer: Gregory Lowe

One-half of 6.4 million annual pregnancies in the United States are unintended and lead to 40% of these resulting in abortion. Vasectomy and condom use account for 30% of all current contraception. Testosterone is known to function in suppression of LH and FSH, reducing signaling for spermatogenesis and markedly decreasing sperm concentrations. Condoms are considered fairly reliable, with failure rates of 10-15% per year. A "male pill" has been in the works for nearly 30 years. Hormonal formulations compose the majority of these prior efforts.

Hormonal existing formulations have a similar onset to vasectomy of 2-4 months, and have a similar recovery pattern. These function conceptually similar to female hormonal contraceptions. Testosterone preparations provide negative feedback, but to further limit intratesticular testosterone levels the addition of progestins or GnRH antagonists have been added. Two large WHO studies giving weekly testosterone enanthate have been performed. In the initial study, only two-thirds of men were able to achieve azospermia. Twelve percent of patients discontinued treatment likely due to the weekly schedule. In the second study, there was a 95% overall rate of men obtaining levels <5 M/ml. Stratifying based on semen levels, there is 99% effectiveness for men obtaining levels <1 M/ml and a failure rate of 4% for men obtaining rates <5 M/ml. Side effects noted included increased muscle mass, acne, 25% measurable decrease in testicular size and 10% reduction in serum HDL. No PSA increase, prostate size increase or aggression was noted. Combinations of testosterone undecanoate and progestins have shown more spermatogenesis suppression but not a more rapid decline of sperm concentrations. Two European studies of testosterone decanoate/undecanoate and noted 90% of men obtaining <1 M/ml of sperm, however no companies are actively pursuing this therapy.

Hormonal novel compounds include dimethandrolone undecanoate and non-steroidal androgenic compounds (SARMs). Dimenthandrolone undecanoate is an orally available androgen not able to be reduced by 5-α reductase and has been shown to suppress rabbit spermatogenesis.

Non-hormonal therapies are also being evaluated. Male monkeys have been immunized against Eppin and noted to become infertile. Some animals did need booster injections and 2 of 7 did not recover spermatogenesis however. Knock-out mice for Izumo, a sperm fusion protein, are noted to be infertile but the sperm are suitable for ICSI. Anti-izumo antibodies prevent human sperm from fusion with zona-free hamster eggs in vitro. Finally, work has been performed to examine retinoic acid synthesis antagonism and retinoic acid receptor antagonists and found to induce infertility in mice. These mice were able to recover fertility after discontinuing therapy.

Continued progress will likely lead to an acceptable male contraceptive and with over 50% of men surveyed reporting they would be willing to use such a product, we may be able to lower the number of yearly unintended pregnancies and abortions.

Moderated Poster Session #69 (Posters 2010-2018)
Wednesday, April 29, 2009
Reviewer: Erin McNamara

During the last day of the AUA annual conference, the focus in the moderated poster session was on treatment for infertility. In brief summary, there were three themes in the first group of posters: 1) role of training in microsurgery; 2) optimizing sperm extraction and fertility; and 3) ways to apply infertility treatment to different groups of patients. Some of the abstracts are highlighted below.

Two interesting abstracts looked at the role of training in microsurgery. Yap, et al (Abstract #2014) surveyed chief residents and recent graduates to evaluate correlation between training in residency and practice patterns. Their findings showed that most people consider fellowship training important when performing vasovasostomy (VV), especially if residency training was lacking (60%). Those who performed 10 or more VV in residency did feel comfortable performing this surgery in practice. Williams IV, et al (Abstract #2011) looked at outcomes in vasectomy reversal for recent fellowship trained microsurgeons. Ten microsurgeons were evaluated in the procedures they completed their first two years of practice. Results showed that overall potency rate for all reversals was 90.7%, which is comparable to more experienced surgeons. These abstracts emphasize that training is the important key in successful microsurgery.

Many of the posters looked at ways to optimize fertility treatment, whether through improving surgical techniques for sperm extraction or identifying factors that can affect reversal. Wehbi et al (Abstract #2013) looked at men with a high DNA Fragmentation Index (DFI) and randomized them to two groups, testicular extraction of sperm (TESE) or ejaculated sperm. The preliminary results show a trend toward improved fertility in the TESE group (57% vs 25%) and a decrease in DFI in this group. This trial has yet to be completed. Grober et al (Abstract #2015) did a retrospective study on vasal obstructive interval to see if this influences vasectomy reversal outcomes. Their findings showed that although it determined what type of procedure was completed, vasal obstructive interval was not an independent factor in patency rates or semen quality.

Ramasamy et al, (Abstract #2010) evaluated men with Klinefelter syndrome and treated those with testosterone levels <300ng/dl prior to sperm extraction. The results showed that SRR (sperm retrieval rate) with mTESE (microsurgical testicular sperm extraction) were greatest in the men with normal testosterone who needed no treatment (86%) but were improved in men who had an increase in testosterone >100ng/dl when compared to men who did not have improvement on therapy (72% vs 58% respectively).

Another group of patients that deal with infertility are those with germ-cell testicular cancer who have undergone unilateral or bilateral orchiectomy. Salonia et (Abstract #2016) al found that the minority of men with germ cell tumors were advised to bank sperm (39%) and only 25% of men decided to bank sperm and 5% used IVF. The only thing that was associated with lower IVF use was fatherhood prior to orchiectomy.

These posters generated much lively discussion over technique and ways to evaluate and treat infertility with the promise of interesting research and papers to be generated from this meeting.

Moderated Poster Session (Posters 2020-2029)
Wednesday, April 29, 2009
Reviewer: Ken Smith

At this year's AUA meeting in Chicago, infertility therapies were the focus of a broad range of research studies. Drs. Harris Nagler and Craig Niederberger moderated a well-attended session which contained original research from several international groups describing the clinical efficacy and application of TESE, varicocele repair, and ejaculatory duct obstruction repair. This article provides a brief summary of this session.

Dr. Fazili and colleagues from Chicago presented a retrospective review of 10 men with malignancy who were referred for fertility preservation prior to oncologic treatment. Sperm was successfully retrieved by micro-TESE in 6 of 8 men with testicular cancer and 1 of 2 men with lymphoma. Therefore, fertility preservation in male cancer patients with azoospermia at the time of cancer diagnosis can often be managed with micro-TESE and cryopreservation. Dr. Lipshultz's group from Houston presented data describing IVF/ICSI outcomes in patients using sperm from either the ejaculate in cryptospermic patients or from TESE. An

analysis of 33 ICSI cycles using ejaculate from cryptozoospermic men compared to 63 ICSI cycles using sperm from TESE was performed: the mean fertilization rate was approximately 53 % for both groups. These authors conclude that it is reasonable to use ejaculated sperm on the day of ICSI with TESE only as a backup. Dr. Kanto and colleagues from Japan performed a study of 22 spinal cord injured men. TESE was successful as sperm retrieval in 19 of the 22 men (86%). There was no significant difference in pregnancy rate at the first ICSI between SCI couples and obstructive azoospermic control couples (68%). However pregnancy rate per fresh TESE was significantly higher than for frozen/thawed sperm-ICSI in SCI couples (64 vs. 25%). Fresh TESE-sperm appears advantageous for SCI couples desiring pregnancy. Dr. Akbal and colleagues from Turkey examined IIEF scores before and 3 months after TESE in 66 men with non-obstructive azoospermia. The mean IIEF score in successful case was 20.2 before the procedure and 23.0 after the procedure. The mean IIEF score in successful cases was 21 before the procedure and 17.9 after the procedure. Post-TESE IIEF scores in men with high serum FSH levels and in cases with atrophic testes were significantly lower compared to pre-TESE scores. Therefore, unsuccessful TESE procedure may have a negative impact on erectile function. Finally, Drs. Honig and Sadeghi-Nejad presented their work on the use of TESE for extracting sperm during a window-of-opportunity in young adolescents with Klinefelter's syndrome. Bilateral TESE was performed in 5 patients who had been referred for fertility evaluation prior to androgen supplementation. All karyotypes were non- mosaic. Sperm was retrieved 25% of testes undergoing micro-TESE and 50% of tests undergoing standard TESE, showing that sperm can be obtained with a reasonable success rate in adolescent Klinefelter's patients.

Varicocele, the most common factor associated with male infertility, was the subject of several interesting research presentations. Dr. Baazeem et al. from Montreal and Toronto conducted a retrospective review of 157 men who underwent a bilateral varicocele repair and compared fertility outcomes with varicocele patients managed non-operatively. Mean sperm concentration and motility increased significantly after varicocelectomy. The natural pregnancy rate in the surgery group was significantly higher than in the non-surgery group (47% vs. 23%; $p < 0.01$) after more than 3 years of follow-up; the rate of ART use was also significantly less in the surgery group (32% vs. 62%; $p \sim 0.001$). These data suggest that bilateral varicocele repair, as compared to non-surgical management, have higher natural pregnancy rates and lower ART utilization. Dr. Lipshultz group from Houston also presented work on predictors of varicocele repair success by considering testicular histopathology. The semen analyses and pregnancy data from 239 NOA who underwent varicocele repair were studied; histopathology was analyzed before varicocele repair in 156 patients. Patients with maturation arrest or hypospermatogenesis had a significantly higher probability of success compared to patients with Sertolli Cell Only ($p < 0.001$ in both groups). Patients with later MA had a higher probability of success than patients with early MA ($p = 0.007$). These data demonstrate that men with NOA can have improvement in the semen analysis after varicocele repair, especially in late maturation arrest and hypospermatogenesis; therefore, histopathology should be considered when planning varicocele repair. Drs. Shridharani and Sandlow from Milwaukee performed a retrospective review of 112 patients who underwent varicocele repair. Sixty-five percent of patients had significant improvement in their seminal parameters; the improvement in total motile sperm per ejaculate appeared independent of pre-operative varicocele grade. The authors conclude that these data support repairing clinically palpable varicoceles for improving seminal parameters. Lastly, Dr. Patry and colleagues from Toronto presented the results of a detailed temporal analysis of semen analyses after repair of varicoceles by surgical ligation or embolization. At six months post-op, both groups showed similar improvements in total motile sperm counts; however, the embolization group appears to show earlier improvement at the 3 month follow-up 301% vs. 81%; $p = 0.036$). The authors suggest that the trauma from surgical repair results in a transient reduction in sperm quality.

The final paper of this moderator poster session dealt with a treatment algorithm for ejaculatory duct obstruction. Dr. Franco and colleagues from Rome, Italy presented the results of 35 patients they treated for unilateral or bilateral EJDO in the setting of poor seminal parameters or painful ejaculation. Semen analysis and transrectal ultrasounds were used to make the diagnosis of EJDO. Twenty-nine patients underwent ultrasound-guided puncture and aspiration of cysts and seminal vesicles. Sperm was found in 41% of distal seminal tract or prostatic cyst. Ethanol sclerotherapy of prostate cysts significantly improved semen parameters in 7 pts (70%). TURED improved semen volume and pain in all patients but only restored semen parameters in 2 patients. TESE or fine-needle aspiration found spermatozoa in 93% of attempts. Simultaneous or deferred ICSI was performed with an overall pregnancy rate of 35%. The authors propose that TURED is best reserved for symptomatic patients that fail percutaneous techniques.

In summary, this session clearly showcased the advances in male-factor infertility treatments and management protocols from several international groups. The results of these studies should provide important clinical guidance for counseling and treating men desiring either immediate or deferred pregnancy.

Moderated Poster Session #64
Infertility: Physiology, Pathophysiology, Basic Research
Wednesday, April 29, 2009
Reviewer: Paul Tonkin, MD

Abstract #1886
OVEREXPRESSION OF AROMATASE CYP19 IN HUMAN TESTIS IS MOST LIKELY REASON FOR HYPOGONADISM IN MEN WITH KLINEFELTER SYNDROME

Laurent Vaucher, Edward Carreras, Anna Mielnik, Peter N. Schlegel, Darius A. Paduch, New York, NY

The molecular mechanism of hypogonadism in men with Klinefelter syndrome (KS) is unknown. The authors found that men with KS had 25% less testosterone production as compared to men with non-obstructive azospermia. To answer if the lower testosterone levels were due to problems with steroidogenesis or excessive metabolism of testosterone to its derivative estradiol, CYP19 was measured and men with KS had 4.5 times higher expression of CYP19. The lower testosterone production in KS is associated with higher CYP19 and conversion from testosterone to estradiol. This data provides scientific rationale for use of aromatase inhibitors in men with KS.

Abstract #1887

A NOVEL NON-INVASIVE, MOTILITY-INDEPENDENT SPERM SORTING METHOD AND TECHNOLOGY TO ISOLATE AND RETRIEVE VIABLE SPERM FROM NON-VIABLE SPERM FOR USE WITH ICSI

Maurice M. Garcia, San Francisco, CA; Aaron Ohta, Berkeley, CA; Thomas J. Walsh, Alan W. Shindel, James F. Smith, Tom F. Lue, San Francisco, CA

Selection of viable sperm for ICSI is a challenging process and is limited by subjectivity, limited sensitivity, and irreversible toxicity. This study evaluates the ability of modified dielectrophoresis (DEP)-based cell-sorting platform to identify and isolate viable sperm from human ejaculate. The results suggest that the modified DEP platform is capable of non-invasively identifying and sorting viable from non-viable sperm. Furthermore, sorted sperm may be individually retrieved for use with ICSI. Sensitivity to detect viability may be greater than with the Trypan Blue dye exclusion test.

Abstract #1888

ACETYLATED HISTONE H4K12 EXHIBITS DIFFERENT BINDING TO SPERM DNA BETWEEN FERTILE MEN AND INFERTILE PATIENTS

Klaus Steger, Agnieszka Paradowska, Sigrid Schumacher, Hans-Christian Schuppe, Marek Bartkuhn, Wolfgang Weidner, Giessen, Germany

Acetylated histones are normally associated with transcriptionally active genes and spermatozoa are known to represent transcriptionally inactive cells. The authors identified more than 500 target gene promoters for H4K12ac in fertile volunteers where as 149 target gene promoters were identified in infertile patients. The aberrant acetylation pattern in infertile men might be responsible for insufficient sperm chromatin compaction resulting in male infertility and/or inappropriate transfer of epigenetic information to the zygote.

Abstract #1890

PLURIPOTENT STEM CELLS FROM THE ADULT HUMAN TESTIS

Nina Kossack, Juanito Meneses, Palo Alto, CA; Shai Shefi, Tel Hashomer, Israel; Ha Nam Nguyen, Shawn Chavez, Cory Nicholas, Joerg Cromoll, Renee A. Reijo Pera, Palo Alto, CA; Paul J. Turek, San Francisco, CA

The authors describe the ability to generate pluripotent stem cells from human spermatogonial stem cells derived from the adult testis using established human embryonic stem cell culture techniques. These stem cells have great potential for novel, cell-based therapy in the future as they are genetically and virally unmodified, non-embryo derived, and patient specific.

Abstract #1891

GHRELIN AND LEPTIN INTERPLAY IN PREVENTION OF TESTICULAR DAMAGE DUE TO CRYPTORCHIDISM

Joseph Alukal, New York, NY; Shannon Whirledge, Mounia Louet, Yuxiang Sun, Roy G. Smith, Dolores J. Lamb, Houston, TX

This study utilizes a novel murine model for ghrelin and leptin. The authors concluded that leptin and ghrelin appear to maintain spermatogenesis even in spite of testis undescent. Gene expression profiling will identify signaling pathways by which this phenomenon can be modulated.

Abstract #1892

REPEATED TESTICULAR SPERM EXTRACTION IN NON-OBSTRUCTIVE AZOSPERMIA PATIENTS UNDERGOING INTRACYTOPLASMIC SPERM INJECTION: OUTCOME AND LONG TERM EFFECTS

Mostafa A Sakr, Alexandria, Egypt

The author studied 494 male patients with non-obstructive azospermia who presented for repeated testicular sperm extraction (TESE). Sperm could be successfully retrieved in 210 out of 494 (42.5%) in the first TESE. Repeated TESE yielded similar sperm retrieval rates. The interval between biopsies is not correlated with the success of the procedure. Androgen deficiency occurred in 11% of male patients following conventional TESE indicating that long-term hormonal follow-up is recommended after repeated TESE.

Abstract #1893

MOLECULAR HISTOPATHOLOGY-TOWARD UNIFORM CLASSIFICATION OF TESTICULAR BIOPSIES

Laurent Vaucher, Anna Mielnik, Elena Gimenez, Peter N. Schlegel, Darius A. Paduch, New York, NY

Variability in testicular biopsy description by clinical pathologists, and heterogeneous architecture of the human testis results in conflicting data about expression profiles and functional study. 28 testicular biopsies were obtained and the expression of the following genes were analyzed: LH receptor, FSH receptor, androgen receptor, GATA-4, DAZ, DDX4, vimentin, 3-B-HSD, VCY, VCX, and qRT-PCR. Only DDX4 (ATP-dependent helicase) was 100% sensitive and specific for presence or lack of all germ cells. Since DDX4 is easily detectable in the human testis and semen, it is an exciting target and method of molecular profiling thus providing a powerful tool in studying genetics of spermatogenesis.

Abstract #1894

CISPLATIN REGULATES SERTOLI CELL EXPRESSION OF TRANSFERRIN AND INTERLEUKINS

Kohei Yamaguchi, Tomomoto Ishikawa, Koji Chiba, Atsushi Takenaka, Masato Fujisawa, Kobe, Japan

Exposure to cisplatin (CDDP) results in impairment of spermatogenesis; however, the signaling mechanisms involved in CDDP regulation of Sertoli cell (SC) gene expression. The authors demonstrated that the activity of the p-ERK1/2 and COX-2 signaling pathways are involved in SC impairment induced by CDDP. Specific components of these pathways may provide novel therapeutic targets for use in testicular function after CDDP based chemotherapy.

Abstract #1895

HYDROCELES ASSOCIATED WITH VARICOCELES: INCIDENCE AND MATHEMATICAL MODEL OF THEIR INSULATING EFFECTS

James S Wysock, Michael J Schwartz, Marc Goldstein, New York, NY

The authors reviewed 1,938 subinguinal microsurgical varicocelectomies, and incidental hydroceles were detected and treated in 292 (15.1%) men. The authors suggest a mathematical model for the insulating effects of hydroceles. The mathematical model suggests that hydroceles contribute a size-dependent insulating effect on the testis.

Abstract #1889
IMPACT OF ABERRANT ALF GENE METHYLATION ON OUTCOME OF TESTICULAR SPERM EXTRACTION AND INTRACYTOPLASMIC SPERM INJECTION
No presenters

Podium Session
Infertility: Evaluation, Therapy and Basic Science
Wednesday, April 29, 2009
Reviewer: John W. Weedin

Abstract 2163
INFERTILITY, OBESITY, AND HYPOGONADISM ARE SIGNIFICANT FACTORS FOR OSTEOPOROSIS IN YOUNG MEN
E. Gimenez, A. Bolyakov, M. Herman, J. Kiper, D.A. Paduch, New York, NY
Gimenez and colleagues prospectively followed 156 men with a mean age of 37.7 years old who presented with hypogonadism, infertility, sexual dysfunction, and chronic pelvic pain to a single clinic. After thoroughly evaluating each patient, they obtained a DEXA bone scan to determine the prevalence of osteopenia (36%) and osteoporosis (4%) in this population. They determined that five risk factors were associated with osteoporosis, including testosterone < 200 ng/dL, FSH > 25 U/L, LH > 14 U/L, and a history of infertility. Obesity was a 8-fold risk factor for low testosterone and therefore, osteoporosis. This study demonstrated that even at young ages, men with hypoandrogenism and obesity are at risk for osteoporosis and potentially pathologic fractures.

Abstract 2164
A HIGH RESOLUTION SCREEN REVEALS UNRECOGNIZED CHROMOSOME ANOMALIES IN CONGENITAL GENITOURINARY DEFECTS ASSOCIATED WITH MALE INFERTILITY
M. Tannour-Louet, H. Shuo, S.T. Corbett, D.J. Lamb, Houston, TX
Tannour-Louet and colleagues used chromosome microarray (CMA) analysis to identify various submicroscopic chromosomal abnormalities in 30% of patients with known hypospadias, cryptorchidism, and ambiguous genitalia. Routine karyotype analysis did not identify a single defect. This study demonstrated the superiority of CMA over routine karyotype analysis in determining chromosomal abnormalities in patients with the above disorders. CMA has the potential to aid in genetic counseling to patients and parents with these disorders, and may lead to an improved knowledge of the molecular basis of these disorders.

Abstract 2165
A NOVEL APPLICATION OF 1H MAGNETIC RESONANCE SPECTROSCOPY: POTENTIAL FOR NON-INVASIVE IDENTIFICATION OF SPERMATOGENESIS IN MEN WITH NON-OBSTRUCTIVE AZOOSPERMIA
D.S. Aaronson, T.J. Walsh, R. Iman, P.J. Turek, J. Kurhanewicz, San Francisco, CA
Aaronson and colleagues used magnetic resonance spectroscopy to examine testicular biopsy specimens *ex-vivo* in patients with normal spermatogenesis and nonobstructive azoospermia. They determined that the signal for phosphocholine was associated with mature sperm in patients with normal spermatogenesis, while the absence of the phospholine signal was associated with the absence of mature sperm. This technology has the potential to identify where patients with nonobstructive azoospermia have sperm before testicular sperm extraction.

Abstract 2166
ARRAY-BASED COMPARATIVE GENOMIC HYBRIDIZATION REVEALS 9P24 AS A GENETIC HOTSPOT FOR AMBIGUOUS GENITALIA AND GONADAL DYSGENESIS
M.H. Hsieh, H. Shuo, M. Tannour-Louet, D.J. Lamb, Houston, TX
Hsieh and colleagues used chromosomal microarray analysis (CMA) to identify and characterize three patients with submicroscopic chromosomal abnormalities at the 9p24 region. Routine karyotype analysis identified each patient, and CMA further localized and specified the genetic abnormality. In two of the three patients, CMA identified chromosomal abnormalities in other locations across the genome, asking the question if there are multiple genetic abnormalities that lead to a particular phenotype in these children.

Abstract 2167
REAL-TIME PCR ANALYSIS DETECTION OF AZF MICRODELETIONS: A RAPID AND ACCURATE METHOD FOR INFERTILITY SCREENING
A. Mielnik, E. Gimenez, P.N. Schlegel, D.A. Paduch, New York, NY
Mielnik and colleagues developed a real-time polymerase chain reaction (RT-PCR) assay with 10 sequence-tagged sites to determine the assay's accuracy at detecting Y-chromosome microdeletions compared with traditional PCR. They tested their assay on 36 patients with known Y-chromosome microdeletions, and found that the more rapid RT-PCR had 100% sensitivity and specificity at detecting abnormalities. They infer that the simple, single-step, non-labor intensive assay may replace the traditional assay for Y-chromosome microdeletions.

Abstract 2168
Can Orchidopexy in Adulthood Improve Fertility?
K. Chiba, T. Ishikawa, K. Yamaguchi, A. Takenaka, M. Fujisawa, Kobe, Japan
Chiba and colleagues examined whether orchidopexy during adulthood could improve fertility by retrospectively reviewing 10 men with unilateral cryptorchidism and 10 men with bilateral cryptorchidism. After a mean follow-up of 26.4 months, sperm could not be located by semen analysis or testicular sperm extraction in all 15 men with bilateral cryptorchidism and all men with preoperative azoospermia. This study demonstrates that post-pubertal orchidopexy should not be performed to improve fertility. Post-pubertal orchidopexy may be performed for cosmesis or for testosterone production as long as the patient understands the increased risk of malignancy and need for lifelong self-examination.

Abstract 2169
HYPOANDROGENISM BY TOTAL AND BIOAVAILIABLE TESTOSTERONE IN AN INFERTILITY CLINIC POPULATION
S.E. Harris, S.J. Ohlander, L.S. Ross, C.S. Niederberger, Chicago, IL
Harris and colleagues retrospectively reviewed 236 men presenting to a male fertility clinic and measured both serum total testosterone and bioavailiable testosterone (from Vermeulen A et al. J Clin Endocrinol Metab 1999; 84: 3666-72) in each patient along with performing a semen analysis. After stratifying each patient into those with normospermia, oligospermia, nonobstructive and obstructive azoospermia, they found that men with nonobstructive azoospermia had a significantly higher incidence of hypoandrogenism using both total testosterone (50%) and bioavailiable testosterone (89%). They hypothesized that

identifying more patients with hypoandrogenism may help identify men earlier at higher risk for certain health problems associated with low testosterone.

Abstract 2170
FACTORS AFFECTING WHY MEN UNDERGO A VASECTOMY CONSULTATION AND SCHEDULE THE PROCEDURE BUT FAIL TO PROCEED TO HAVE THE PROCEDURE PERFORMED
N. Dhar, A.V. Hernandez, N. Tan, E. Sabanegh, J.S. Jones, Cleveland, OH
Dhar and colleagues retrospectively reviewed 651 patients who had scheduled to have a vasectomy performed for contraception, and examined the 10% of patients who failed to have their vasectomy done. Each patient underwent a thorough pre-procedure consultation with one physician and watched a video explaining the procedure before they scheduled their vasectomy. They found that men under 30 years of age or who had less than three children were more likely not to proceed with vasectomy.

Abstract 2171
REDEFINING ABNORMAL FSH IN THE MALE INFERTILITY POPULATION
J.B. Gordetsky, E. van Wijngaarden, J. O'Brien, Rochester, NY
Gordetsky and colleagues retrospectively reviewed 153 patients presenting to a single physician's male infertility clinic and compared their serum FSH to semen analysis parameters such as density, motility, morphology. They found that men with FSH > 7.5 mIU/mL had a 5-13-fold increased risk of abnormal semen parameters, and determined that an FSH > 4.5 predicted abnormal semen parameters. They also reported that a low testosterone/FSH ratio was correlated with abnormal semen parameters. However, this study lacked a normal control group, and the FSH measurements were obtained by one laboratory without comparison to other labs.

Abstract 2172
INTRA-OPERATIVE DOPPLER PHASE SHIFT TO LOCALIZE THE PRESENCE OF SPERM DURING TESTIS BIOPSY IN AZOOSPERMIC MEN
S.J. Parekattil, M.S. Cohen, J.W. Vieweg, Gainesville, FL
Parekattil and colleagues used hand-held Doppler ultrasonography to assess blood flow shift in 6 different regions of each testis in men with nonobstructive azoospermia, and then biopsied each area to look for sperm. They found that the presence of vascular flow predicted the presence of sperm and that Doppler ultrasound was 92% accurate. However, the amount of positive and negative biopsies along with their location within the testis was provided.

Abstract 2173
PREDICTORS OF FERTILITY IN PATIENTS TREATED FOR GERM-CELL TESTICULAR CANCER
A. Salonia, M. Ferrari, L. Rocchini, A. Gallina, R. Matloob, A. Sacca, G. Zanni, R. Colombo, N. Suardi, L.F. DaPozzo, P. Rigatti, F. Montorsi, Milan, Italy
Salonia and colleagues prospectively followed a cohort of men who underwent unilateral or bilateral orchiectomy for testis germ cell tumors for a mean follow-up of seven years. They used fertility as their index of success defined by one live birth after orchiectomy, which was 15.9%. The only predictive factor on univariate analysis for future fertility was age at orchiectomy, while previous fatherhood and adjuvant chemotherapy almost achieved statistical significance. Female partner age was not assessed as a possible predictor of future fertility.

Abstract 2174:
LEYDIG CELL FAILURE FREQUENTLY ASSOCIATED WITH SPERMATOGENIC FAILURE
J.W. Weedin, J.A. Rumohr, R.C. Bennett, M. Khera, L.I. Lipshultz, Houston, TX
Weedin and colleagues retrospectively reviewed 172 patients with severe spermatogenic failure consisting of nonobstructive azoospermia and virtual azoospermia, and found a high prevalence of hypoandrogenism (47.1%) which remained elevated independent of testicular histopathology. Furthermore, patients with testosterone less than 250 ng/dL had a significantly lower probability of successful sperm retrieval at the time of testicular sperm extraction. This work raises the question: does low testosterone lead to spermatogenic failure, does severe spermatogenic failure lead to low testosterone, or do patients with both leydig and spermatogenic failure have global testicular failure?

Infertility, Physiology, Pathophysiology and Basic Research Session
Wednesday, April 29, 2009
Reviewer: Elias Wehbi
This exciting moderated poster session showcased a great deal of novel and interesting areas in the realm of Infertility, Physiology, Pathophysiology and Basic Research. The international panel looked at topics including the use of pluripotent stem cells from adult testis. These testicular stem cells behaved like pluripotent cells with potential clinical applications yet to be discovered.
The group from Toronto wrapped up the morning session by presenting novel work which may help in the counselling of infertile couples to better understand the role of DNA fragmentation and infertility, as it pertains to embryo quality and spontaneous abortion rates. They showed that higher rates of DNA damage did portend worse outcomes with regard to higher levels of spontaneous abortions in infertile couples. This is particularly interesting because they demonstrated no difference with regard to the inter-group mean maternal ages.
This enlightening morning stimulated a great deal of questions and much debate. Surely we all left with the realization that although this exciting field has broadened significantly, there is a tremendous amount of work that still needs to be done and a great deal of debate to be had. ⌘

9th Annual SSMR / SMSNA Traveling Fellowship Program

The 9th Annual Traveling Fellowship Program took place in conjunction with the AUA in Chicago, Illinois and was a great success. This year was the third combined fellowship with the Sexual Medicine Society of North America (SMSNA).

The SSMR would like to express our gratitude to the SMSNA for their academic and financial support of the fellowship. These awards are designed to expose young urology residents to the field of sexual medicine, including male infertility and erectile dysfunction, and allow them to participate in many of the events at the AUA.

2009 Men's Health Fellowship Recipients

Shaheen Alanee Abdullah	University of Minnesota
Bryan Bruner	Mayo Clinic, Rochester
John Colen	Baylor College of Medicine
Genoa Ferguson	Washington University in St. Louis
Gregory Lowe	Ohio State University Medical Center
Erin McNamara	Duke University
Kenneth Smith	University of Minnesota
Paul Tonkin	Medical College of Wisconsin
John Weedin	Baylor College of Medicine
Elias Wehbi	University of Toronto

Men's Health Traveling Fellowship Program 2010

Dear SSMR Members:

The Society for the Study of Male Reproduction (SSMR) and the Society for Sexual Medicine of North America (SMSNA) are proud to announce the Tenth Annual Traveling Fellowship Program with the SSMR and the fourth combined award for the two societies. This will take place in conjunction with the 2010 AUA meeting in San Francisco, California.

The SSMR and SMSNA, AUA-affiliated subspecialty societies, have a mission to promote the advancement of the science and treatment of male reproduction and sexual disorders through education of practitioners, public education, and informational exchange of research and new advances through meetings. The SSMR and SMSNA are committed to cultivating interest in infertility and sexual medicine treatment careers in trainees.

Our goal is to present residents in training with the opportunity, while attending the AUA meeting, to have a more intensive exposure to male infertility and sexual medicine issues. The fellowship program will include mandatory attendance at the SSMR and SMSNA educational programs and complimentary SSMR banquet participation and SMSNA lunch. Fellows will also attend AUA post-graduate courses in male infertility, erectile dysfunction and the infertility podium and poster sessions, as well as a symposium with fellowship directors and faculty members on how to prepare for a future successful career as an andrology specialist. The program will allow significant contact between fellows and leaders in the field.

Preference will be given to those in earlier years of training. This does not mean, however, that senior residents and fellows cannot apply. Their applications will be considered along with the others. Participants accepted into the program are expected to take part in all components. This means that attendance at the meeting from Sunday through Tuesday evening will be required.

Meeting expenses covered by the program may include airfare, hotel accommodations, SSMR and SMSNA meeting and banquet, tuition for the post-graduate course, and all special lectures. The maximum stipend will be $1,000 per fellow. Overages are the responsibility of the fellow or the home institution.

An application is attached, which needs to be completed by the applicant and signed by the director of the training program, assuring commitment from the chief to allow full attendance of the fellowship program, should the applicant be accepted. The applicant should solicit a letter of recommendation from a mentor of his/her choice. **Applications are due by January 15, 2010.** The awards will be announced by February 15, 2010.

We hope you will consider supporting this program through the application of trainees in your program. We look forward to another successful Men's Health Traveling Fellowship! ⌘

Sincerely,

Victor M. Brugh, III, MD
Director of Traveling Fellowship

Paul R. Shin, MD
SSMR

Jason M. Greenfield, MD
SMS

Mohit Khera, MD
SMS

Application for the Men's Health Traveling Fellowship Program 2010

Sunday, May 30 – Tuesday, June 1, 2010
San Francisco, California

Please print or type.

Name:_____ Degree(s):_____

Work Address:_____

City:_____ State:_____ Zip:_____

Home Address:_____

City:_____ State:_____ Zip:_____

Work Phone:_____ Home Phone:_____

Fax:_____ E-mail:_____

Current Position (Resident / PGY Year, Post-Doc):_____

Institution / Department:_____

Please attach the following:

1. Curriculum vitae
2. Personal statement (1 page or less)
3. Letter of recommendation from chairman or selected mentor

Signature of Applicant:_____

Chairman Signature: By signing below, I am supporting the application of the above-named member of our department as a traveling fellow of the SSMR and SMSNA. I understand that attendance at the AUA meeting will be subsidized by the award to a maximum of $1,000, and that attendance of the fellow at all traveling fellowship functions is expected. Sunday through Tuesday evening at a minimum.

Signature of Department Chairman:_____

Send completed applications to:
SSMR/SMS Traveling Fellowship
Two Woodfield Lake
1100 E Woodfield Road, Suite 520
Schaumburg, IL 60173

Deadline: January 15, 2010

Mark Your Calendars!

Online Voting for SSMR Leadership

From February 15 – April 15, 2010, you will be able to vote for the 2010 – 2011 open SSMR leadership positions on line at www.ssmr.org.

Exercise your RIGHT TO VOTE!

2010 SSMR Program

"Beyond the Event Horizon – Where are We Going with Male Infertility"
Edmund Sabanegh, Jr., MD, Program Chair

The 2010 SSMR program is designed to be an inherently provocative look at the future directions in the diagnosis and management of male infertility. Following the analogy of the event horizon surrounding a black hole which demarcates the known from the unknown, speakers will provide an analysis of existing research and trends to predict progress in critical areas of male infertility over a five- and ten-year time span.

Thought leaders in the field will wrestle with the most controversial areas of the day. Dr. Richard Scott will discuss anticipated developments in intracytoplasmic sperm injection (ICSI) reviewing new PGD/PGS technologies as well as genetic fingerprinting data suggesting the relative contribution of male and female factors to aneuploidy in embryos. Recent research in genetics and epigenetics offer the potential towards a personalized solution for infertility, an issue that will be addressed by Dr. Dolores Lamb. Dr. Thomas Walsh answers the question, will there be a further significant evolution in microsurgery? Will stem cells allow us to grow viable and safe sperm? Dr. Kirk Lo will provide an assessment of this potential. Dr. Anthony Thomas will dissect the ethical dilemmas that await us in the field of reproductive medicine. Finally, a panel of leaders in the field will provide answers to long-standing questions including: What is the future role of the urologist in the management of male infertility? How do we prepare the next generation to provide effective, efficient, and compassionate care to infertile couples?

We are excited about this novel program and we hope that you will be as well. We anticipate that attendees will gain understanding of critical developments in male infertility and insight into the trends which hold promise to shape the future of this field. We invite all members of the Society for the Study of Male Reproduction and all attendees of the American Urological Association meeting to join us in a discussion of the future of male infertility management.

ASRM Annual Meeting
October 17 – 21, 2009
Georgia World Congress Center
Atlanta, GA

ASA 35th Annual Conference
April 10 – 13, 2010
Omni Houston Hotel
Houston, TX

Andrology Lab Workshop
April 10 – 11, 2010

ASA Basic Science Workshop (NEW for 2010)
April 10 – 11, 2010

ASA Special Symposium
April 10, 2010

AUA 2010 Annual Meeting
May 29 – June 3, 2010
San Francisco, CA

SSMR Annual Meeting at the AUA Annual Meeting
Tuesday, June 1, 2010
San Francisco, CA ⌘

Many Thanks to Our 2009 Industry Partners and Educational Grant Providers

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Website: www.ssmr.org

The Society for the Study of Male Reproduction (SSMR) encourages organizations and individuals to link to www.ssmr.org.