



SSMR NEWS

Fall Society for the Study of Male Reproduction 2014

President's Message



Edward D. Kim, MD

The summer has passed quickly and the American Society for Reproductive Medicine (ASRM) 2014 Meeting in Honolulu (October 18 – 22, 2014) is just around the corner. I would like to take this opportunity to bring you up-to-date regarding Society for the Study of Male Reproduction (SSMR) activities.

First, I would like to thank and recognize our immediate past president, Dr. Peter N. Kolettis, for his dedication and guidance over the past year. Under his leadership, our membership has grown to 248 members. We have maintained a solid financial position. With the outstanding organizational skills of Dr. Joseph Alukal, SSMR had a fantastic, well-received program at our 2014 Annual Meeting in Orlando this past May. The topic, "Update on Microsurgery for Male Infertility," generated much discussion given our interests in the surgical management of infertility.

Our 2015 Program Chair Dr. Michael L. Eisenberg has been busy organizing next year's program for the upcoming SSMR 2015 Annual Meeting in May. The topic, "Achieving, Maintaining and Using Healthy

Sperm: Alpha to Omega," will span from sperm contribution to IVF-ICSI outcome to male rejuvenation. Under a generous, unrestricted grant from Repros Therapeutics (The Woodlands, Texas), the Industry-Sponsored Lunch Symposium will critically examine a new twist on clomiphene. This year's program will be held on the Sunday, rather than the Tuesday, of the 2015 AUA Annual Meeting in May.

SSMR is pleased to announce our support of and collaboration with the American Society for Men's Health (ASMH) and its President Dr. Martin M. Miner. At the upcoming ASMH Annual Meeting December 5 – 7, 2014, in Scottsdale, Arizona, SSMR will be presenting a session on the relationship between men's health and reproductive health. Drs. Michael L. Eisenberg and Robert E. Brannigan will be representing SSMR to this multi-disciplinary membership dedicated to the rapidly growing field of men's health.

SSMR is the subspecialty society of the American Urological Association devoted to clinical, research and educational initiatives, as well as advocacy efforts concerning male reproduction. With this mission statement in mind, the board is excited to announce that this year's SSMR Research Grant was awarded to the Andrology Research Consortium (ARC). Under the direction of Drs. Keith A. Jarvi and Susan Lau, this open collaboration has the opportunity to create a database for male infertility patients, analogous to the SART-CDC database for IVF outcomes. Data collection is already ongoing for this long-term project. Please contact arc@mtsinai.on.ca if you are interested in participating.

I want to welcome our newest board members. Dr. Aaron Spitz is our newly elected treasurer and Dr. James F. Smith is our member-at-large. Heather Swanson from WJ Weiser & Associates is our new executive director.

I am most appreciative for the opportunity to serve as your president. Thank you and I hope to see you in New Orleans for the AUA Annual Meeting May 15 – 19, 2015! ◀

Sincerely,
Edward D. Kim, MD
President, Society for the Study of Male Reproduction

"SSMR is the subspecialty society of the American Urological Association devoted to clinical, research and educational initiatives, as well as advocacy efforts concerning male reproduction."

IN THIS ISSUE...

President's Message.....	1	2014 SSMR Award Winners	12
2014 ASRM Events of Interest	2	14 th Annual SSMR/SMSNA Traveling Fellowship Recipients	13
2014 SMRU Activities at ASRM.....	3	2015 Men's Health Traveling Fellowship Program.....	14
2014 SSMR Annual Meeting at AUA Course Summaries	4	Application for 2015 Men's Health Traveling Fellowship	15
SSMR 2014–2015 Board of Directors	11	Mark Your Calendars	16
Thank You to Our 2014 Corporate Members.....	11		

2014 ASRM Events of Interest

**American Society for Reproductive Medicine
70th Annual Meeting
Sand, Surf & Science
October 18 – 22, 2014
Hawaii Convention Center
Honolulu, Hawaii**

47th Annual Postgraduate Program Committee
Chair: Lisa M. Halvorson, MD
Co-Chair: Kathleen Hwang, MD
Coordinating Chair: Glenn Schattman, MD

Hours: 8:15 a.m. – 5:00 p.m.
Lunch is from 12:00 p.m. – 1:00 p.m.

Courses PG1 – PG11 are one-day courses on Saturday.
Courses PG12 – PG22 are one-day courses on Sunday.
Course PG23 is a one-day workshop on Sunday.
Course PG24 is a half-day, hands-on intensive on Monday.
Postgraduate Course Syllabi

SATURDAY, OCTOBER 18, 2014 **Post Graduate One-Day Courses 1 – 11**

PG01: Interprofessional Course: Application of a Quality Management System Model to Reproductive Health Care
Faculty: Carli W. Chapman, BS, ELD, Chair; Sharon T. Mortimer, PhD; Bruce S. Shapiro, MD

PG02: Making It Past The First Trimester: Causes And Treatments Of Early Pregnancy Disorders
Faculty: Ruth B. Lathi, MD, Chair; Kelle H. Moley, MD; Danny J. Schust, MD; Mary D. Stephenson, MD, MSc

PG03: Coding for Reproductive Medicine Practices 2014
Faculty: John T. Queenan, Jr., MD, Chair; George A. Hill, MD

PG04: Biomarkers in Reproductive Medicine
Faculty: Carlos Simon, MD, PhD, Chair; David K. Gardner, PhD; David L. Keefe, MD; Denny Sakkas, PhD

PG05: Global Gametes: Legal, Ethical and Psychosocial Implications in Cross-Border Reproductive Care
Faculty: Elizabeth A. Grill, PsyD, Chair; Lindsay Childress-Beatty, JD, PhD; Susan L. Crockin, JD; Marcia C. Inhorn, PhD, MPH

PG06: Mastering Ultrasonography in Reproductive Medicine
Faculty: Todd D. Deutch, MD, Chair; Jacques S. Abramowicz, MD; Alfred Z. Abuhamad, MD; Laurel A. Stadtmauer, MD, PhD

PG07: Interprofessional Course: Minimizing Errors in ART
Faculty: C. Brent Barrett, PhD, HCLD, Chair; Michael M. Alper, MD; Jacob F. Mayer, PhD, HCLD; Lisa A. Rinehart, RN, BSN, JD

PG08: Racial and Ethnic Differences in the Polycystic Ovary Syndrome
Faculty: Ruben J. Alvero, MD, Chair; Rebecca Carron, RN, PhD; Lauren Roth, MD; Shunping Wang, PhD

PG09: Interprofessional Course: Evaluation and Sperm Retrieval Management of Obstructive and Nonobstructive Azoospermia and/or Severe Oligozoospermia
Faculty: Ajay K. Nangja, MB, BS, Chair; Mohit Khera, MD, MBA, MPH; Mark Sigman, MD; Amy E. Sparks, PhD

PG10: Preventing and Managing Endoscopic Complications: A Hands-On Course
Faculty: Ceana Nezhath, MD, Chair; Keith B. Isaacson, MD; Grace M. Janik, MD

PG11: Vitrification: A Hands-On Course
Faculty: Susan A. Gitlin, PhD, Co-Chair; Charles L. Bormann, PhD, Co-Chair; Thomas Huang, PhD

SUNDAY, OCTOBER 19, 2014 **Post Graduate One-Day Courses 12 – 22**

PG12: Improving Your Practice with Analytical Data (Non-CME/CE)
Faculty: Faith E. Ripley, BS, CPC, Co-Chair; Joseph J. Travia, Jr., MBA, Co-Chair; Lisa Duran, BA, RMA

PG13: Preservation of Ovarian Function in Chronic Disease: Cryopreservation, Medical/Surgical Interventions and Educational Opportunities
Faculty: Catherine Racowsky, MD, Chair; Francesca E. Duncan, PhD; Elizabeth S. Ginsberg, MD; Clarisa R. Gracia, MD, MSCE

PG14: Epidemiology and Experimental Design: Using Evidence-based Medicine to Understand Contraceptive Controversies
Faculty: Bliss Kaneshiro, MD, MPH, Chair; David A. Grimes, MD; Kenneth Schultz, PhD

PG15: From Spermatogenesis to More Take-Home Babies: The Importance of the Sperm
Faculty: Sheena E.M. Lewis, BSc, PhD, Chair; Mona Bungum, PhD; Nicolas Garrido, PhD

PG16: Obesity, Nutrition and Fertility
Faculty: Jorge F. Chavarro, MD, ScD, Chair; Emily S. Jungheim, MD, MSCI; Kelle H. Moley, MD; Judy Simon, MS, RD, CD, CHES

PG17: Ovulatory Dysfunction: Medical, Surgical and ART Alternative Management
Mohamed Aboulghar, MD, Chair; Johnny T. Awwad, MD; David R. Meldrum, MD; Alan S. Penzias, MD

PG18: Interprofessional Course: The Embryo: Creation, Conflict and Controversy
Faculty: Dorothy Greenfeld, MSW, LCSW, Co-Chair; Margaret E. Swain, RN, JD, Co-Chair; G. David Ball, MD

PG19: A Womb with a View: Exploring the Complexities of the Uterus
Faculty: Valerie L. Baker, MD, Co-Chair; Sue Jasulaitis, MSN, BSN, Co-Chair; Barry Behr, PhD, HCLD; Paul Lin, MD

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PG20: Preventing and Managing Endoscopic Complications: A Hands-On Course

Faculty: Ceana Nezhat, MD, Co-Chair; Keith B. Isaacson, MD; Grace M. Janik, MD

PG21: Vitrification: A Hands-On Course

Faculty: Susan A. Gitlin, PhD, Co-Chair; Charles L. Bormann, PhD, Co-Chair; Thomas Huang, PhD

PG22: Managing Informed Consent in ART: Unique Medical, Legal and Operational Challenges in Evolving Relationships, Practices and Technologies

Faculty: Susan L. Crockin, JD, Chair; Judith F. Daar, JD; James P. Toner, Jr., MD, PhD; Elizabeth B. West, RNC, BSN

MONDAY, OCTOBER 20, 2014

Post Graduate Half-Day, Hands-On Intensive 24

PG24: Simulation and Hands-On Intensive

Faculty: Jeffrey M. Goldberg, MD, Chair; Ceana Nezhat, MD; Keith B. Isaacson, MD; Grace M. Janik, MD

*2014 Society for Male
Reproduction and Urology
Activities at ASRM Meeting*

SUNDAY, OCTOBER 19, 2014

6:30 p.m. ASRM Opening Ceremony & Opening Reception

MONDAY, OCTOBER 20, 2014

9:45 a.m. – 10:30 a.m. **Plenary 2: AUA Bruce Stewart Memorial Lecture: Klinefelter Syndrome: From Mice to Men**

Paul J. Turek, MD (Introducer)
Ronald S. Swerdloff, MD

2:45 p.m. – 3:30 p.m. **Contraception Day Keynote: The Future of Female and Male Contraceptive and the NIH's Role in the Development of New Contraceptive Methods**

Bliss Kaneshiro, MD, MPH (Introducer)
Diana Blithe, PhD

4:15 p.m. – 6:15 p.m. **Oral Abstracts: SMRU Travel Scholars**

4:15 p.m. – 6:15 p.m. **Symposium Oncofertility I – Male**

Robert E. Brannigan, MD (Chair)
John P. Mulhall, MD
James F. Smith, MD, MS

5:15 p.m. – 5:45 p.m. **SMRU Minisymposium – Space, the Final Frontier: Impact of Space Flight and Zero Gravity on Male and Female Reproductive Health**

Joseph S. Tash, PhD

TUESDAY, OCTOBER 21, 2014

1:15 p.m. – 2:15 p.m. **Interactive Session: Varicocele – If and When to Treat**

James H. Segars, MD (Chair)
Daniel H. Williams, MD
Edward D. Kim, MD
Margareta Pisarska, MD

4:15 p.m. – 6:15 p.m. **Symposium: Gamete Reserve I – Testis**

Stefan Schlatt, PhD (Chair)
Daniel H. Williams, MD
Cigdem Tanrikut, MD
Richard Chaillet, MD, PhD

4:15 p.m. – 6:15 p.m. **Oral Abstracts: Male Reproduction and Urology – Clinical**

Oral Abstracts: Male Factor I

5:15 p.m. – 5:45 p.m. **SMRU Minisymposium – Gateways to Success: The Sperm's Perspective for Finding and Penetrating the Egg**

David F. Albertini, PhD

6:15 p.m. – 7:00 p.m. **SMRU Members Meeting**

WEDNESDAY, OCTOBER 22, 2014

10:00 a.m. – 10:30 a.m. **ASRM Members Meeting Award Ceremony and ASRM Members Meeting**

11:15 a.m. – 1:00 p.m. **Oral Abstracts: Male Factor II**

Oral Abstracts: Sperm Biology

1:15 p.m. – 2:15 p.m. **Roundtable Lunch 15: Management of Testosterone/ Anabolic Steroid-Induced Hypogonadism and Male Infertility**

Edward D. Kim, MD

1:15 p.m. – 2:15 p.m. **Interactive Session: Predictive Value of Hormonal and Genetic Assays in the Evaluation of the Infertile Male**

Ajay K. Nangia, MD (Chair)
Craig S. Niederberger, MD
Jay Sandlow, MD

2:45 p.m. – 3:30 p.m. **Plenary 8: Sperm Cell Biology: Revelations on the Road to Conception**

Rebecca Z. Sokol, MD, MPH (Introducer)
R. John Aitken, ScD

3:45 p.m. – 5:45 p.m. **Oral Abstracts: Male Reproduction and Urology – Research**

Oral Abstracts: Androgen Excess

5:15 p.m. – 5:45 p.m. **SMRU Minisymposium – How to Counsel the Infertile Man: An Under-Recognized Mental Health Issue**

William D. Petok, PhD

2014 SSMR Annual Meeting at the AUA

Course Summaries

PODIUM SESSION 20

Sexual Function/ Dysfunction/ Andrology: Surgical Therapy
Monday, May 19, 2014
Reviewer: Tolulope Bakare, MD

The podium session diving into the surgical management of sexual dysfunction was a great opportunity not only to reinforce my previous knowledge on the subject, but also to introduce me to new surgical techniques and options in management of complications.

We kicked off the session by discussing the surgical practice patterns for erectile dysfunction. Oberlin et al., analyzed the case logs of certifying American urologists to assess contemporary surgical trends in penile prosthesis between 2003 and 2012. Over the nine years, 9,558 penile prostheses were placed with a 10:1 ratio of inflatable penile prosthesis compared to malleable. They also noted a correlation between prosthesis surgery volume and GDP with both being parallel to one another. The session proceeded with a presentation by Zhou et al., in which they evaluated the rate of reoperation in penile prosthesis surgery in California. They performed a longitudinal analysis of California population and only included 927 men with virgin implants who underwent reoperations. The indications for revision included infection and mechanical failure. The risk of reoperation within the first year was 3.25%, which increases to 11% at five years, and 15% at 10 years. African Americans and Hispanics were more likely to require reoperation when compared to other ethnicities. Chung et al., then discussed their two-year experience with transscrotal high submuscular placement of urologic prosthetic balloons and reservoirs. This avoids dissection into the retropublic space. They assessed patient bother in 146 patients between 2011 and 2013. 80% of patients were unable to palpate the balloon and/or reservoir. 94% of patients reported no bother with the position of the balloon or reservoir, while 1–2% had marked bother. The findings emphasized that while this may not be necessary in most patients, it may be beneficial in patients with a history of significant abdominal surgery, including prostatectomy and urinary diversions.

One of the most interesting presentations was a multicenter study by Henry et al., discussing observation of local clinical penile prostheses infections instead of immediate salvage of the implant. The study was performed in eight centers with a small study population of 15. The patients had clinical evidence of only local infection with no systemic infection i.e., no fevers and no elevated white blood cell count. The patients were treated with antibiotics for six months with improvement in infection. They concluded that close observation and long-term antibiotics may be an option for patient with local infections after prosthesis. The study, however, had some drawbacks. Their small sample size, the cost of long-term antibiotics as well as the inconvenience of daily antibiotics to the patient are all factors that are drawbacks for the study. Also controversial was a study by Belsante et al., that assessed the cost effectiveness of acute insertion of malleable penile prosthesis for refractory ischemic priapism. From 2007 to 2013, they had 13 patients with recurrent priapism episodes. The cost of their hospital visits including emergency room, operating room and inpatient admission was about \$83,818, while the cost of placing a malleable prosthesis was \$4,200. Patients had pain relief within 24 hours and were discharged home at that time. While these patients may benefit from prosthetics, the decision to proceed with prosthesis is one not

to be taken lightly. The potential complications including infection, erosion and mechanical failure need to be adequately discussed with the patient and an acute setting may not be the appropriate location for that discussion.

The session was wrapped up with a study by Jiang et al., evaluating the subjective assessment of nerve-sparing quality on postoperative erectile function in patients undergoing robotic-assisted laparoscopic radical prostatectomy. From 2004 to 2011, they compared men who had undergone bilateral nerve sparing prostatectomy versus men who did not have nerve sparing. The two groups had penile rehabilitation with 25mg Sildenafil every night. They noted improved sexual function in men with nerve-sparing surgery when compared to men who did not have nerve sparing. Overall the podium session was educational and opens the door for more exciting research opportunities in the world of male sexual function/dysfunction.

Moderated Poster Session Infertility: Evaluation
Tuesday, May 20, 2014
Reviewer: Ryan Flannigan, MD

From epidemiology to enhancing sperm on microscopy, this strongly attended session covered a hefty breadth of infertility. Of particular note, Eisenberg and colleagues identified Texan and Californian men undergoing infertility evaluation to have a lower index of mortality compared to population standards (69 vs. 177); however, when any parameter of semen analysis was impaired, these men had a 2 to 3 times greater risk of death compared to those with normal evaluations. Cardiovascular death was the leading causes of mortality in this cohort followed by death from malignancy. In a complementary study, Colicchia and others identified hypertension and obesity as the two most prevalent comorbidities in Caucasian European men undergoing infertility evaluation. The health associations related to fertility do not stop here. Bernie and colleagues determined that up to one-third of patients presenting with non-obstructive azoospermia have symptoms sufficient to meet the criterion for a diagnosis of anxiety. Future studies are warranted for screening men presenting with infertility for mental disease.

In a cohort of men with newly diagnosed malignancy presenting for infertility, Bach et al., demonstrated that upwards of 50% of these men had low testosterone, while only 4% had an elevated LH. This suggests there may be an interaction with the processes of malignancy and central HPA axis dysregulation linked to infertility. However, further investigations are warranted to delineate primary versus secondary hypogonadism in this population.

In a different focus, several studies addressed issues surrounding varicoceles. Cocuzza suggests that urologists are likely to overestimate the size of a testi, disagree on varicocele grade 36% of the time, and clinical grade frequently does not correlate with ultrasound findings. Perhaps a new method for classifying varicoceles is warranted. Other areas that may require modification of approach include the right-sided varicocele. For concern of an intra-abdominal mass or process, abdominal imaging has historically always been ordered. Wenzler and colleagues reported that of 268 varicoceles, nine (3.4%) were right-

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sided and none demonstrated pathology on abdominal imaging. They suggest performing a chest exam for situs-inversus, abdominal exam for masses and consideration of imaging with palpable masses in older patients; however, they do state that larger studies are necessary to validate these results. Treatment of varicoceles was assessed by Dabaia and colleagues. Their results demonstrate improved indices of semen analysis such as morphology, reduced DNA fragmentation and improved total motile counts. If low or absent motility is an issue, Langille and colleagues applied the technique of Eulerian Video Magnification (EVM) to enhance the ability to detect minimally motile sperm under microscopy. In their experience an absolute increase of 14% motile sperm was gained using this technology; as such, this technology may have a role in men with very poor total motile counts when selecting sperm for ICSI. Further investigations are warranted.

Poster Session

Infertility: Basic Research, Physiology and Pathophysiology

Reviewer: Russell Hayden, MD

The poster session "Infertility: Basic Research, Physiology and Pathophysiology" addressed several promising research questions. Gene-related studies and proteomics were both heavily represented in this year's conference. Many groups investigated the evaluation of the infertile male, especially in regards to identifying those who may be candidates for successful sperm retrieval.

High throughput molecular screening was used in multiple studies in hopes of forwarding efforts to develop useful biomarkers. Dabaja et al., analyzed micro RNA profiles of normal subjects and compared these data against men with Sertoli cell only (SCO) pathology. They found that MicroRNA-202-5p was markedly reduced in men with SCO. Kovac and colleagues used micro array technology to study gene expression in men with non-obstructive azoospermia (NOA) and varicoceles. They found that 44 genes were expressed differentially in NOA males with varicoceles as opposed to NOA subjects without a varicocele. Most notably, ANGPTL4 (induced in hypoxic conditions) and CASP4 (involved in apoptosis) were over-expressed. Kovac's work will hopefully lead to future efforts in identifying men with NOA who may benefit from varicolectomy. Peire et al., also used high throughput gene analysis to glean differences between fertile and infertile subjects in a case-control study. Their work identified 19 single-nucleotide polymorphisms (SNPs) that may provide some insight into future genetic screens.

Multiple groups investigated the pathophysiology of germ cell loss and hypospermatogenesis. Zhang used a varicocele model to study expression of 14-3-3 epsilon, observing significant down regulation following induction of varicocele. This association was correlated with an increased rate of apoptosis. Two studies investigated the role of reactive oxygen species (ROS) and the impact of increased oxidative stress within the testes. Sharma demonstrated increased expression within the CREM signaling pathway for ROS+ males. Agarwal et al., studied the seminal plasma of ROS- and ROS+ males, and showed the unique expression of 4 proteins in the ROS+ group, representing potential targets for future biomarker research.

The session also presented some studies that aimed to improve sperm retrieval and preservation. McQuaid et al., presented a feasibility study of a novel microcapillary system for ultra-rapid vitrification of small numbers of sperm. Their work could benefit those individuals with cryptozoospermia. Shiraishi investigated the result of HCG/rhFSH based hormonal therapy upon intratesticular testosterone level. In their small cohort of men undergoing a second microTESE after initial failure, improved spermatogenesis was observed. Finally, Raman spectroscopy was used by Osterberg and colleagues to help identify areas of hypospermatogenesis as opposed to SCO in the microTESE setting. Eventually surgeons may be able to use this technology to

guide microscopic sperm retrieval in those individuals with relatively little spermatogenesis in a setting of predominant SCO.

Overall, the studies presented at this poster session provided new insights into the pathophysiology of male factor infertility and attempted to identify better techniques to retrieve and freeze sperm. These studies will surely provide a basis for additional research that will ultimately improve patient diagnosis and outcomes.

Podium Session Infertility: Therapy

Monday, May 19, 2014

Reviewer: Sudhir Isharwal, MD

The AUA session focusing on therapy of infertility was a much anticipated event this year. Urologists bogged down with unanswered questions, hoping to resolve some of the controversies in this field, and were looking forward to hearing about the new research developments. The exciting and interesting findings discussed in the podium session on Monday evening didn't disappoint them. This session was well-organized, presentations were concise and the data supported the conclusions drawn. However, answers provided in this session did raise some further questions, but that is the nature of medicine.

Varicocele repair is known to improve semen parameters and AUA recommends surgical treatment of varicocele in cases of male infertility with abnormal semen parameters. Rajanahally et al., reviewed the effect of varicocele repair on the outcome of assisted reproductive techniques (ART). Using pubmed search, data from seven studies was reviewed. Surgical treatment of varicocele didn't result in significant increase in the fertilization rate using ART (67.8% vs. 66.1%). However, varicocele repair led to increased pregnancy rates (48.5% vs. 41.9%) and live birth rate (46.5% vs. 32.1%). Also, pregnancy rates and live birth rate per cycle of intrauterine insemination technique were significantly higher in the varicocele-repaired group. Interestingly, sperm retrieval rate was also higher in patients with non-obstructive azoospermia and underwent varicocele repair. Results of this study will help practicing urologists to counsel the patients with uncorrected varicocele who would like to undergo ART. However, this study was limited by the retrospective nature, effect of hormonal status of patients and techniques of varicocele repair on the outcome of ART were not studied.

In 2010, the World Health Organization lowered the cutoff values for the sperm count to determine abnormal semen parameter. McGarry et al., in a retrospective study examined whether varicocele repair resulted in improved sperm count in the patients who were classified having abnormal semen parameter based on the 1999 WHO classification but would have been considered normal based on 2010 WHO classification. A total of 56 men would have been considered normal based on current classification but were classified abnormal based on 1999 classification. Varicocele repair resulted in significant increase in sperm count compared to the patients who elected for conservative therapy in this cohort of 56 men. Baseline sperm count in some of the infertile men in this group was high and other factors to classify them as infertile like sperm morphology, motility were not examined.

Varicocele repair doesn't definitively translate into improved semen parameters and some patients who undergo this invasive procedure don't benefit from the repair. Samplaski et al., generated a nomogram to predict outcome in terms of total sperm count based on preoperative variable using multivariate linear regression. Left varicocele grade, mean ejaculate volume, mean sperm concentration and percentage of motile sperms predicted the after varicocele repair total sperm count. This study didn't include hormones in the predictive variables, total sperm count was considered the outcome rather than change in sperm

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count as total sperm count varies greatly in the infertile men. Also, this study examines the predicted outcome in terms of semen parameter rather than the pregnancy rate.

Japanese investigators led by Dr. Kanto examined the characteristic differences between patients with sertoli cell only syndrome and uniform maturation arrest. Sperm retrieval rate was lower in patients with sertoli cell only compared to uniform maturation arrest, however, had significant lower ICSI cancellation rate and non-significantly higher clinical pregnancy rates. Sertoli cell only syndrome patients had lower chromosomal abnormalities but the reason for this finding is unknown. In a retrospective study by Kobori et al., attempted to standardize the treatment of hypogonadotropic hypogonadism using combination of human menopausal gonadotropin (hMG), human chorionic gonadotropin (hCG), and recombinant human follicle stimulating hormone (r-hFSH). In Japanese men with hypogonadotropic hypogonadism, treatment with hCG and r-hFSH was able in to induce spermatogenesis in significantly higher number of patients compared to treatment with hCG or hCG with hMG. Authors hypothesized that this difference was due to more stable nature of r-hFSH compared to hMG. Results of this study further validation with randomized control trial.

In men with non-obstructive azoospermia, maturation arrest is associated with worse prognosis. Bernie et al., investigated the factors associated with sperm retrieval rate in these men. Higher FSH level was associated with significantly higher sperm retrieval rate. However, in patients with testicular volume less than 10 cc, FSH value didn't affect the sperm retrieval rate. Interestingly, in patients with testicular volume equal or greater than 10 cc, highest FSH levels were associated with higher sperm retrieval rate. In conclusion, in their cohort patients with larger volume testes, low FSH was associated with poor sperm retrieval rate.

Testicular sperm aspiration (TESA) has fallen out of favor compared to microscopic testicular sperm extraction (micro TESE) due to poor sperm retrieval rate. TESA can be performed under local anesthesia compared to micro TESE that requires extensive dissection and general anesthesia. Chow et al., retrospectively looked at the results of TESA performed in their institute between 1999 and 2012. They had successful sperm retrieval in 97.8% patients with obstructive azoospermia and in 53% patients with non-obstructive azoospermia. No postoperative adverse effects were noted after TESA in their cohort. Authors prefer TESA compared to epididymal aspiration due to retrieval of more viable sperm with TESA.

Basar et al., from Turkey presented two interesting studies. In their first study, they pursued whether hormonal treatment prior to micro TESE in Klinefelter syndrome patients. Mosaic Klinefelter patients were excluded from the study. Patients treated with hCG and aromatase inhibitor prior to micro TESE had higher sperm retrieval rate compared to patients who didn't undergo hormonal treatment. Age of patients and infertility time were other prognostic factors in these patients, so an early micro TESE is recommended in these patients. In another study Basar et al., compared intracytoplasmic sperm injection (ICSI) outcomes between ejaculate sperm and testicular extracted sperm in patients with recurrent implantation failure. Fertility rates, pregnancy rate and take home baby rate were significantly higher in testicular sperm extraction group compared to ejaculate sperm group.

Intra-cytoplasmic morphological sperm injection (IMSI) is suggested to have better outcomes compared to ICSI in patients with increased DNA fragmentation. Cullen et al., investigated this hypothesis. Patients with DNA fragmentation index (DFI) greater than 30% and previous ART failure were included in the study. There were no differences in the

baseline characteristics (mean age of women and men, DFI, number of oocyte collected and number of oocyte fertilized) of both groups. This study didn't find any significant difference in the pregnancy rate, live birth rate and miscarriage rates between IMSI and ICSI group.

PGY-3

MP43: Sexual Function/Dysfunction/Andrology: Basic Research I

Reviewer: Barbara Kahn, MD

The basic research poster session moderated by Dr. Ronald Lewis and Dr. Run Wang included 19 posters from eight countries covering a broad range of topics. Posters that may lead to the greatest clinical impact are briefly summarized below.

Yoon et al., from Korea created a hypoactive sexual desire disorder model in female rats by performing bilateral oophorectomy and administering an estradiol injection to evaluate the effects bupropion and tadalafil on female rat mating behaviors. In this model, the female rats treated with combination therapy demonstrated significant improvement in proceptive and receptive mating behavior and decreased avoidance time compared to placebo and monotherapies. Currently, no drug therapies are available for the treatment of human female sexual dysfunction. Animal models demonstrating improved female mating behaviors are an indication of progress made toward an effective treatment that would correct this disparity.

Tavukcu et al., from Turkey used a T7-T10 spinal cord injury model in male rats to evaluate the effects of melatonin and tadalafil on rat erectile function. They measured the changes in molecular markers for oxidative stress, apoptosis and nerve activity as well as intercavernosal pressures. Melatonin and tadalafil individually downregulated markers of oxidative stress and apoptosis and upregulated markers of nerve activity. Combination therapy demonstrated a greater response presumably due to the unique mechanisms of action.

Dr. Kelvin Davies presented his group's research on opiorphin as a regulator of the gene expression pathway in priapism associated with sickle cell disease. He used a hypoxia model for sickle cell disease and measured increased gene expression of *vcsa1*, *a2br* and *hif1a* in corporal smooth muscle tissue in rats. However, when the hypoxia model rats were pretreated with siRNA against *vcsa1*, an opiorphin homologue, the gene expression in *a2br* and *hif1a* was no longer increased, indicating hypoxia-induced opiorphin expression regulates the expression of the downstream smooth muscle relaxation pathway. This research is a significant breakthrough in the understanding of priapism because it connects two etiologies of priapism in sickle cell disease, hypoxia and over-relaxation of corporal smooth muscle, into a single pathway.

Dr. Podlasek presented a poster on neuroprotective effects of sonic hedgehog (SHH) in the setting of post-prostatectomy cavernosal nerve injury. SHH has previously been shown by Dr. Podlasek's group to be important in cavernosal nerve morphology. Immunohistochemical analysis of pelvic ganglion after cavernosal nerve crush injury was performed. Under these conditions, the pelvic ganglion neurons died, SHH was decreased, and the downstream pathway was altered. Treatment of the crushed cavernosal nerves with SHH peptide amphiphile nanofiber hydrogel resulted in pelvic ganglion and the SHH pathway preservation. SHH may have potential to prevent post-prostatectomy erectile dysfunction.

Methods of testosterone replacement therapy delivery are sought that will allow for a long acting, stable serum testosterone. Current methods, such as injections, lead to large peaks that decay with time.

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Dr. Mohit Khara presented his group's research on a nanotechnology delivery system, which allows for sustained release of testosterone when checked over a 126-day period in castrated mice. Such a technology could revolutionize testosterone replacement therapy delivery and limit abuse potential.

MP32: Sexual Function/Dysfunction/Andrology: Evaluation Poster Session

Sunday, May 18, 2014

Reviewer: Helen R. Levey, DO, MPH

The Sexual Function/Dysfunction/Andrology: Evaluation Poster Session offered the audience a diverse and interesting look into current sexual health research. Some of the highlights are presented below.

As peer-reviewed publications are currently the optimal method for communicating our research findings, Trost and Mulhall started the session off with their review of recent publications in the area of male sexual medicine from high-impact, peer-reviewed urology journals. They found that despite critical appraisals performed by journal reviewers and editors of manuscripts, reference citations are frequently under-evaluated, citation errors are common and roughly 142 (30.3%) errors were identified in their review of eight articles. While the majority of errors were incorrect and suboptimal references, errors of source data misinterpretation/misrepresentation were not uncommon.

Next, Lopez et al., shared some exciting news for the coffee lovers out there. In their retrospective review of 3,724 men who participated in the National Health and Nutrition Examination Survey, a cross-sectional survey of the US population including men aged 20 years or greater, there was a significant association between increased caffeine and sugar intakes and decreased erectile dysfunction (ED). While the role of caffeine and sugar on ED varied among men with different comorbidities, BMIs, diabetes and/ or hypertension, caffeine and sugar consumption from coffee, tea, sodas and energy drinks reduced the odds of having ED.

While we have known for some time now that ED is associated with coronary artery disease (CAD) and may be a harbinger for early warning signs of cardiovascular disease (CVD), in the CUPPID Trial, Koenig et al., looked at the prevalence of ED, lower urinary tract symptoms (LUTS) and ejaculatory dysfunction (EJD) in a cardiology clinic population. They found that of 121 patients (mean age 68), 71% had symptomatic hypogonadism, 53% had severe ED, 57% had EJD and over 50% of patients had moderate or severe LUTS. While male patients with cardiac disease were shown to have a greater prevalence of ED, EJD and LUTS as compared to their peers, surprisingly, of those with moderate to severe ED, approximately three quarters had either failed or not received treatment.

In accordance with this, Pastuszak et al., from Baylor showed that screening for CVD in men presenting with ED is a cost-effective intervention for secondary prevention of both CVD and ED with ultimate effects on incidence and prevalence of both conditions. In the evaluation of men with ED, CVD screening should be considered.

Several presentations echoed the effects of low testosterone and the benefits of testosterone replacement therapy (TRT). Khurana et al., evaluated the association of hypogonadism in all-cause mortality in men with non-dialysis dependent chronic kidney disease (CKD) stages 3–4 and found that low testosterone was associated with significantly higher mortality in men with CKD stages 3–4. Dany-Jan Yassin et al., showed that in their prospective registry study of 261 hypogonadal obese men, that TRT over 5 years, produced weight loss and improved all parameters of the metabolic syndrome. Additionally reductions in weight and waist circumference were seen progressively over the full

study period. Further, this same group showed that as physiologic total testosterone was achieved, sustained long-term health related quality of life was improved in psychomotor, psychosomatic, urinary and sexual domains. Ramasamy et al., from Baylor looked at the distinct roles of testosterone and estrogen on sexual function in men undergoing TRT. They found that in a total of 423 men, elevated estradiol was associated with a stronger libido in men on TRT, despite these levels not appearing to be associated with erectile strength.

Lastly, while ED in men under the age of 40 is often presumed to be related to psychogenic causes, Wynia et al., showed that in a review of 120 men aged 18 to 35 years evaluated at a tertiary care center for ED, among those who underwent a penile Doppler study, 47% of them or 12.5% of the cohort as a whole, were found to have significant anatomic abnormalities contributing to their ED. These results may support the increased utilization of penile Doppler in young men with ED.

While these are just a few of the highlights of the session, all the posters were interesting and highlighted the fact that sexual medicine is a great field to be in and one that is rapidly changing! I was privileged to be a part of this program and appreciated the opportunity to cover this exciting poster session.

Sexual Function/ Dysfunction/ Andrology Evaluation

Reviewer: Ranjith Ramasamy, MD

The plenary session led by Dr. Kolettis, Dr. Alukal and Dr. Turek focused on the risks of advanced paternal age. The session detailed how paternal age leads to diminished semen volume, motility and morphology, increases in DNA fragmentation rates and a greater need for assisted reproductive technologies (ART), which are also less successful when attempted in older men. The testicle was described as an engine that over time experiences wear and tear and thus has diminution in quality control. Consequently, advanced paternal age leads to increased risks of single gene mutations, sex chromosome anomalies, miscarriages, pre-term birth, birth defects and adult diseases. Although there are no absolute age cutoffs, the age of 40–50 is often used as a cut-point to stratify risk. Even though the risk is real, problems with offspring of older fathers occur with very low rates and maternal age remains a much greater factor (20x > men). Based on current understanding of the data, the presenters concluded that there are no changes required to current genetic screening protocols, no absolute age barrier to conception, and no reason to dissuade older patients from trying to father a biological child. However, thorough discussion of the risks of advanced paternal age enables informed decision making with the couple.

In another plenary session, Dr. Nangia reviewed fertility effects of common medications. Given increased obesity, particularly in younger ages, the number of patients on chronic medication regimens at young ages (11–19) have increased by 30–50% for conditions such as diabetes, hyperlipdemia, ADD/ADHD and asthma. Most, but not all medication side effects can be reversed with cessation of the agent. Common drugs to consider include testosterone (never to be given in men desiring fertility), finasteride, alpha blockers, SSRIs, anti-hypertensives, antibiotics and chemotherapeutic agents. An alarming 25% of urologists surveyed said they would prescribe testosterone for infertile men with hypogonadism. A proper medication history remains critical in the evaluation of the infertile male.

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SSMR Poster Session Write-Up
The Sexual Function/Dysfunction/Andrology:
Medical and Non-Surgical
Reviewer: Katherine Rotker, MD

The Sexual Function/Dysfunction/Andrology: Medical and Non-Surgical poster session covered a wide breadth of topics from effects of testosterone and alpha-blockers to the efficacy of sexual health education intervention for men with rectal cancer. Excellent research was presented and thoughtful questions allowed for great discussion. Although numerous interesting studies were covered, I'll focus my review on a few below.

The topic of testosterone dominated the first half of the poster session with research regarding everything from weight loss following administration to side effects of subcutaneous administration. "Long-term testosterone treatment leads to progressive weight loss and waist size reduction in hypogonadal men" (#MP48-01) looked at the administration of 1000mg of testosterone undecanoate every 12 weeks over a period of five years in a population of obese hypogonadal men. They reported statistically significant decreases in mean weight each year as well as decreases in waist circumference, BMI and improvements in numerous parameters of the metabolic syndrome (fasting glucose, HbA1c, total cholesterol, LDL, HDL, triglycerides and systolic blood pressure). "Effect of subcutaneous testosterone pellet therapy on developing secondary polycythemia" (#MP48-07) looked at development of secondary polycythemia after administration of implantable testosterone pellets showing rates of polycythemia higher than previously established. They reported Hct levels >50% in 18% of patients at 12 months, 25% of patients at 16 months and 33% at 24 months.

Two abstracts looked at testosterone administration in patients with prostate cancer including, "Testosterone replacement therapy in patients with prostate cancer after prostatectomy: A 5-year single center experience" (#MP48-03) and "Safety of testosterone therapy in men with prostate cancer" (#MP48-08). The former studied hypogonadal men following prostatectomy, half of whom received TRT and half of whom did not and looked at biochemical recurrence as well as hypogonadal symptoms. They reported a statistically lower number of biochemical recurrences (1 vs. 8) in the treatment group (which admittedly contained fewer pT3a or higher patients) and symptomatic improvement amongst those treated in ED, libido and energy.

Two abstracts focused on clomiphene citrate administration. "Combination therapy with an aromatase inhibitor is needed in one out of six hypogonadal men treated with clomiphene citrate" (#MP48-05) found elevated estradiol levels (above lab normal) requiring use of anastrozole combination therapy after administration of clomiphene citrate in 17% of 271 patients as well as a significantly higher average BMI in those patient requiring the combination therapy. "Hypogonadal men taking clomiphene citrate report similar satisfaction compared to men on testosterone replacement therapy" (MP48-06) looked at post-treatment ADAM and qADAM satisfaction scores for men on various forms of treatment for symptomatic hypogonadism including clomiphene citrate, testosterone gel or testosterone injections and found them to be equivalent to each other and control. They also noted that the post-treatment testosterone levels for those on clomiphene citrate therapy were lower than those on injections but similar to those on gels.

PDE-5 inhibitors were another popular topic in this session with three studies looking at effects of this class of medications in post-prostatectomy men and one looking at the safety and efficacy of a newer PDE-5i. "Time to erectogenic effect of avanafil in a randomized,

placebo-controlled trial" (#MB48-11) described a phase 4 double-blind, 12-week, placebo-controlled study of avanafil in men with mild to severe ED. They reported statistically significant improvement in successful intercourse attempts (amongst other endpoints) within approximately 15 minutes (<17.9 minute) for both 100mg and 200mg dosing of avanafil. Common adverse events reported included headache, nasopharyngitis and flushing.

PGY 3

Male Voiding, Infection, Infertility, Sexual Dysfunction & Testis
Reviewer: Rachel Rubin, MD

Tuesday morning after the SSMR career development breakfast, Dr. Robert Brannigan and Dr. Alana Murphy moderated the Male Voiding, Infection, Infertility, Sexual Dysfunction & Testis video session. Highlights of the session included:

Trombetta et al., from Naples, Italy, presented on the use of both sigmoid and ileum for vaginoplasty in the male-to-female transsexual. They showed that sigmoid is preferred due to anatomical proximity, location of the vascular pedicle and limited need for subsequent dilations. However, they reported that using ileum is technically easier and more familiar to the urologist, while also having less mucus production compared to large bowel. Members of the audience suggested further functional data is needed to determine the best approach.

Dr. Allaway of Cumberland, Maryland, featured his technique of free-hand transperineal ultrasound guided prostate biopsy. This method aims to decrease infection by avoiding the rectal mucosa. In a study of 213 patients, there were no reported infections and the mean procedure time was only 10 minutes. Discussion focused on the learning curve, as well as the need for an anesthesia team, which increases costs.

Researchers from Johns Hopkins presented their technique and outcomes data for 14 patients undergoing Robotic RPLND for clinical stage 1 testis cancer. With use of the robotic fourth arm for retraction, they have achieved adequate nodal counts and good access to all major landing zones without re-docking the robot. Average operating time was 234 minutes, and the procedure has not been attempted in post chemotherapy recurrences.

The first reported intracorporeal robotic bilateral microsurgical vasovasostomy for obstruction from inguinal mesh was described by Dr. Wang from Tulane. They were able to demonstrate a 2-layer intracorporeal anastomosis using robotic magnification. Semen analysis 8 weeks post-op demonstrated a successful outcome.

Dr. Grober from Toronto presented on single-incision vasectomy reversal (SIVR), which was performed on 23% of his patients requesting reversal. The mini incision was carried out at the median raphe, but separate dartos muscle openings were made for each side. This procedure was best suited for patients without significant vasal gaps, large sperm granulomas or limited mobility of the scrotal contents.

Gudeloglu et al., featured their use of bio-wrap to cover a single layer anastomosis for vasovasostomy. The idea behind the wrap is to decrease anastomotic failures from granuloma/scar formation and possibly to reduce inflammatory pain. This method was used for four patients seeking reversal for post vasectomy pain syndrome. All patients had significant reduction in their pain scores post operatively.

Harnisch et al., from Milwaukee showed their technique of microscopic subinguinal varicocelectomy with ligation of the cremasteric fibers as an effective method in controlling cremasteric veins and decreasing possible locations of recurrences.

Intraoperative retrograde leak point pressure (RLPP) was used
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by Sourial et al., to assist in guiding sling tension. They compared 42 patients who had a Virtue male sling for post prostatectomy incontinence. The group of patients who had RLPP had statistically significant higher rates of both satisfaction and cure.

Yang et al., demonstrated a novel technique for an inverted Y reduction scrotoplasty with simultaneous placement of inflatable penile prosthesis. This method is best suited for patients with large redundant scrotums.

Finally, three videos showed the safety and efficacy of lasers in the treatment of BPH. Famakinwa et al., demonstrated Thulium VapoEnucleation of the prostate. Paonessa showed the use of Holmium laser enucleation of the prostate (HoLEP) for a 259 gram adenoma. Shah et al., from Mumbai, India, showed how high-power holmium laser can be successfully used to remove a permanent metallic stent in the prostate during holmium laser enucleation of the gland. Each procedure has a learning curve but revealed a useful addition to minimally invasive tools to treat BPH.

Peyronie's Disease Session Summary **Reviewer: Nannan Thirumavalavan, MD**

This year's AUA meeting was comprised of many important sessions demonstrating the high caliber of research in urology being performed worldwide. The Sexual Function/Dysfunction/Andrology: Peyronie's Disease Session not only demonstrated quality research, but fostered thoughtful dialogue among experts on Peyronie's disease (PD). Zahalsky et al., presented their pioneering efforts to improve erectile dysfunction by using human placental stem cells. Though they claimed an improvement in duplex ultrasound parameters at 3 months after injections, their results were met with some skepticism as there were no controls and sample size was very low. In addition, the true quality/quantity of stem cells is not known. Regarding the mechanism of action, it is unclear whether the stem cells themselves or growth factors may be contributing to any positive effect. However, this may warrant further study.

A vigorous area of research involves the use of Collagenase Clostridium Histolyticum (CCH) injections in the treatment of PD. Hellstrom et al., presented data from two double-blind, randomized, placebo-controlled studies to assess the patient reported change in symptoms and improvement in penile curvature following treatment with CCH. Overall, 75% of men reported improvement in symptoms, with a 25% improvement in curvature. In response to a question from the audience, they reported no difference in improvements with relation to age. Levine et al., assessed the collagenolytic activity of CCH in 4 patients' grafts after excision. They found that CCH was selective for types I and III collagen, the types mostly found in PD. Immunohistochemistry also demonstrates that CCH avoids damage to structures surrounding a PD plaque by sparing type IV collagen – present within connective tissues that surround arteries, large veins and nerves.

Lipshultz et al., assessed the time interval between the first two injections of the first treatment cycle of CCH to determine whether it changes outcomes. Each treatment cycle included 2 cycles of CCH or placebo, spaced anywhere from 24 hours to 72 hours apart. After stratifying the patients based on the time interval between injections, no difference was found in either safety or efficacy of the injections. Penile hematoma, swelling and pain were the most common treatment-related adverse events, with similar rates in each group. These findings permit flexibility when scheduling patients for CCH injections.

Lin et al., examined PD in a rat model and compared use of a vacuum erectile device (VED) to penile traction therapy (PTT). Five rats were assigned to placebo, 5 to the VED group, and 5 to the PTT group. The vacuum was used for 1 minute per cycle, for 5 cycles.

Penile traction was performed 3 times a day, for 20 minutes. Penile curvature, intracavernosal pressure and mean arterial pressure were measured after intervention. After 8 weeks, both the VED and PTT groups noted a decrease in penile curvature. Penile traction produced more improvement in curvature, but vacuum therapy resulted in more significant improvement in vasculogenic parameters (intracavernosal pressure to mean arterial pressure ratio). Weaknesses of the study include its applicability to human models. In addition, an induced plaque does not completely mimic a true PD plaque.

Trost et al., studied the efficacy of combining intralesional interferon with penile traction therapy. Of 124 patients undergoing interferon injections, 34% reported regular vacuum therapy. However, use of vacuum therapy did not affect change in curvature or penile length. PTT use did not correlate with pre-treatment erectile function, BMI, years with PD, pre-treatment curvature, changes in peak systolic velocity or resistive index. The data argues against the routine use of vacuum therapy as an adjunct to intralesional interferon.

Berookhim et al., investigated verapamil injection therapy in patients with stable PD. Of the cohort, 17 men had stable PD (defined as: duration >12 months, absence of penile pain per patient report, non-tender plaque and no change in deformity for ≥ 3 months). These patients underwent 6 intralesional injections using verapamil, each 2 weeks apart. No difference in comorbidities existed between those with and without stable disease. A significant change in curvature was defined as having a change of more than 10 degrees. 29% of patients with stable disease had a significant improvement. However, 12% noted a significant worsening, which calls into question the definition of stable disease. These findings suggest that patients with stable disease should be offered verapamil therapy.

Given the prevalence of injection therapy in PD, Gelbard et al., designed a model to allow physicians to practice injection technique. This is particularly applicable for CCH injections, as its efficacy is dependent on the accuracy of injection. The model is made of silicone and simulates a flaccid penis, with 3D plaques. It provides feedback with injections into the plaque, both in real time or in a "blind" mode. The feedback includes both electronic and tactical feedback, and evaluates the position of the needle, pressure used and injection pressure. The model has potential to play a significant role in training physicians to perform injections.

Two abstracts addressed surgical intervention for Peyronie's disease. Patil et al., performed a retrospective review of 176 patients who underwent surgical intervention for PD, 37 of whom underwent simultaneous IPP with Gore-Tex grafting. All patients had a functioning prosthesis and a penis straight enough for intercourse postoperatively. In addition, no infectious or mechanical complications were noted, which suggests that simultaneous Gore-Tex grafting may be a safe and effective procedure for treating both erectile dysfunction and PD. Kelley et al., addressed patient satisfaction with the Yachia Corporoplasty for PD. 94 patients underwent YC - 73 patients (78%) had follow-up and 45 patients (48%) participated in a telephone survey. The survey included questions regarding sexual experience, penile length, erectile pain, patient satisfaction (5-point Likert scale) and whether they would have the procedure again. The results showed that median curvature went from 60 degrees preoperative to 0 degrees postoperatively. 87% felt improved sexual experience and 89% denied pain. 93% reported shortening of the penis, but overall satisfaction was 3.5/5 and 78% reported they would go through the procedure again.

The session concluded with abstracts regarding patient satisfaction and psychosocial impact of PD. Davis et al., sought to define

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predictors of sexual satisfaction and psychological distress in men with PD by using validated questionnaires including the Global Measure of Sexual Satisfaction (GMSEX), the Dyadic Adjustment Scale (DAS), a measure relationship function, and the Short Form 36 (SF-36) mental health subscale. 78 men responded. Greater sexual satisfaction was predicted by higher scores on the IIEF, less penile length loss and less body image self-consciousness. Better mental health was predicted by less sexual interference. Most interesting of their findings, the degree of curvature did not have an effect on any outcomes. The best predictors of mental health included degree of sexual interference, psychosocial factors and loss of penile length. In addition, the partner's responses could play a significant role, which should be taken into account when treating these patients.

De Jesus et al., addressed patient satisfaction with PD treatment in patients under 29 years of age. The cohort consisted of 312 patients, and they were stratified by decade. In patients under 29 years old, psychosocial burden was increased, and PD treatment satisfaction and outcome measures were decreased. This data sparked a discussion about the younger patient with PD. It seems as if these patients do just as well clinically, but are not as happy with their results. Some suggested that this may be due to expectations in this age group. Another suggestion was to look at partner data and determine their impact on patient satisfaction.

**Poster/Podium Sexual Function/Dysfunction/Andrology:
Basic Research II
Monday May 19, 2014
Reviewer: Julie C. Wang, MD, MPH**

This basic research session moderated by Dr. Carol Podlasek (Northwestern University) and Dr. Landon Trost (Mayo Clinic) provided a diverse range of basic sciences research as well as very insightful discussions. Dr. Schlegel's study on intratesticular aromatase conversion was very proactive. Traditionally it has been thought that peripheral aromatase was considered to be the most significant source for testosterone conversion to estradiol (E2). This study demonstrated that after testosterone replacement to normal serum levels, there was no difference in circulating estradiol levels post-treatment. They concluded that the increase in estrogen levels was due to intratesticular aromatization.

In a study out of France, Dr. Palea et al., assessed the impact of dapoxetine on erectile responses and smooth muscle relaxation in the corpus cavernosa in a rat model. Corpora were isolated from rats and incubated with dapoxetine. They found that erectile responses were inhibited by dapoxetine and there were no contractile or relaxant effects on basal smooth muscle tone. The inhibitory activity may be one of the mechanisms by which dapoxetine delays ejaculation in patients suffering from premature ejaculation. Dr. Lipshultz' group identified NELL1 as a highly expressed gene in tunica albuginea fibroblasts in men with Peyronie's disease. Their results suggest that NELL1 plays a role in osteogenic cell differentiation, inflammation and plaque formation in Peyronie's disease.

A group from Rio de Janeiro, Gallo et al., used immunohistochemical staining to analyze the nerves and vessels in the corpus cavernosum and spongiosum. They found a more intense growth rate of nerves and vessels in the corpus cavernosum and spongiosum and that there is a significantly greater proportion of nerve growth when compared to vessel growth in the fetal period. Dr. Hedlund et al., looked at the efficacy of a local injection of human adipose tissue-derived stem cells in a rat model of chronic Peyronie's disease. They found that injection into the tunica albuginea of these rats partially reversed the fibrosis, but did not reduce elastosis. Dr. Angulo and his group in Madrid aimed to characterize the effects of insulin in human corpus cavernosum

and penile resistance arteries. Tissues were obtained from organ donors and patients with erectile dysfunction at the time of prosthesis insertion and evaluated for isometric tension recording. They found that insulin-induced relaxation of the corpora was impaired in erectile dysfunction patients. Treatment with insulin improved endothelium-dependent relaxation in human corpus cavernosum and this relaxation is mediated by the NO/cGMP pathway. They concluded that altered regulation of penile smooth muscle tone by insulin could contribute to erectile dysfunction in metabolic disorders.

Dr. Kim et al., in a group out of South Korea, evaluated the effect of chronic administration of a PDE5 inhibitor combined with glycemic control on erectile dysfunction in a rat model. The rats in the diabetes treated with insulin and PDE5 inhibitor group documented restored erectile function, compared to control, diabetes rat group, and diabetes treated with insulin alone. They concluded that chronic administration of PDE5 inhibitor and glycemic control with insulin showed a restoring effect of overt diabetes-induced erectile dysfunction.

Dr. Bivalacqua et al., sought to characterize the markers of neuronal injury and apoptosis in the major pelvic ganglion following bilateral cavernous nerve injury. These researchers found that glial fibrillary acidic protein and activating transcription factor 3 gene expression were increased in the major pelvic ganglion following nerve injury. They found temporal changes in markers of neuronal injury following bilateral cavernosal nerve injury; this may be a new therapeutic target.

Dr. Hellstrom et al., looked at the efficacy of using Pioglitazone, typically a type II diabetes medication, in a nerve-crush model of erectile dysfunction. They observed upregulation of iNOS, eNOS and nNOS in the high dose pioglitazone rat group and concluded that its administration improves erectile function in a post-prostatectomy erectile dysfunction model via a cGMP-dependent pathway. Dr. Grandas et al., hypothesized that androgen deficiency is a pro-inflammatory modulator, contributing to dysfunctional vascular modeling. They investigated this in an orchidectomized rat model and found that interleukin family cytokines, G-CSF, TNF alpha were elevated in rats with low testosterone, suggesting a correlation between androgen deficiency and a pro-inflammatory environment. Sarma et al., assessed the risk of non-HIV sexually transmitted infections (STI) among a group of circumcised and uncircumcised African American men in a cross-sectional analysis. Of the various parameters, the only significant factor that predicted STI contraction was number of partners and they found circumcision was not a predictor of STI. ◀



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*Congratulations to the 2014 Arnold Belker Fellow:
Ranjith Ramasamy, MD*

Dr. Ramasamy of Baylor College of Medicine in Houston, Texas, was the 2014 recipient of the Arnold Belker Traveling Fellowship Award.

Congratulations to the 2014 Andrology Research Consortium Website Functional SSMR Research Grant Award Winner: Kathleen Hwang, MD

Dr. Hwang of University Urological Associates in Providence, Rhode Island, was the 2014 recipient of the \$10,000 Research Grant for “The Effects of Chemotherapy Treatment on Epigenomic Profiles in Sperm.”

**JOIN US FOR THE
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2014
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14th Annual SSMR/SMSNA Traveling Fellowship Program

The 14th Annual Traveling Fellowship Program took place in conjunction with the AUA in Orlando, Florida, and was a great success. This year was the eighth 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 to allow them to participate in many of the events at the AUA.

2014 MEN'S HEALTH TRAVELING FELLOWSHIP RECIPIENTS:

*Michael Aberger, MD
Tolulope Bakare, MD
Ryan K. Flannigan, MD
Russell Hayden, MD
Sudhir Isharwal, MBBS, MD
Barbara Kahn
Helen R. Levey, DO, MPH
Katherine Rotker
Rachel S. Rubin, MD
Nannan Thirumavalavan, MD
Julie C. Wang, MD

University of Kansas, Dept of Urology
University of Arkansas Medical Sciences
University of British Columbia, Dept of Urology
Massachusetts General Hospital, Dept of Urology
University of Nebraska, Urologic Surgery
University of Kentucky, Div of Urology
University of Rochester, Dept of Urology
Rhode Island Hospital/Brown University, Dept of Urology
Georgetown, Dept of Urology
Boston Medical Center, Dept of Urology
Tulane University, Dept of Urology

**Recognized and invited, no money awarded*

2015 MEN'S HEALTH TRAVELING FELLOWSHIP PROGRAM

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 15th Annual Traveling Fellowship Program; this is the ninth combined award for the two societies. This year's Fellowship Program will take place in conjunction with the 2015 AUA Annual Meeting in New Orleans, LA.

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; this is accomplished through the education of practitioners, education of the laypublic and informational exchange of research and new advances. Meetings such as the AUA annual meeting and the subspecialty symposia organized by both our groups help achieve these goals. The SSMR and SMSNA are committed to cultivating interest in infertility and sexual medicine treatment careers in trainees, specifically through participation in these meetings.

Our goal is to present residents in training with a more intensive exposure to male fertility medicine and sexual medicine. The fellowship program will include mandatory attendance at the SSMR and SMSNA educational programs, complimentary SSMR banquet participation and the SMSNA lunch. Fellows will attend AUA post-graduate courses in male infertility, erectile dysfunction and the infertility podium and poster sessions. There is also 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 applicants who do not have a fellowship trained andrologist at their home program; as well, applicants should have ideally submitted an abstract for presentation at the AUA 2015 Annual Meeting. Participants accepted into the program are expected to take part in all components. This means that attendance at the meeting from Friday through Tuesday afternoon 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 or her choice. **Applications are due by January 9, 2015.** The awards will be announced by **February 13, 2015.**

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

Sincerely,

Joseph Alukal, MD
SSMR Director of Traveling Fellowship

Edward D. Kim, MD
SSMR President

Lawrence S. Hakim, MD, FACS
SMS President



Application for the Men's Health Traveling Fellowship Program 2015

Friday, May 15 – Tuesday, May 19, 2015
New Orleans, Louisiana

Please print or type:

Name: _____ Degree(s): _____

Work Address: _____

City: _____ State: _____ Zip: _____

Home Address: _____

City: _____ State: _____ Zip: _____

Work Phone: _____ Home Phone: _____

Fax: _____ Email: _____

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 Friday through Tuesday afternoon at a minimum.

Signature of Department Chairman: _____

Send completed applications to:
SSMR/SMS Traveling Fellowship
ATTN: Michelle DeConcilis
Two Woodfield Lake
1100 E Woodfield Road, Suite 350
Schaumburg, IL 60173



If questions, contact:
Michelle DeConcilis
(847) 264-5955
michelledc@wjweiser.com

DEADLINE JANUARY 9, 2015

MARK YOUR CALENDARS

Online Voting for SSMR Leadership

From February 14 – April 15, 2015, you will be able to vote for the open 2015 – 2016 SSMR leadership positions online at www.ssmr.org. Exercise your RIGHT TO VOTE!

Society for the Study of Male Reproduction 2015 Annual Meeting “Achieving, Maintaining and Using Healthy Sperm: Alpha to Omega” Sunday, May 17, 2015 New Orleans, LA

Dear SSMR Membership:

I am very pleased and excited to announce our program for the SSMR 2015 Annual Meeting in New Orleans, Louisiana: “Achieving, Maintaining and Using Healthy Sperm: Alpha to Omega.” Our goal is to provide an update on methods to maximize and maintain male fertility, especially as applied to assisted reproductive technologies.

Our program is divided into three primary sections. First, we will explore (a) how male factor may impact embryo development and pregnancy loss and (b) how the choice of sperm may impact IVF success. Given that many couples with male factor must rely on IVF, our second section will provide an update on IVF with a particular focus on risks of current techniques. Finally, as rejuvenation centers have increased in number across the US, we will seek to understand what they are and how they may impact a man’s reproductive health. Our panel of speakers is rounding into great shape and will include many of the world’s experts in the discovery and management of these topics.

Our day will conclude with a presentation and discussion of challenging cases that members of SSMR have faced. We hope this will lead to a lively session where different opinions on management will be considered. Members will be invited to submit interesting cases as the meeting nears.

Ideally, we will be able to demonstrate to the audience the importance of the male in reproduction and the current reproductive dangers that exist. This will be useful both for the reproductive urologist in practice who needs this information and the general urologist who wants a better understanding of the treatment options one can offer to his or her patients. Our interesting cases will also provide an opportunity to discuss other topics of interest to the membership. I am very hopeful that there will be something of use in our program for everyone in the audience.

Looking forward to seeing everyone in New Orleans!

Best wishes,
Michael L. Eisenberg, MD

The educational goals of our program include improved understanding of the role of the male in ART and dangers to male fertility which may exist.

ASRM 71st Annual Meeting

October 17 – 21, 2015
Baltimore, MD

ASA Special Symposium

April 18, 2015
Salt Lake City, Utah

ASA 40th Annual Conference

April 18 – 21, 2015
Salt Lake City, Utah

AUA 2015 Annual Meeting

May 15 – 19, 2015
New Orleans, LA

ASA Andrology Lab Workshop

April 18 – 21, 2015
Salt Lake City, Utah

SSMR Annual Meeting at the AUA Annual Meeting

Sunday, May 17, 2015
New Orleans, LA