

China-Japan-Korea (CJK) Andrology Session

Chairpersons : Nam Cheol Park (Pusan National University, Korea)
Zhong Cheng Xin (Peking University, China)
Mikio Namiki (Kanazawa University, Japan)

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Zhongcheng XIN (Andrology Center, Peking University First Hospital, Peking University, Beijing, China)

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Akihiro Kanematsu (Department of Urology, Hyogo College of Medicine, Nishinomiya, Japan)

In Situ Activation and Preservation of Penile Progenitor Cells Using Icariside II in an Obesity-Associated Erectile Dysfunction Rat Model.

Zhongcheng XIN

Andrology Center, Peking University First Hospital, Peking University, Beijing, China

Obesity-associated erectile dysfunction (ED) involves pathologic change that may be related to deficit of the penile endogenous stem/progenitor cells. Therefore, an in-depth study of the penile stem/progenitor cells in the pathogenesis of ED is warranted. For this study, eight Zucker Lean (ZUC-Lepr^{fa} 186 ; ZL group) and 16 Zucker Fatty (ZUC-Lepr^{fa} 185 ; ZF) male rats received an intraperitoneal injection of 5-ethynyl-2-deoxyuridine (EdU) to track endogenous stem cells. Twelve weeks later, the ZF rats were randomized to gavage feeding with 1.5mg/kg/day of icariside II (ZF + ICA II group) or the solvent (ZF group). Treatment lasted 4 weeks and was followed by a 1-week washout period. ZF rats had impaired erectile function with related pathologic changes compared with ZL rats. ICA II treatment restored erectile function and prevented smooth muscle atrophy, endothelial dysfunction, and lipid accumulation compared with no treatment. EdU label-retaining cell levels were higher in the ZF + ICA II group compared with the ZF group. Histone 3 phosphorylation at Ser 10, a specific mitotic cell marker, was additionally used to identify dividing cells. ICA II activated more penile stem cells to proliferate in ZF rats compared with ZL rats. These results suggest that ZF rats can be used as a model for obesity-associated ED and that ICA II improves erectile function and pathologic changes through endogenous progenitor cell preservation and proliferation.

Analysis of human sperm DNA fragmentation index (DFI) related factors: a report of 1010 subfertile men in China.

Yao Bing

The Reproductive Medical Centre, Nanjing Jinling Hospital, Nanjing University School of Medicine, China

BACKGROUND:

Many factors may lead to sperm DNA damage. However, it is little known that the correlations of sperm DNA damage with obesity-associated markers, and reproductive hormones and lipids levels in serum and seminal plasma.

METHODS:

In our prospective study, a total of 1 010 subfertile men, aged from 18 to 50 years old, were enrolled from August 2012 through June 2015. Their obesity-associated markers, semen parameters, sperm acrosomal enzyme activity, seminal plasma biochemical markers, and reproductive hormones and lipids levels in serum and seminal plasma were detected. Sperm DNA fragmentation index (DFI) was determined by sperm chromatin structure assay. The correlations between DFI and each of the above-mentioned variables were analyzed.

RESULTS:

Spearman correlation analysis showed that sperm DFI was positively related to age and abstinence time ($P < 0.001$). Sperm DFI was also positively related to semen volume and percent of abnormal sperm head ($P < 0.001$), while negatively related to sperm concentration, progressive motility (PR), sperm motility, total normal-progressively motile sperm count (TNPMS), percent of normal sperm morphology (NSM), percent of intact acrosome and acrosomal enzyme activity ($P < 0.001$). Sperm DFI was positively related to seminal plasma zinc level ($P < 0.001$) but unrelated to seminal plasma total α -glucotase, γ -glutamyl transpeptidase (GGT) and fructose levels. There was no any correlation between sperm DFI and obesity-associated markers such as body mass index (BMI), waist-to-hip ratio (WHR), waist circumference (WC) and waist-to-height ratio (WHtR), and serum lipids levels, but there was positive correlation between sperm DFI and seminal plasma triglyceride (TG) and total cholesterol (TC) levels ($P < 0.001$). Sperm DFI was positively related to serum luteinizing hormone (LH) and follicle stimulating hormone (FSH) levels and seminal plasma FSH and estradiol (E2) levels ($P < 0.001$), but unrelated to serum and seminal plasma testosterone (T) levels. The multivariate regression analysis for the variables which were significantly correlated with sperm DFI in Spearman correlation analysis showed that age, semen volume, sperm concentration, progressive motility, TNPMS and intact acrosome were independently correlated with sperm DFI.

CONCLUSIONS:

There are many potential factors associated with sperm DFI, including age, abstinence time, spermatogenesis and maturation, seminal plasma lipids and reproductive hormones levels. However, the potential effects of seminal plasma lipids and reproductive hormones on sperm DNA damage need still to be demonstrated by the studies with scientific design and a large size of samples.

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Micro Surgery for treating male infertility in China

Yiming Yuan, Zhongcheng Xin, Yinglu Guo

Andrology Center & Urology Department, Peking University First Hospital, China

With the recent advances in assisted fertilization such as in-vitro fertilization (IVF)/intracytoplasmic sperm injection (ICSI), the couples suffer from infertility would like to choose assisted fertilization and nearly 1 million cycles ICSI were carried out in China every year, even its pregnancy rate 40% and live birth rate 35%, with very costed and with risks of inherent and born defects.

Varicoceles are highly relevant (38%) and can result in a myriad of deleterious effects on male reproduction. Recent studies demonstrated that microsurgery for Varicocele correction, with the lowest recurrence rate and the highest pregnancy rate compared with other surgical approaches, is a more cost-effective therapeutic modality than other surgical approaches. Obstructive azoospermia (OA) are highly prevalent (13%) in male infertility results from obstruction of the excurrent duct at any location between the rete testis and the ejaculatory ducts. Microsurgical reconstruction of the male reproductive tract with vasoepididymostomy or vasovasostomy is associated with a considerably lower cost per delivery and higher delivery rate. For the treatment of nonobstructive azoospermia (NOA), Microdissection TESE is a more effective approach than other TESE approaches for ICSI with a patency rate 40-60%.

In our center, there are more than 5000 cases of patients were treated by microsurgery, including microsurgical varicocelectomy/ vasectomy reversal/ epididymovasostomy/ Microdissection TESE, from 2006 to 2018. Up to now, we have trained about 500 surgeons for microsurgery from 30 provinces in China.

**UROLIFT ;
A minimal invasive intra-prostatic implant for benign
prostatic hyperplasia treatment**

Sae Woong Kim

Department of Urology, Seoul St. Mary's Hospital The Catholic University of Korea, College of
medicine

Benign prostate hyperplasia is a disease in which the urinary output to the bladder outlet and the lower urinary tract symptoms occur due to the proliferation of the prostate gland, which can cause serious complications such as detrusor weakness and renal failure.

UroLift (®) is a new instrument designed to alleviate many male lower urinary tract symptoms caused by BPO, and is the latest technology in prostate treatment. This method is easier than the conventional method of treating BPH ; TUR-P. The procedure ends with a simple clip ligation on the prostate. Unlike surgery, which removes the prostate tissue itself, it opens the pathway by ligating the prostate that blocks the urethra. Furthermore, it is possible to perform under simple local anesthesia rather than general anesthesia, and it is advantageous in preserving ejaculatory function with lesser bleeding. Because of these advantages, patients are preferred as the first method of treating BPH with LUTS, who do not want to be hospitalized, do not want to surgery, and unaffected by sex life.

As a minimal invasive device for benign prostatic hyperplasia (BPH) treatment, Urolift is widely accepted in the worldwide but it is not widely used in Korea. In our initial experience, intra-prostatic UroLift (®) implant procedure seemed feasible, efficacious for LUTS and well tolerated, especially concerning sexual outcomes. Further study of the UroLift (®) implant in France is currently being planned.

In this time, I'll give you an introduction and tips of the UroLift(®) implant.

Permanent loss of sexual function after glans penis augmentation using hyaluronic acid gel for premature ejaculation : a reason for concern? A clinical practice survey in Korea

Sun Tae Ahn, Du Geon Moon

Dept of Urology, Korea University Guro Hospital, Seoul, Korea

Introduction : Glans penis augmentation (GPA) using hyaluronic acid (HA) gel has been developed for the treatment of premature ejaculation (PE) with penile hypersensitivity. The current International Society for Sexual Medicine guideline (ISSM) for PE does not recommend GPA using HA gel due to concerns about permanent loss of sexual function. However, HA filler is a biodegradable material, and is believed not to cause permanent loss of sexual function.

Aim : To investigate whether urologists experienced patient complaints of sexual dysfunction after GPA using HA filler in actual clinical practice.

Methods : Between March 2016 and July 2016, a specially designed questionnaire was mailed to 86 selected Korean urologists who had managed PE patients with GPA using HA filler or autologous fat.

Main Outcome Measures : The survey assessed both prevalence and awareness of sexual dysfunction after GPA using HA filler.

Results : Of 56 (62.9%) urologists who completed the survey, 47 (87.0%) and 36 (64.3%) had experience using selective dorsal nerve neurotomy (SDN) and GPA using HA filler, respectively. They reported performing a combined total of 10,732 SDN procedures and 4,344 GPA procedures using HA filler, with 801 (7.5%) cases of glans pain or paresthesia and 320 (3.0%) cases of erectile dysfunction after SDN. However, only 36 (0.8%) cases of glans pain or paresthesia and no cases of erectile dysfunction were reported after GPA using HA filler.

Conclusion : Contrary to the concerns in the ISSM guidelines, paresthesia and hypoesthesia after GPA using HA filler are rare and no cases of erectile dysfunction were reported in this survey.

Table 1. Complications after selective dorsal neurotomy (SDN) and glans penis augmentation (GPA) using hyaluronic acid (HA) filler

Complication	SDN (n = 10,732) Number of patients (%)	GPA using HA filler (n = 4,344) Number of patients (%)
Recurrence of premature ejaculation	947 (8.8%)	206 (4.7%)
Glans pain or paresthesia	801 (7.5%)	21 (0.5%)
Erectile dysfunction	320 (3.0%)	0 (0.0%)
Edema	253 (2.4%)	6 (0.1%)
Psychotic disorder	220 (2.0%)	0 (0.0%)
Hematoma	89 (0.8%)	16 (0.4%)
Scar formation	43 (0.4%)	17 (0.4%)
Wound dehiscence	37 (0.3%)	11 (0.3%)

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Clinical usefulness of a smartphone based computer assisted semen analyzer

Nam Cheol Park

Pusan National University, Korea

Treatment strategy of Japanese advanced prostate cancer patients based on serum testosterone level

Shinichi Sakamoto, Koji Kawamura, Takashi Imamoto, Akira Komiya, Tomohiko Ichikawa
Chiba University Graduate School of Medicine, Chiba, Japan

Recent evidence indicated upfront usage of chemotherapy / novel androgen targeted therapy hold the clinical advantage in advanced prostate cancer. On the other hand, Asian patients, including Japanese, respond reasonably well to the standard androgen deprivation therapy (ADT).

So, it is of prime concern to determine “high-risk” patients whose treatment are insufficient by standard ADT in Asia. In this regards, we have attempted to establish the Japanese “high-risk” patients based on the serum testosterone (TST) level. Previously, we reported nadir TST 20ng/dL during ADT is the potential marker to predict the favorable prognosis in advanced prostate cancer. On the other hand, since baseline serum TST levels differ between patients, we have assessed the value of serum TST reduction itself in predicting prognosis of the prostate cancer patients. Based on the study of 222 advanced prostate cancer patients (Stage \geq C) who received primary ADT, serum TST reduction 350ng/dL remained as an independent prognostic factor together with nadir TST 20ng/dL. When classified “high-risk” as patients who did not attain both nadir TST 20ng/dL and TST reduction 350ng/dL, four years overall survival (OS) rate was 70%. On the other hand, OS of intermediate risk (who attained one of the factors) and low risk (who attained both factors) were 90% and 98%, respectively. Since OS of Japanese “high-risk” patients were equivalent to the OS of the European patients, the risk classification based on the serum TST level may potentially differentiate the poor prognosis patients who should be treated with upfront intensive therapy.

Factors affecting male life of hypospadias patients in adulthood

Akihiro Kanematsu

Department of Urology, Hyogo College of Medicine, Nishinomiya, Japan

We report results of a survey study in hypospadias patients who had been corrected during childhood in two-stage era, and reached adulthood. Out of self-entry questionnaire results, we extracted factors associated with achievement of sexual intercourse, marriage, and paternity in these patients, using multivariate survival analysis.

Of the 518 contacted patients, 108 (aged 18–50 years, median, 28 years) met the inclusion criteria of the study. Two- and one-stage repairs were performed as the initial treatment in 79 and 12, respectively, while 17 of the analyzed cases were reoperations for patients initially treated elsewhere. The original types of hypospadias classified by position of the original meatus were 31 glandular, 26 penile, 13 penoscrotal, 23 scroto-perineal, and 15 unknown. The candidate factors were gestational age at birth, birth weight, current height, current weight, IPSS, IPSS-QOL, IIEF-5, type of hypospadias, job status, school education, undescended testis, and additional surgical procedures.

Intercourse experience rate and marriage rate of all analyzed patients were largely similar to the normal population. Multivariate analyses showed that, intercourse experience was associated with milder type of hypospadias and lower birth weight, marriage was associated with a stable job, and paternity was associated with absence of additional surgery after completion of the repair at our institute. Although the three events, intercourse, marriage and paternity usually conceived as successive events, scant overlap was noted in the associated factors.

The present findings provide important reference information for surgeons and parents regarding future life of children treated for hypospadias as adult males.