

Editorial

Men's health is evolving

The Asian Journal of Andrology (AJA) is growing at a fast pace and becoming one of the leading journals in the field of andrology thanks to the leadership of Prof. Yi-Fei Wang, Editor-in-Chief of AJA, and the hard work of the AJA editorial staff. It was the spring of 2006 in Chicago when Ms. Dan-Qing Ren, Scientific Editor of the AJA, first approached us at the 31st American Society of Andrology (ASA) Annual Meeting regarding publishing a special issue on men's health. We were honored by the invitation to be guest editors for this special issue. We discussed potential topics with many of the contributors while Ms. Qin-Zhu Zheng, Editorial Director of the AJA worked out the details and met with us at the 32nd ASA Annual Meeting in Tampa, Florida. We are very pleased to present this issue of superior articles with contributions by internationally recognized authorities.

Andrology is an exciting and vibrant field involving multidisciplinary specialties. Men's health is a relatively new area of interest under the scope of andrology that deals with male reproductive health including male sexual function/dysfunction, fertility/infertility, male reproductive endocrinology and general well being. In the past two decades our understanding of the physiology of sex has experienced exponential growth. Our knowledge of the pathophysiology of erectile dysfunction (ED) is greater now than at any time before. Each discovery provides new targets for potential therapies and raises new questions. For example, in this issue, researchers from Johns Hopkins describe a novel pathway involving reactive oxygen species (ROS) causing ED through activation of nicotinamide adenine dinucleotide phosphate (NADPH) oxidase [1]. Gene and stem cell-based therapies targeted at the penile endothelium have gained momentum in preclinical studies. Researchers from Johns Hopkins and Duke University highlight our current understanding of endothelial-specific gene and stem cell-based therapies performed in a number of experimental animal models, including changes of growth factors in hypercholesterolemic ED and the employment of various growth factors for ED therapy in animal studies [2, 3].

It is estimated that 322 million men worldwide will suffer from ED by 2025 [4]. Accumulated data from basic science and clinical studies have determined a link between the occurrence of ED and a number of lifestyle factors, such as smoking, obesity, alcohol consumption, and lack of physical activity. Hypogonadism is a common entity in aging males and presents with decreased sexual interest, diminished erectile capacity, delayed or absent orgasms and reduced sexual pleasure. Clinicians from Turkey review the potential benefits of modifying these factors to improve ED with respect to evidence-based medicine [5, 6]. In the aging male, the associations between lower urinary tract symptoms (LUTS) and ED have recently been elucidated. There is emerging interest in identifying the common approaches to managing these two conditions simultaneously and many remain to be investigated [7].

Prostate cancer is the leading solid-organ cancer among adult men in the U.S. and radical prostatectomy (RP) is the most common treatment option for clinically localized prostate cancers with excellent long term results. Despite being a first-rate therapy for prostate cancer, RP is associated with several quality of life issues; mainly urinary incontinence (UI) and ED [8]. ED following RP is hypothesized to be secondary to the cavernous nerve injury which is termed as neuropraxia. Researchers from the University of Ottawa and the University of California review the recent advances in the neurobiology of growth factors, neural development, and prevention of cell death that have resulted in a heightened clinical interest in the development of protective and regenerative neuromodulatory strategies for the cavernous nerves [9]. Recent advances in the understanding of post-prostatectomy ED have also led to promising, yet controversial new strategies, namely penile rehabilitation in the management of this serious issue. The article from New York University reviews in detail the epidemiology, experimental pathophysiological models, rationale for penile rehabilitation, and currently published rehabilitation strategies [10]. For patients suffering from both ED and UI after RP that require surgical treatment, they can be best served with combination therapy of penile prosthesis implantation and male sling or artificial urinary sphincter as reviewed by physicians from the University of Texas Medical School at Houston [11]. One of the concerns regarding penile implantation is the loss of penile length. A simple technique of ventral phalloplasty reported in this issue may help with patient satisfaction, cosmetic results and improve perception of penile length [12].

Urethral injury is a very common condition seen in general urologic practice. Surgical reconstruction for urethral stricture disease has now become a mainstay for treatment in refractory cases and the success rate is now well documented throughout the urological community. Surprisingly, despite the magnitude of genital dissection required

for many complex urethroplasty procedures, little has been reported regarding the effect of urethral reconstruction surgery on erectile function. Authorities from the University of Texas Southwestern Medical Center discuss the effects of various urethral reconstructive techniques, broadly categorized into two categories—anterior and posterior—on erectile function [13].

Peyronie's disease (PD) is the formation of a plaque of fibrous tissue within the tunica albuginea of the penis that causes penile deformity and disability. Men with PD can be both physically and psychologically devastated. Yet, treating this condition has been a challenge and a frustration for many urologists and andrologists due to the lack of effective medical or minimally invasive surgical treatment. In this issue of the AJA, experts from the U. S. and Brazil report on the currently available non-surgical therapies and the optimal surgical approaches to improve patients' satisfaction [14, 15].

Male erectile function is a precisely controlled event at the molecular level. Erection beyond or unrelated to sexual desire manifests as priapism. Management of priapism is another challenge since little is known regarding the signal transduction process and the molecules causing and maintaining priapic events. A review from the University of Texas Medical School at Houston enthusiastically reviews the recently published research in this area and claims that the advances in understanding the pathophysiology of priapism will lead to new management strategies [16].

The most common male sexual dysfunction is premature ejaculation (PE). Unfortunately, there is not a universally accepted definition of PE. Physicians are also facing tremendous difficulties in the management of PE because no medication has been approved by the Food and Drug Administration (FDA) to treat PE. However, recent advances in the study of PE have taken us one step closer to the effective treatment of this disorder. The review from Tulane University discusses the current and emerging treatment options and medications for PE and provides the advantages and limitations of each treatment option in the light of current published peer-reviewed literature [17].

When we discuss sexual function and sexual disorders, one should never forget sexually transmitted diseases (STDs). STDs are within the first ten most bothersome of diseases in young adult males and females in developing countries. The review from Brazil discusses the global epidemiology of STDs, emphasizing that prevention is the key to control STDs [18].

Soon after phosphodiesterase-5 (PDE-5) inhibitors became popular as effective oral medications in the management of ED, concerns regarding the effects of PDE-5 inhibitors on sperm function were raised. *In vivo* and *in vitro* studies have been carried out to examine whether PDE-5 inhibitors positively or negatively affect sperm parameters and sperm fertilizing capacity. Unfortunately, the results of these studies are still controversial. The existing hypothesis is that some PDE-5 inhibitors may enhance the secretory function of the prostate and subsequently increase the qualitative and quantitative motility of spermatozoa. Researchers from Ioannina University in Greece and Tottori University in Japan predict that the effects of PDE-5 inhibitors on sperm parameters may lead to improvement of the outcome of assisted reproductive technology programs and PDE-5 inhibitors might serve as adjunctive agents for the alleviation of male infertility [19].

Human fertility and sexual behaviors can be associated with the environment. There are many agents, called endocrine disruptors, that have estrogen-like and/or anti-androgenic actions. Endocrine disruptors can exert potentially hazardous effects on the male reproductive axis resulting in infertility. They may also disrupt other hormonal dependent reproductive functions causing ED. In addition to reducing fertility, causing ED, and abnormal sexual development, an authoritative review from Tulane University in this issue warns us that these endocrine disruptors may contribute to testicular and prostate cancers, alter pituitary and thyroid gland functions, damage immune systems, and cause unpredictable neurobehavioral effects [20].

Andrology, like other medical specialties, has progressed quickly by keeping pace with the evolution of modern technology. One of the examples is seen in this AJA special issue in the report from the physicians of Vanguard Urological Institute and the University of Texas Medical School at Houston regarding the use of robot-assisted varicocelectomy [21]. One anticipates further news and developments in the field of andrology and men's health in the coming years. It is hoped that this special issue of the AJA will stimulate a whole generation of researchers in this rapidly progressing area of medicine.

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