The Treatment of Erectile Dysfunction in the Elderly

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If the 1990's were termed the decade of the prostate, then the dawn of the new millennium should be remembered for the rebirth of the penis. A number of studies have indicated a progressive decline in sexual function in healthy aging men. The estimated prevalence rate of erectile dysfunction rated mild to severe ranges from 39% in 40 year olds to 67% of the seventy-year-olds. The probability of complete loss of erection capacity increases from 5% at 40 years of age to 15% at 70 years. With the discovery of the seeming panacea, sildenafil, a large fraction of these patients can resume their previously hindered sexual lives. The treatment of erectile dysfunction has quickly moved from the urologist's office to the general practitioner. Although at first glance, this may be a blessing for both groups, the complete evaluation and care of the patient with erectile dysfunction must not be forgotten.

In the aging patient, the etiology of erectile dysfunction is multifactorial. Masters and Johnson (1977) noted a number of changes in older men including: greater latency to erection, less turgid erections, loss of forceful ejaculation, decreased ejaculatory volume, and a longer refractory period. Other investigators have indicated a decrease in penile tactile sensitivity, a decrease in nitric oxide synthase activity, a heightened cavernous muscle tone, and/or a decrease in testosterone in the elderly patient. The most common causes of organic erectile dysfunction are vascular abnormalities, frequently associated with arteriosclerosis and diabetes mellitus. Others factors include neurologic diseases (Alzheimer's disease, multiple sclerosis and spinal cord lesions), chronic systemic

disorders (renal, hepatic and lung), oncologic diseases and pelvic irradiation. Our laboratory results have shown a decrease of nitric oxide synthase-containing nerves and lower responses to central and peripheral stimulus in old rats. Hypogonadism, as frequently seen in the elderly, is also a risk factor for erectile dysfunction and loss of libido. Researchers have shown in the laboratory that the restoration of erectile response can be achieved with replacement of testosterone or dihydrotestosterone. Pituitary and thyroid diseases can also affect the libido and erection. Drug related ED is estimated to be around 25% in various studies. Antihypertensives, hormones, antidepressants, tranquilizers, alcohol, tobacco, heroin and cocaine have all been associated with ED. One would expect that the elderly patient would be more likely to be taking more medications, which could alter his erectile response.

A patient's goal-directed approach to diagnosis and treatment of ED has been our clinical approach. It takes in consideration patient's physical and mental health, motivation and goals. Psychosocial factors should not be underestimated. Our workup includes a careful history and physical exam, a systemic review including medications, social and psychological history and laboratory tests. It is helpful to evaluate the performance status of a patient and their ability to physically tolerate sexual activity. In a patient with a severe cardiovascular history, it is wise to get cardiologic advice.

For a majority of the elderly, we take a very conservative approach. Treatment options are usually explained to patient preferably with his partner. For those highly motivated with good performance function, we may offer invasive testing and evaluation. It is obviously important to treat underlying conditions including hypogonadism,

diabetes, and cardiac disease prior to initiating management of ED. An attempt should also be made to withdraw causative medications.

First line therapy is optimally oral therapy if the patient does not have coexisting cardiac symptomatology including concurrent use of nitrite medications. A sildenafil (Viagra^{R}) test can be given, by dispensing sample of sildenafil for home use. If the patient fails this test or has a contraindication to sildenafil, the vacuum constricting device (VCD) is a good alternative as a first line therapy. Some patients are successful using sildenafil to get an initial partial erection and then supplementing this erection with the VCD.

Second line therapy in the care of these patients is with an office injection and stimulation test. We inject patients with either PGE-1, bimix (phentolamine and papaverine), or trimix (phentolamine, PGE-1 and papaverine) and ask them to subsequently self-stimulate. If an adequate and satisfactory erection is attained, the patient is asked to return for subsequent injection teaching for home therapy. Alternatively, intra-urethral alprostadil may be given in place of intracavernosal therapy. In patients with sub-optimal erections with these therapies, frequently we recommend the VCD 10 minutes after injection and stimulation to supplement an inadequate erection. Prior to using the VCD, the patient must be informed to wait 10 minutes after injection to ensure the puncture site has closed. Finally, if a patient is dissatisfied with these therapies, a penile implant can be considered.

With the advent of effective oral therapy for erectile dysfunction, the curtain silence has been raised for this once taboo topic. As our understanding of the basic science of ED improves, our therapeutic armamentarium will increase. In caring for the

elderly patient, the practitioner is challenged with the daunting task of trying to separate the multiple variables that can account for the patient's ED. It is not only important in these patients to restore their erections, but also to exclude other underlying disease processes which may contribute to or exacerbate their erectile and sexual function. Recently a group from North Carolina reported a 15% of previously undiagnosed urologic cancer in a population of men presenting for erectile dysfunction.