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Erectile Dysfunction: A Presentation of Sexual Health Problems

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"Sexual Health" is the integration of somatic, emotional, intellectual and social aspects of sexual being, in ways that are positively enriching and that enhance personality, communication and love (WHO statement, 1974). Erectile dysfunction (ED) is only a presentation of sexual health problems, it relates to four dimensions of health in term of causes or effects, for example: chronic diseases such as cardiovascular disease, diabetes, and physical inactivity related to physical health; anxiety and depression are mental aspects which relate to ED; partner relationship is a social concern and self esteem is a spiritual aspect of health. In medical school, ED or sexual health should be our example or model in teaching of a holistic health approach.

How important is ED?

As mention above, ED is related to holistic health and quality of life. The prevalence of ED is quite high. From a nationwide survey in 1999, the prevalence of ED in Thai men age 40-70 years old was 37.5%[1] and increased up to 42% in 2004. The prevalence was increased with age, the age between 40-49, 50-59 and 60-70 years the prevalence was 20.4, 46.3 and 73.4% respectively. The severity of ED also increased with age. So age is a very important risk factor of ED. There are many reasons that explain this situation : progressive decline in physiological function, increased prevalence of chronic diseases, psychological issues and partner issues. Other important risk factors are behavior and chronic disease. Smoking increases the prevalence of ED up to 40-45% and physical inactivity could cause ED 45-48%. Diabetes is the most common risk factor of ED because the prevalence of ED in diabetic patients is quite high up to 74% and diabetic patients are likely to suffer ED at a younger age, 10 to 15 years earlier than the general population. The age adjusted odds ratio in DM and other chronic diseases such as peripheral vascular disease, cardiac disease, hyperlipidemia and hypertension were 4.1, 2.6, 1.8, 1.7 and 1.6 respectively.

The consequences of undetected ED are various aspects. In the emotional aspect, ED can cause anger, depression and decreased self esteem. In the relationship aspect, ED can cause negative partner reaction, decreased partner sexual response and satisfaction. For sexual aspect, ED may progress and will be more severe, rapid ejaculation or loss of sexual desire may occur later to compensate ED and sexual relationships may be broken. The medical consequence may be in the opposite way. Men with ED were afraid of progression of ED by progressive chronic diseases they had. They try to control their diseases by increasing medication compliance and reduction of life style risk factors, such as smoking, eating, lack of exercise and excessive alcohol consumption.

Although men with ED feel unlucky but in some condition it turns to be lucky because some men present to the doctors only ED and refuse to have any chronic disease. However, in the process of assessment, the doctors found that they have high blood sugar, high blood pressure or coronary heart disease. In this situation, we consider that ED is the early sign of chronic and serious cardiovascular disease and have a good chance to treat it in the early stage of diseases.

Another issue about ED which was important to the physician is seeking treatment of the patients. In a Thai survey only 34% of patients want to consult the physician and only 1% really went to see a physician. So how to identify the patients and have a chance to take care of ED patients is a challenge.

How to diagnose ED in clinical practice?

Diagnosis of ED is so easy because the patients can do this by using definition of ED which is defined as persistent (lasting for at least 6 months) inability to attain or maintain an erection sufficient to permit satisfactory sexual performance. So the reason of the previous problem that most of the patients did not want to see the physician was not unknown diagnosis or unrecognized problem, but they feel uncomfortable to talk with the doctors and some do not realize the serious impact of ED. In these cases, the physician should try to identify patients at risk; most of them are the patients in a special clinic such as DM clinic, HT clinic, clinic for aging and heart clinic. They should find or create an opportunity to screen the ED problem. Before discussion they need permission to talk about sex first, then asking an open question to make a link with a diagnosed condition or current medication. By using statistics relevant to the patient, they should discuss with their patients about the chance to have ED which is quite common. If the patients says "yes", the

physician should respond with empathy, but if they say "no" the physician should leave the door open and tell the patients to feel free to discuss their concerns about sexual problems with them.

What should be evaluated?

Evaluation consists of history taking, routine physical examination and routine laboratory work up. In history taking, the physician should ask in detail about sexual problems in order to identify the real problem, the precipitating causes (organic or psychogenic), the impact of the problem for both patient and his partner and the goal of treatment of the couple. For male sexual dysfunction, there are three common problems: ED, premature ejaculation (PE) and loss of sexual desire. In some cases, there are two or three problems within themselves and the physician should identify which one is the main problem that should be treated first. The factors which differentiate psychogenic from organic cause are: younger age with acute onset, they still have normal nocturnal and early morning erections, they have had problems about their relationship, sexual development, anxiety or stress and they have normal erection in some specific situations such as masturbation or sex with other women. These mentioned factors dominate in psychogenic ED.

The most important physical examination is blood pressure because hypertension is a common risk factor and sometimes the patient has not been diagnosed before. If the medical history suggests about neurological deficit or abnormality of external genitalia the physician should examine the external genitalia and perform digital rectal examination. The most common risk factor which could be identified by a laboratory approach is DM. So, fasting blood sugar should be evaluated in every ED patient. Lipid profile is another test which should be performed. Testosterone level is usually normal in men with ED and normal sexual desire, so the physician should evaluate the testosterone level in cases of failure to respond to ED treatment or having multiple complaints which may relate to hormone deficiency, such as loss of libido, cognitive function impairment, loss of attention, fatigue, sleep disturbance or hot flush.

The last but not least issue that should be evaluated is the sexual relationship between the couple because if they have a poor relationship, a long period of abstinence or no sexual desire of the partner, it may be inappropriate to resume erection without first resuming a good sexual relationship. Communication between each other is the key factor for this.

The role of general practitioners in ED treatment

The principle of ED treatment is not only penile performance restoration or satisfaction of patients, but also more understanding about sexuality, a good sexual relationship between the couple, a better sex life and improved quality of life. The physician's advice is more important than erectogenic medicine. The objective of advice is modification of reversible risk factors and improvement of physical health, mental health, social health and spiritual health. Exercise is a very important positive factor which enhances both sexual function and physical health. Finally the physician should explain to the couple about good communication and intimacy to enhance a good sexual relationship; the reduction of performance anxiety by noncoital sexual intercourse; enhancing sexual stimulation especially in old age because sexual response in aging men are different from younger men such as arousal is slower, erection is less firm, and decreased tactile sensitivity needs more and prolonged direct stimulation, reduced drive to delay orgasm, less intense orgasm, ejaculation weaker and reduced quantity and also longer refractory period. The physician may use a "better sex cycle" model which consists of initiation, sexual act and reward to explain the correlation between these factors mentioned above and the way to develop a better sexual relationship.

Initiation is the first step and is very important. The response is dependent on sexual desire, fore play, intimacy and confidence. If sexual desire of the couple is in discrepancy, the sexual response may decrease. The intimacy or fore play should be the longest part of sex cycle. It may include kissing, touching, hugging or other noncoital relationship. They should do this with love and relaxation. At this stage, if men have anxiety, sympathetic activity will increase and may inhibit erection.

In the stage of the sexual act, the hardness of the erection is essential for men. There are many studies that have confirmed that sexual activities, sexual satisfaction, relationship, self esteem and confidence correspond to the hardness of erection.[2] For women, sexual response will be better if the sexual act occurs without any pain. The final step or reward happens after an ejaculation with or without the orgasm of the woman. In this period, if men can present women with love, respect and beautiful talk, this will be a perfect postlude and continue a better and better sex cycle.

In conclusion, the physician should treat ED as a couple. If the patient can bring his partner to see the physician and communicate with to each other, the chance of successful treatment will be high.

Treatment for ED

Before we start treatment, we should know about the mechanism of erection. It starts with erectogenic stimulus, neural initiation in the brain, transmission of neural impulse through the spinal cord, cellular activation in the smooth muscle of sinusoid, nitric oxide changing to cGMP causing vasodilatation and increase of blood flow to the corpus cavernosum. Erection is achieved until ejaculation happens or stimulation is diminished or cGMP is destroyed by phosphodiesterase (PDE) type 5 in smooth muscle cells. Therefore, the medicine which can enhance sexual stimulation like testosterone, or cause direct vasodilatation of the corpus cavernosum like PGE1 injection or inhibit the PDE5 enzyme to enhance cGMP activity can treat ED.

For an ideal therapy, the suggested treatment methods are simple, non-invasive, non-painful, with a high success rate and few minor side effects. At present, medical treatment with PDE-5 inhibitors is the most popular first line treatment.

PDE-5 inhibitors available in the market are Sildenafil, Vardenafil and Tadalafil. In general, they are almost the same in term of efficacy and side effect, but each drug has their own special interest such as Sildenafil was the first one which is most popular and most reliable, Vardenafil has more potency and can work after a heavy meal, Tadalafil has a long action and can work 1-2 days after administration. They are all contraindicated in patients who use nitrate and precaution should be taken in case of heart disease. The overall efficacy is around 70%. The adverse events are not more than 2%. There are headache 11%, flushing 7%, nasal congestion 3%, dyspepsia 3% and dizziness 2%.3 Patient education is very important to

enhance the efficacy of PDE-5 inhibitors, there are : when and how to take the drug which is normally 30-60 minutes before each sexual intercourse; sexual stimulation is essential because PDE-5 inhibitors work by enhancing the natural process of erection only; repeated treatment is necessary because sometimes the response cannot be expected for first attempt, the response may appear after 4-6 times of attempt; the variability of sexual response is considered normal, and regular follow up is another factor which is related to the outcome of the treatment.

Medical treatment is the first line treatment that every physician can prescribe to their patients. Before prescribing, the physician should evaluate the fitness for sex especially in aging men. If a man can walk 1 km. on the flat in 15 minutes at a moderate pace and then climb two flights of stairs (20 steps) in 10 seconds without undue chest discomfort or pain or undue breathlessness, then he is fit enough for sex. The starting dose for Sildenafil is 50 mg. If the response is not enough, the dose should be increased up to 100 mg. If the response is good but the adverse events occur, the physician should reduce the dose to 25 mg. Normally the physician should prescribe the highest dose, that is 100 mg. of Sildenafil, 20 mg of Vardenafil or 20 mg of Tadalafil for the patients who have no adverse events.

How to deal with medical treatment failure

Before consideration of medical failure and moving to another first line or second line treatment, the physician should try all PDE-5 inhibitors first because the response to a PDE-5 inhibitor is different in each patient.

The physician should reconfirm about when and how to take the drug and be awareabout fake drugs if the patient did not buy the drug in the hospital or clinic. Finally, an important factor is the readiness of the couple both physical and mental. If they have illness, fatigue, anxiety, stress or problems in their relationship, the response will be bad. So if they try to communicate with each other, understand each other, develop a good relationship with intimacy, love and good will, the treatment will be satisfactory and the overall sex life will be better.

Alternative treatments available

The alternative first line treatment is a vacuum pump. It is a plastic cylinder. After putting a penis inside the cylinder, the air is pumped the air out, which will cause blood to flow into the penis and make it bigger and longer. Before removing the cylinder, a rubber band is placed at the root of penis and the penis will be ready for intercourse. The vacuum pump is a cost effective instrument, but most patients do not like it because it is not convenient.

The second line treatment is a PGE-1 injection. It induces vasodilatation and erection directly. Because of the inconvenience and pain it is not commonly used in the present time.

The third line treatment is penile prosthesis. This surgical treatment is quite expensive, but is the most reliable and effective. It is suitable for young patients who failed medical and injection treatment. For this alternative treatment especially surgical treatment, a specialist urologist should be consulted.

Prevention of ED is possible?

ED is an example of holistic health problems; it is also an example of holistic health promotions. Physical health promotions, such as regular aerobic exercise, diet control, avoidance of fatty foods, too much sugar and alcohol and stop smoking can prevent chronic cardiovascular diseases which are essential risk factors of ED. Therefore, appropriate health promotion can stop progression of both ED and cardiovascular diseases. Mental health promotions, such as reducing stress and anxiety, living with a balanced life style and appropriate recreation can prevent psychogenic ED. Staying with love, communicating and understanding to each other and creating a good relationship can promote healthy and happy family. The last factor is an annual check-up and physician consultation when the problems have happened are key factors to prevent progression of the disease.

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