The two strongest instincts in nature are the preservation of "self" and the preservation of the "species". In animals, both are guaranteed fulfillment by the strong desires for food and sex. In humans, the ability to complete sexual intercourse has always been viewed as the sign of virility and strength. On the other hand, the loss of that ability may have a devastating ego-clastic effect. Across cultures, this perceived loss of virility is equated with loss of power, and even worse, loss of membership in the club of the dominant gender. Throughout history, medical books have been filled with claims for certain herbs or organic cures for impotence. Ibn Sina (Avicenna) listed potential treatments for impotence which consisted of over 24 types of seeds, twenty one types of roots, six types of nuts, and over ten types of animals or their organs. More recently, poachers have brought the rhinoceros to near extinction by killing them to obtain the horns which are ground into a powder and sold as an erection enhancer. The multiplicity of recommended treatments indicates the lack of a substantially effective one.

Since the word impotence is literally derived from loss of power, and since its meaning is very general and reinforces the depressive feelings in the affected men, the preferred, politically correct, and more precise term in current use is erectile dysfunction (ED).

Normal erectile function requires the presence of several factors including hormonal, psychological, neurological and vascular which must act in the proper sequence. Psychological and neural input induces parasympathetic impulses and inhibits sympathetic impulses to the pelvic structures. This results in dilatation of the arteries leading to corpus cavernosum and relaxation of the smooth muscles of its trabeculations. Tumescence ensues and erection is maintained by increased impedance in the cavernosal veins by pressure of the engorged sinuses.

Nitric oxide (NO) is released by endothelial cells and the postsynaptic parasympathetic fibers and is an important mediator in the process. Cyclic guanosine monophosphate (cGMP) is increased by enhanced activity of the enzyme guanylate cyclase through its stimulation by NO. Sildenafil inhibits the phosphodiesterase (PDE) that breaks down cGMP. The main PDE activity in corpus cavernosum was due to PDE5. Sildenafil is a selective inhibitor of PDE5. Being a phosphodiesterase inhibitor, original studies considered the use of Sildenafil as a vasodilator for the treatment of hypertension or angina. Researchers were surprised to find that it did not lower blood pressure, but what was noted as a side effect turned out to be a useful indication.

Until oral Sildenafil came on the scene, Alprostadil (prostaglandin-E1) was the standard treatment for ED. It was administered by direct intracavernosal injection, or as a urethral suppository. Both methods are inconvenient and may induce pain.

Sildenafil has so far been tested on a limited number of patients. Only a few full papers have been published. In a pilot clinical study of 12 patients with ED without an established organic cause, Sildenafil was shown to enhance the erectile response. It was also found to have suitable pharmacokinetic and pharmacodynamic properties (rapid absorption, relatively short half-life, no significant effect on heart rate and blood pressure) for an oral agent to be taken, as required, prior to sexual activity. In a 24-week dose-response study, Goldstein et al treated 532 men with Sildenafil or placebo. They found Sildenafil an effective and well tolerated treatment for ED. Side effects occurred in 6-18% of subjects and consisted mainly of headache, flushing and dyspepsia. A handful of abstracts have also been published. Sildenafil may be taken from 0.5 to 4 hours before sexual activity. The recommended dose is 50 mg. A smaller starting dose should be considered in patients over 65 years of age, in hepatic impairment, severe renal impairment and those concomitantly using inhibitors of cytochrome P450 (erythromycin, ketoconazole, itraconazole).
Moreover, organic nitrates such as nitroglycerin or isosorbide dinitrate interact with Sildenafil by potentiating the general vasodilatation and hypotensive effects. Sildenafil was approved for marketing in the United States late in March 1998. The popular media quickly spread the news, and hailed the drug as a panacea for all ED. The current pressure by the public of many countries to have the drug available may lead to over utilization without proper evaluation to find the source of ED. Even worse, men wishing to improve normal function may seek the drug. Many chronic illnesses are associated with ED. Hypogonadism, diabetes, hypertension, hyperlipidemia, atherosclerosis and psychiatric disorders are some of the causes that require serious attention and management rather than treatment of the symptom of ED. The final trials of all new drugs take place post marketing, and the future may reveal adverse effects not yet known. One might expect other body functions to be set off balance by the over abundance of cGMP. Color vision in the retina may be one target. In fact, photosensitivity and blue color tinges are listed as some adverse effects.

The prevalence of ED in older age makes this group the biggest potential users of Sildenafil. It should be remembered, however, that ED in old age might offer a biological advantage. It may be a protective mechanism for an elderly man not to get involved in a strenuous effort when angina and decreased cardiac reserve are prevalent, thereby protecting “the self”. Also, elderly men have higher chance of mutations in their sperms. ED may prevent fertilization of an ovum by a mutated sperm, thereby protecting “the species”. Are advances in therapeutics destined to work against nature? It is the responsibility of the prescribing physician to make sure that the drugs are given with the proper indication.

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M. Zuheir Al-Kawi, MD, FACP, FAAN
Chairman of the Pharmacy
and Therapeutics Committee
King Faisal Specialist Hospital & Research Center
Riyadh 11211
Kingdom of Saudi Arabia

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Comments from the Editors

Lessons to be learned from “Viagra Fever”

The role of Medicine has changed from that of enhancing cure and alleviating suffering to those of preventing and eradicating diseases. By the end of this century and for the next millennium improving the offsprings by gene therapy seems to be in reach. Other important role for medicine has been evolving through this century, by improving the quality of life, even in healthy individuals this has been evident in plastic surgery, hair transplants and others. Recently drug companies are investing on promoting different kinds of drugs aimed at improving the quality of life for healthy and ill individuals. Viagra (Sildenafil) is one of those drugs.

What is our approach as physicians and scientists to these Drugs, especially the Viagra which caused “media madness”.

1. Due to the media and global communication worldwide, tremendous pressure has been put on the medical community to make the drug “Viagra” available in each community. The response of the medical community should cope with this pressure and deals with it with appropriate scientific approach. Doctors should not be satisfied by only saying “wait
and see”, “we don’t have enough evidence”, “the drug is dangerous and should not be used”. Concerned doctors should outline the pros and cons of the drug, and lobby for making the drug available for all those who will benefit from it.

2. Medical Journals should give these facts about the drug not only to physicians but also to the public regarding its safety and efficacy. This should not be left to the tabloid newspapers, which contain fiction rather than facts.

3. The licencing authorities should respond to patient pressure by expediting the evaluation of the drugs, its safety and guidelines for its use rather than simply banning the drug and conflicting penalties on those who are selling it illegally. This is the only way that the drug will be used safely in those who will benefit from it. As a result of this there will be no need to smuggle the drug or sell it on the “black market”. This is what the European Union Licency authority is doing in response to the “Viagra Madness” in their countries.

4. The argument that licencing expensive drugs like “Viagra” will only benefit those who can afford it “rich people” but not those who need it but cannot afford it, is not a valid argument and the role of each society is to support those who cannot afford it by establishing “patient support groups” and other social benefits.

Saudi Medical Journal invited reputable physicians with different specialties to write editorials and letters about the topic. Also we invite all our readers to contribute in this open dialogue.