Embargo Date: May 26, 2005, 5:00 a.m. EST
The American Journal of Medicine (2005) 118, 569–570

THE AMERICAN JOURNAL *of* MEDICINE®

ELSEVIER

EDITORIAL

Viagra: The risks of recreational use

Viagra (Sildenafil) has become one of the most commonly prescribed and abused pharmaceuticals available today. More the 600 000 physicians worldwide have prescribed this agent, and more than 16 million patients have used it.[1] The media talk about the widespread recreational use of Viagra. According to the manufacturer's Web site for Viagra, the drug induces penile erections in 82% of users with erectile dysfunction versus 24% in placebo patients.[1] It is common knowledge "on the street" that Sildenafil increases penile size and possibly extends the time to ejaculation in individuals without erectile dysfunction thereby making it a very popular agent for abuse. I personally receive multiple e-mail transmissions each day offering to sell me Viagra cheaply and without a prescription. It seems reasonable to me that recreational use of Sildenafil may even exceed medical use.

After ingestion, this agent induces peripheral vasodilatation with particular emphasis on erectile tissue in the penis. Viagra has become one of the most mentioned pharmacological agents in the press and on television. Numerous jokes are told that involve Viagra. Less well-known and less often the butt of humor are the other two selective type 5 phosphodiesterase inhibitors (PDE5) available on the market, Tadalafil (Cialis) and Vardenafil (Levitra). Soon after its approval by the FDA, a strict warning was attached to Sildenafil and the other PDE5 inhibitors: the drugs should not be used in conjunction with nitrate preparations because of the resultant marked lowering of blood pressure. Initially, there was some anxiety about using these agents in patients with coronary heart disease or heart failure; however, controlled observations soon alleviated these anxieties.[2–6] The PDE5 inhibitors were eventually deemed safe for all but the most severely impaired heart patients. Only patients with active myocardial ischemia, congestive heart failure with low blood volume or low blood pressure, and hypertensive patients on multidrug antihypertensive regimens should avoid Sildenafil. It also is advised that patients receiving drugs that interfere with with Sildenafil's drug metabolism should exercise caution in using Sildenafil. These include erythromycin, diflucan, amiodarone, diltiazem, losartan, nefidipine, all statin drugs, alprazolam, Zoloft, and acetaminophen. Since sexual activity is associated with significant physical exertion, patients with marked exercise intolerance should also exercise caution in the use of this drug.

With these reasonable warnings, millions and millions of patients have taken Sildenafil and its relatives almost invariably without major incident. However, in this issue of the AJM, Swearingen and Klausner[7] review reports of Sildenafil abuse that should raise considerable anxiety among physicians and patients. In this report, the author extensively reviewed the medical literature for carefully done reports that compared a variety of variables in men who have sex with men who used Sildenafil compared with similar patients who did not use Sildenafil. Among the patients who used Sildenafil, there was a worrisome 2- to 5.7-fold increased practice of unsafe sex compared with those patients who did not use Sildenafil. Additionally, the rate of sexually transmitted diseases (STD) was nearly 2-fold greater in the individuals who used Sildenafil. When I first read this manuscript, I felt strongly that internists, a group that commonly writes prescriptions for Sildenafil in male patients, needed to hear this news so that they might give a warning to their patients who use Sildenafil. After peer review and manuscript revision, I felt strongly that this article needed extra attention and that is why I chose to feature it in this month's editorial.

Unfortunately, this manuscript raises a number of troublesome questions in my mind that led me to hope for more submissions on this topic. For example, is the risk of STD and unsafe sex also increased in male *heterosexual* patients who use Sildenafil? A recent report in the *Lancet* further raised my public health anxieties[8]: A group of authors from the Aaron Diamond AIDS Research Center at the Rockefeller University in New York City reported on a patient that they recently evaluated. This individual had a new strain of HIV virus that was considerably more virulent and progressed more rapidly to AIDS than any HIV virus previously found. The male patient reported being sexually active with many male partners over the years–*often in conjunction with methamphetamine abuse.* Thus, this patient had been abusing both Sildenafil and methamphetamine. The question that immediately leaped to mind was: "What effect did the

0002-9343/$ -see front matter
doi:10.1016/j.amjmed.2005.03.034

combined abuse of these drugs have on the patient?" Could this have resulted in the development of the highly virulent HIV mutant? Does this combination drug abuse increase the likelihood of STD transmission and/or the propensity for unsafe sex?

Clearly, this could develop into a major public health problem for the United States. What are the health implications when Sildenafil and illegal drugs are used together recreationally? The answers to these questions can only be obtained by careful epidemiological and experimental studies. I hope that the article by Swearingen and Klausner in this issue of the AJM combined with the case report cited above will lead investigators in this field to explore the multiple implications and questions raised in this editorial.[8]

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