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Tadalafil

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Community-based epidemiological studies suggest that sexual dysfunction, particularly erectile dysfunction, is a common disorder in men and is associated with reduced quality of life. Tadalafil is a potent, competitive phosphodiesterase type 5 isoenzyme (PDE5) inhibitor. Following activation of the nitric oxide/cyclic guanosine monophosphate (cGMP) pathway by sexual arousal, the inhibition of PDE5 isoenzyme by tadalafil results in increased corporal levels of cGMP and an augmented penile erection. Tadalafil appears effective in restoring erectile function and improving intercourse success rates in a wide range of patients including those with hypertension, diabetes mellitus, spinal cord injury, other concomitant medical conditions and in those taking a wide variety of concomitant medications.

Although no direct comparative studies have been conducted between tadalafil, sildenafil and other PDE5 inhibitors currently under investigation, tadalafil may have significant advantages in clinical practice due to its different pharmacokinetic profile. Tadalafil is rapidly absorbed with 32% and 52% of patients achieving erections at 16 and 30 minutes, respectively. The half-life of tadalafil is 17.5 hours, which is significantly longer than other PDE5 inhibitors. Laboratory and 'at home' studies have demonstrated a sustained period of responsiveness lasting for up to 36 hours. The bioavailability of tadalafil is not affected by food or alcohol. The presence of a broad therapeutic window of 36 hours and the lack of any affect of food or alcohol on the rate of absorption or the systemic exposure to tadalafil, potentially offers patients a more acceptable 'real life' treatment for erectile dysfunction with an increased opportunity to engage in spontaneous and unplanned sexual activity.

The reported adverse effects of tadalafil are typical of PDE5 inhibitors, and include headache, muscle aches, facial flushing and dyspepsia. They are described as mild to moderate by the vast majority of men and appear to attenuate over the first 3 months of treatment. Tadalafil has no clinically significant effect on either standing or supine systolic or diastolic blood pressure and has an excellent cardiovascular safety profile. Like all PDE5 inhibitors, it is contraindicated in patients taking short- or long-acting nitrates due to its augmentation of the hypotensive effect of those drugs.

Tadalafil represents a new addition to the therapeutic armamentarium for the treatment of men with erectile dysfunction. It offers these men an effective and well tolerated treatment, with the additional advantages of improved sexual spontaneity in a real-life setting during a 36-hour period of responsiveness. ▲