Raging Hormones

Testosterone shots have shut off Stephen's home-grown stock

April 1, 1999 By Lark Lands, PhD

This month, Jon Kaiser, MD, a clinician with a large HIV practice in San Francisco and the author of the new book Healing HIV: How to Rebuild Your Immune System *(Health First Press, Mill Valley, CA), analyzes the testosterone results of* POZ *Contributing Editor Stephen Gendin.*

As part of his regular lab workups, Stephen obtains monthly testosterone levels. In recent months, those levels have oscillated wildly, from microscopic levels in October to his most recent, highly elevated counts—a **TOTAL TESTOSTERONE** of 1,435 ng/dl (nanograms per decaliter) and a **FREE TESTOSTERONE** (the amount available for actual use) of 612 ng/dl. The readings only make sense in the context of his treatment history. Stephen has been doing high-dose testosterone therapy since early 1995. His reading at that time was on the very low end of the lab's "normal" range (194 to 833)—well below what I consider the optimal range of 500 to 1,000 for total testosterone and 100 to 200 for free testosterone. (Note: Women also need to maintain optimal levels; their **TOTAL TESTOSTERONE** should be 50 to 100, and **FREE TESTOSTERONE** 1.0 to 2.0.)

Because researchers had found that HIVers often do better in several important ways—restoring sex drive and maintaining muscle tissue while eliminating depression and fatigue—when replacement therapy puts them into the optimal range, Stephen chose to get regular testosterone injections. And with weekly 200-milligram (mg) dosing, he has mostly maintained the benefits he sought, but has become completely dependent on the shots; any break causes his testosterone level to plummet immediately.

When his dosing was discontinued for the month of September (due to an HMO decision), his sex drive vanished; he didn't have an orgasm for three weeks, and even attaining an erection became extremely difficult. This indicates that his body's own production of testosterone was virtually nil. That's common when long-term use of high-dose injections shuts down the testicles' production of the hormone.

Stephen's testosterone levels zoomed again after resuming weekly shots, but the body functions much better with a steady daily supply of testosterone. That, in turn, is the optimal way to maintain all-important muscle mass, which generates most of the body's energy, and thus not only helps you feel better, but also generates plentiful energy for the immune system. And supporting

muscle mass also helps prevent a downhill slide into wasting, something that still kills people—even in the HAART era. In my experience, keeping muscle mass at an optimal level (through various means, including testosterone replacement when appropriate) helps PWAs with advanced disease to stay healthy, stable and protected against opportunistic infections—even when, as with Stephen currently, they are unable to be on antiretroviral therapy.

So if I were designing a program for Stephen, my goals would be to stimulate his body to again produce testosterone and to maintain a steady state in his blood—rather than the roller-coaster effect created by injections. To those ends, I would strongly recommend the following:

Switch to daily transdermal (through the skin) testosterone therapy, either with a patch or a gel. The new Testoderm TTS patch can be applied anywhere on the upper torso, is extremely thin and seldom creates the skin irritation seen with earlier patches. To obtain the dosing that Stephen appears to need—200 mg weekly—I would recommend that he use two patches. (Some reimbursers don't cover patches because they're more costly than injections, but the shots' lower price is counterbalanced by the costs of increased office visits.) By far the least expensive, and yet just as effective, alternative would be a testosterone gel. This could be prepared by a compounding pharmacist in a concentration that would provide the same dose when applied to the skin twice daily.

In my experience, when patients use either patch or gel, there are almost never problems with long-term use. This means that the cycling advocated by some proponents of injectable anabolic steroids (to avoid shutting down the body's testosterone production) is *not* necessary. That's a big plus, since going off daily testosterone can significantly degrade one's quality of life. (Note that oral testosterone is not recommended because it can cause serious liver toxicity.)

Do intramuscular injections of human chorionic gonadotropin (HCG, which boosts natural testosterone production), in doses of 3,000 units every other day for one week out of each month for perhaps three months.

Monitor testosterone levels every three to four weeks during this period to ensure that Stephen stays at optimal levels. If he doesn't, I would consider an occasional injection of 100 to 200 mg of testosterone, but I would use as little as possible to avoid sabotaging the return of his natural hormone production.

From this point forward, I would monitor Stephen's total testosterone level quarterly—as I do with all my patients beginning at their initial HIV diagnosis. Measuring total testosterone is far cheaper than measuring free testosterone and is usually sufficient to diagnose deficiency; however, if the total is high but there are symptoms suggestive of deficiency, I would then check the free testosterone.

In addition, I would regularly measure his DHEA, another key anabolic hormone that also has positive effects on sex drive, energy level, mood and muscle mass. If levels are suboptimal—as is the case for a majority of PWAs in my experience—I would recommend daily supplementation.

I believe that using test results to guide appropriate replacement therapy of both these hormones is one of the most important things Stephen can do to protect his body, maintain his quality of life, support his immune function and keep him healthy until the next crop of drugs that might help him become available.

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