Erectile Dysfunction & Andropause

Siblings or Distant Relatives?

Michael Greenspan, MD, FRCSC

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Bill's case

- Bill, 54, is married and presents with a six-month history of poor-quality erections.
- Sex drive is normal.
- Nocturnal and daytime erections are still present.
- Past medical history is negligable.
- The patient has seen all the ads for oral erectile dysfunction (ED) therapy on television and wants treatment, if possible.

What investigations should be performed at this time?

- All patients presenting with ED should undergo a full workup for basic vascular comorbidities that are associated with ED. These include:
  - HbA1c,
  - fasting blood sugar,
  - cholesterol,
  - triglycerides and
  - blood pressure measurement.
- Bill has normal blood work and an unremarkable physical exam, including normal blood pressure.
- Bill's wife is in the waiting room and when called in, it is obvious a relationship problem is not an issue.

What is the cause for Bill's ED and is treatment with an oral agent indicated at this time?

Go to page 76 for the answer.

Erectile dysfunction (ED) & andropause are both consequences of aging. In contrast to ED, the very existence of andropause is questioned by many. ED and andropause may be similar in their presentation in some patients, but accurate history-taking can often differentiate the two.

ED is characterized by:

- predominantly erectile problems,
- variable sexual desire,
- normal energy and
- normal hormone levels (usually).

Symptoms of andropause are:

- decreased sexual desire,
- low energy,
- hormone levels usually low,
- erections usually fine and
- diminished nocturnal erections.

More on Bill

Many men with no identifiable comorbidities still have organic ED. There are now strong implications that ED may be a precursor to future vascular disease.

Bill should be offered treatment with an oral phosphodiesterase-5 (PDE-5) inhibitor, but which one? Table 1 lists factors to consider when selecting an oral ED agent.

There is no way to determine which of sildenafil, tadalafil or vardenafil will be preferred by each individual patient (Table 2). Most patients try two or even all three agents and then decide.

It is extremely important all patients prescribed an oral PDE-5 agent be scheduled for a followup appointment to discuss success of treatment and other options, if necessary.

Bill returns after having tried all three oral ED agents. He had a partial response to all three, but still cannot complete intercourse on most occasions.

What should be the next recommendation?

1. Intracorporeal injection therapy could be discussed.
2. Order a hormonal workup. Testosterone has been shown to enhance the effect of PDE-5 inhibitors in many hypogonadal men. Commence testosterone and then wait four to six weeks before rechallenging with ED medication.

Table 1

Considerations for selecting oral ED agent

- Onset of action
- Rigidity
- Orgasmic intensity
- Side-effects
- Food interaction
- Duration of action
- Cost

Table 2

Pharmacokinetic summary of three oral ED drugs

	Sildenafil	Tadalafil	Vardenafil
Half-life	4 hours	17.5 hours	4-5 hours
Maximum threshold	1 hour	2 hours	1 hour
Bioavailability	41%	Unknown	15%
Food	High-fat meal delays onset by 60 minutes	No effect	No effect, but high-fat meal delays onset by 60 minutes
Alcohol	No effect	No effect	No effect
Elimination	Feces (80%), urine (13%)	Feces (61%), urine (36%	Feces (95%), urine (2)
Metabolism	CYP3A4	CYP3A4	CYP3A4

Cont'd on page 78 →

Mike's case

- Mike, 61, complains he is unable to carry on his exercise program due to generalized fatigue.
- He finds he is more irritable, does not sleep well and has decreased desire for sex, even though his erections are normal whenever he does perform.
- He is happy with his job and has been in a stable, harmonious marriage for 34 years.

You are considering andropause as a potential cause of Mike's symptoms. What tests should be ordered?

Tests should include:

- Total testosterone,
- bioavailable testosterone,
- follicle-stimulating hormone,
- luteinizing hormone,
- prolactin,
- thyroid-stimulating hormone,
- complete blood count (CBC) and
- prostate-specific antigen (PSA).

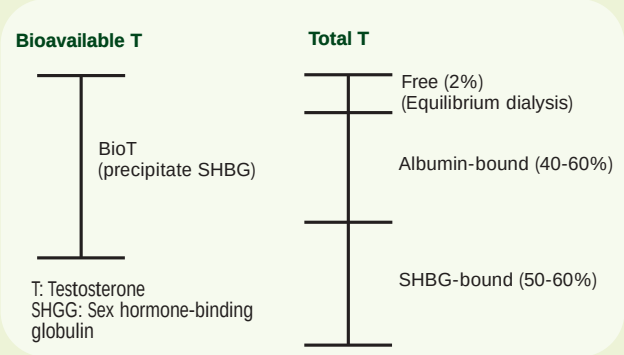

Figure 1. Bioavailable testosterone versus total testosterone.

Bioavailable testosterone will, theoretically, identify 25% more andropausal men than total testosterone alone (Figure 1).

Sex hormone-binding globulin (SHBG) increases with age. Testosterone bound to SHBG is tightly bound and unavailable at end organs.

Mike's total testosterone = 17.6 (n=8-28)/ bioavailable testosterone = 3.4 (n=3-12).

All other blood work is normal (including PSA).

A decision is then made to treat with testosterone.

What are Mike's treatment options? (Table 3)

The choice of therapy is, essentially, that of the patient. Insurance coverage, lifestyle of patient, *etc.* will influence this decision.

All patients placed on testosterone must be monitored with prostate-specific antigen and complete blood count every three months for the first year and every six to 12 months thereafter.

There is no evidence that testosterone therapy causes prostate cancer. Dx

Table 3

Testosterone replacement therapy

Therapeutic choices include:

1. Intramuscular preparations (Delatestryl®, Depo-Testesterone Cypionate)
2. Oral capsule (Andriol®)
3. Transdermal patch (Androderm™)
4. Transdermal gel (AndroGel®)

Dr. Greenspan is an assistant professor, department of surgery, McMaster University, and head of urology, Hamilton General Division, Hamilton Health Sciences Centre, Hamilton, Ontario.