DECISIONS

Erectile dysfunction

Alan Katz MBChB MSc, Anne Katz RN PhD

Previously published at www.cmaj.ca

Mr. B is 54 years old and has been seen in your clinic for the past 10 years for routine care. At his most recent visit, he mentions that he has been having difficulty achieving an erection. He is otherwise healthy, does not smoke and drinks socially once or twice a week at most. The problem began recently and causes him significant distress.

Is there evidence of cardiovascular disease?

Although erectile dysfunction can be primarily psychogenic in origin, recent evidence suggests that a man with erectile dysfunction has cardiovacular disease, even without cardiac symptoms, unless proven otherwise.[1] Given that normal erectile functioning is chiefly a vascular phenomenon, alterations to this may be an early warning sign of vascular damage.[2] The evidence linking erectile dysfunction with a subsequent cardiovascular event is strong, with a hazard ratio of 1.25 (95% confidence interval; 1.02–1.53; $p < 0.001$).[3] Therefore, the patient should be assessed for the presence of cardiovascular risk factors (e.g., smoking, diabetes, obesity) and for evidence of cardiovascular disease.

Are there any potentially reversible causes?

In addition to cardiovascular disease, other key causes of erectile dysfunction that should be excluded are depression, alcohol and drug use, and effects of medications. Situational factors may also play a contributing role.[4]

An accurate clinical history is the most important part of an evaluation for erectile dysfunction. Questionnaires, such as the International Index of Erectile Function or its five-item Sexual Health Inventory for Men, may be used[4] in conjunction with sensitive enquiry into the problem. A score of 21 or less on the Sexual Health Inventory for Men is indicative of erectile dysfunction, with lower scores indicating greater severity and the need for a cardiac workup.

Questions should examine the onset and severity of the erectile difficulty, the significance of the difficulty to the man and his partner, and specific situations in which the problem has occurred. The clinician should also ask about the patient's level of sexual desire, levels of stress at home and work, and notable issues related to his relationship with his sexual partner. Obtaining a history of medication, alcohol and drug use and of any pelvic surgery or radiation is important.

Guidelines from the Canadian and American urological associations recommend that the clinician look for evidence of cardiovascular, genitourinary or neurologic abnormalities that may contribute to erectile dysfunction.[4,5] A focused physical examination for erectile dysfunction may include assessment of the abdomen, penis, testes, blood pressure and peripheral pulses.[4,5]

Are any tests required?

Fasting blood glucose levels and lipids should be measured.[1] Measurement of testosterone is controversial and not indicated unless a loss of sexual desire has been identified.[6]

Should medication be prescribed?

A frank discussion with the patient should seek to identify any psychological components that suggest he may benefit from a referral to an expert in sexuality counselling.

Recent guidelines from the American College of Physicians recommend that clinicians initiate therapy with a phosphodiesterase type 5 inhibitor in men who seek treatment for erectile dysfunction and do not have a contraindication to its use.[7]

Treatment is usually undertaken in a step-wise progression. Any one of the three phosphodiesterase type 5 inhibitors currently available may prove helpful. Sildenafil, tadalafil and vardenafil are well tolerated, and the only contraindication is the use of nitrates. Referral to an urologist is not required before initiation of treatment.

The dosage range for sildenafil is 25–100 mg. For both tadalafil and vardenafil, the dosage is either 10 mg or 20 mg. There may be an important psychological advantage to starting with the highest dose and achieving erection. Starting with the lowest dose and titrating up may result in the patient giving up because the drug "does not work." All three phosphodiesterase type 5 inhibitors should be tried on at least eight separate occasions before treatment failure is assumed; some men may respond to one phosphodiesterase type 5 inhibitor and not the other. Common adverse effects include headache, nasal congestion, facial flushing, dyspepsia, and less commonly, muscular aches and pains, particularly back or limb pain.[8] The patient should be informed about possible adverse effects. Nonarteritic anterior ischemic optic neuropa-

From the departments of Family Medicine and Community Health Sciences (Alan Katz), University of Manitoba; and the Manitoba Prostate Centre (Anne Katz), CancerCare Manitoba, Winnipeg, Man.

CMAJ 2010. DOI:10.1503/cmaj.090422

DOI:10.1503/cmaj.090422

thy has been reported in some patients taking phosphodiesterase type 5 inhibitors.[9]

As there is often a psychogenic component once erectile dysfunction has been experienced, the patient should be instructed on how to take the medication correctly. Many men do not wait the required period (about one hour for sildenafil and tadalafil and 30 minutes for vardenafil) after taking the medication, and more importantly, do not use genital stimulation to achieve an erection. A waiting period and genital stimulation are critical because the medication does not cause an erection, but rather interferes with relaxation of smooth muscle in the corpora cavernosa, trapping blood in the spongy tissue.

What if the medications don't work?

If none of the above medications is helpful, the usual next step is a vacuum device, followed by an intraurethral suppository (i.e., alprostadil) or penile self-injection. Penile implants are usually the intervention of last resort.

This article has been peer reviewed.

Competing interests: None declared.

REFERENCES

1. Jackson G, Rosen R, Kloner R, et al. Second Princeton Consensus on sexual dysfunction and cardiac risk: new guidelines for sexual medicine. *J Sex Med* 2006;3:28-36.
2. Schwarz ER, Rodriguez J. Sex and the heart. *Int J Impot Res* 2005;17:(Suppl 1):S4-6.
3. Thompson IM, Tangen CM, Goodman PJ, et al. Erectile dysfunction and subsequent cardiovascular disease. *JAMA* 2005;294:2996-3002.
4. Canadian Urological Association. ED Guidelines. Montréal (QC): The Association; 2006. Available: www.cua.org/guidelines/ed_2006_en.asp (accessed 2009 Dec. 9).
5. American Urological Association. Diagnosis and treatment recommendations. In: *Guideline on the management of erectile dysfunction*. Montréal (QC): The Association; 2005. Available: www.auanet.org/content/guidelines-and-quality-care/clinical-guidelines/main-reports/edmgmt/chapter1.pdf (accessed 2009 Mar. 3).
6. Brand TC, Canby-Hagino E, Thompson IM. Testosterone replacement therapy and prostate cancer: a word of caution. *Curr Urol Rep* 2007;8:185-9.
7. Qaseem A, Snow V, Denberg TD, et al.; Clinical Efficacy Assessment Subcommittee of the American College of Physicians. Hormonal testing and pharmacologic treatment of erectile dysfunction: a clinical practice guideline from the American College of Physicians. *Ann Intern Med* 2009;151:639-49
8. Carson CC, Lue TF. Phosphodiesterase type 5 inhibitors for erectile dysfunction. *BJU Int* 2005;96:257-80.
9. Wooltorton E. Visual loss with erectile dysfunction medications. *CMAJ* 2006;175:355.

Resource

The Sexual Health Inventory for Men (SHIM) is available online at www.aboutmen.ca/asset/upload/tiny_mce/page/link/shim.pdf

Decisions is a new series that focuses on practical evidence-based approaches to common presentations in primary care. The articles address key decisions that a clinician may encounter during initial assessment. The information presented can usually be covered in a typical primary care appointment. Articles should be no longer than 650 words, should include one box, figure or table and should begin with a very brief description (75 words or less) of the clinical situation. The decisions addressed should be presented in the form of qustions. A box providing helpful resources for the patient or physician is encouraged.