An ED patient with low testosterone

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In this article, we consider the case of a patient referred to the erectile dysfunction (ED) clinic for second-line treatment. The patient had many of the signs and symptoms of hypogonadism, but even when this was revealed his treatment pathway was not straightforward.

FIRST CLINIC VISIT
Asif, as described in the case notes, has marked visceral adiposity, waist circumference 112cm, weight 110kg and BMI 33. He has lost all early morning erections and has reduced desire. His Sexual Health Inventory for Men (SHIM) score is 6 and Ageing Males’ Symptoms (AMS) score 62. On examination, blood pressure was 120/80mmHg, with atrophic testes. He remarked that his penis was small, but on examination, you explain that it was mostly immersed in pudendal fat.

His biochemistry results were: HbA1c 6.4%, total cholesterol 4.2mmol/L, triglycerides 2.8mmol/L, morning total testosterone 8.0nmol/L, sex hormone binding globulin (SHBG) 18nmol/L, free testosterone 0.18nmol/L, luteinising hormone (LH) 2 IU/L, PSA 0.487, haemoglobin (Hb) 129g/L and haematocrit 0.410 L/L.

You explain that hypogonadism is frequently seen in obese men with prediabetes and that chronic opiate analgesics also contribute to low testosterone. His mild anaemia and low red cell count are likely to be associated with low testosterone and contribute to his excessive tiredness.

TREATMENT OPTIONS
The treatment options for Asif are:

• Try a second or third phosphodiesterase 5 inhibitor (PDE5I) in sequence. This would have a low chance of success. The European Society for Sexual Medicine (ESSM) syllabus suggests that this is effective in less than 8% of men. He suffers from low libido and is already dispirited. At best, the response rate to PDE5Is in type 2 diabetes is around 50% of attempts; men with untreated, low testosterone were excluded from trials, as were men with poorly controlled diabetes. At around £7 per tablet (£364 per year), this is an expensive option for Asif.

• On the basis of minimal response to sildenafil, proceed to demonstration of intracavernosal injection with alprostadil. This would be challenging for him to perform in view of his...
abdominal girth and 'buried penis'. MUSE self-administration would also be challenging, as would a vacuum device. The private cost to him for alprostadil injection or MUSE would be £20 per dose (£1040 per year).

- Treat him with testosterone supplementation in view of his low sexual desire and multiple symptoms, and then re-introduce sildenafil (£416 per year to NHS and no cost for Asif).

After discussion, Asif decides on testosterone therapy. In view of his low motivation, you opt for long-acting testosterone undecanoate (Nebido) 1000mg with an immediate first dose, a second loading dose six weeks later and subsequent doses at 12-week intervals.

**FOLLOW-UP**

Asif returns three months later and is feeling much better. He is less tired and more motivated to initiate sex. He has had partial success with sildenafil 100mg but could not maintain his erection. Based on ESSM recommendations, you advise sildenafil 100mg every day for two months. Six months later, Asif is re-referred to the ED clinic as sildenafil is no longer effective. His most recent HbA1c was 6.6%, so you explain that the only good news is that any future ED therapy will be provided at NHS expense as he now officially has type 2 diabetes.

**WHAT DOES THE EVIDENCE TELL US?**

Testosterone supplementation to the normal range improves sexual desire and erectile function in men with metabolic syndrome and diabetes, especially those with baseline total testosterone levels below 8nmol/L. Non-responders to PDE5Is are frequently salvaged with testosterone if baseline levels are below 10nmol/L. Frequent or daily dosing with a PDE5I can salvage up to 50% of patients who fail to respond to on-demand therapy.

**CONCLUSION**

Low testosterone levels are often found in obese men with metabolic syndrome and in over 40% of men with diabetes, and are frequently associated with sexual dysfunction and poor response to PDE5Is. Only by measuring testosterone will the physician be in a position to prescribe optimal therapy. Failure to check testosterone levels can result in wasted time and money through inappropriate referrals and medications that are unlikely to work. Generic sildenafil, even in conjunction with testosterone supplementation, is often less expensive than second-line options and is more acceptable to the patient. Endocrinologists who do not routinely treat sexual dysfunction often fail to appreciate the importance of these issues to patients. Specialists and GPs need to work closer together to ensure the very best outcomes for patients who are often in some distress.

**Declaration of interests**

Geoffrey Hackett has been an occasional speaker for Lilly, Besins and Bayer.

**REFERENCES**