Lifestyle modification in the management of erectile dysfunction

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Modification of lifestyle risk factors is the initial step in the management of erectile dysfunction, before the introduction of pharmacological agents. The authors discuss the evidence supporting this approach.

The introduction of phosphodiesterase-5 inhibitors (PDE5i) revolutionised the management of erectile dysfunction (ED). The prescription of this drug on the NHS remains controversial but essentially it may be prescribed under schedule II for men with diabetes, prostate cancer, previous radical pelvic surgery, a variety of neurological disorders and where ED causes severe distress.

However, there are many lifestyle risk factors that should be modified before the implementation of pharmacological agents. Erectile dysfunction should be considered an early manifestation of vascular disease in many men. It should be managed in a similar mode to other cardiovascular and peripheral vascular diseases, where adjustments of risk factors are well-recognised initial steps (Figure 1).

**IMPACT OF ERECTILE DYSFUNCTION**

Erectile dysfunction is a significant and common health condition estimated to affect 52 per cent of men aged 40–70 years. The incidence of ED increases with each decade of life, diabetes mellitus, ischaemic heart disease and hypertension. It is also significantly associated with obesity, lack of exercise and smoking.

The condition has a significant and profound negative effect on many domains of a man’s psychological health, including depression, self-esteem and social functioning. It results in substantial damage to sense of masculinity and emotional intimacy in relationships, as well as daily interactions with women and other potential partners. Men with ED are 2.09 times more likely to experience depression independent of confounding factors.

In an international survey of attitudes of men with ED, 54.5 per cent (64 per cent in the UK) reported that erection problems were a source of great sadness, 49.3 per cent significantly associated with obesity, lack of exercise and smoking.

**Figure 1. Obesity is an independent risk factor for erectile dysfunction, but sexual function may be regained with reduced calorie intake and increased exercise. (Michael Donne/Science Photo Library)**

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SEXUAL FUNCTION

MANAGEMENT OF ERECTILE DYSFUNCTION

The successful treatment of ED improves and reverses many of these features.6,11,12

Obesity and exercise

Obesity is an independent risk factor for ED, and it is estimated that a body mass index (BMI) above 28.7 is associated with a 30 per cent higher risk of ED than a BMI of 25 or less.2 The prevalence of ED may be up to 79 per cent in overweight or obese men (see Figure 1).2 It has been suggested that obesity is associated with raised cytokines and C-reactive protein, which may be associated with endothelial dysfunction.2

A randomised controlled trial by Esposito et al. found a significant association between IIEF scores and indications of endothelial dysfunction (raised body fat, C-reactive protein and IL-8).2 Approximately one-third of men with ED regained sexual function after two years of adopting healthy behaviours (reduced calorie intake and increased exercise).2 This effect was statistically significant on multivariate analysis.2

The positive effects of exercise were further emphasised in a study by Maio et al. where men with ED were randomised to either PDE5i alone with simple advice to exercise (control group) or PDE5i and regular exercise for three hours a week or more, as well as detailed information on the importance of exercise (intervention group).2 Although both groups had an improvement in their IIEF scores, it was significantly higher in the intervention group (61.7 versus 56.2; p=0.007).2 In addition, the proportion with normal erectile function was significantly higher in the intervention group (77.8 versus 39.3 per cent; p=0.004).3

This suggests that the addition of exercise may improve the results obtained from PDE5i and that simple advice to exercise may not be sufficient. This is further supported by the finding in the Massachusetts Male Aging Study that exercise before middle age is associated with a 70 per cent risk reduction of ED when compared with sedentary men.1 The incidence of ED in men who exercised was also lower over eight years of follow-up.

Other risk factors

The management of associated comorbidities may have an important additional role in the management of ED. There is some evidence to suggest that tighter glycaemic and blood pressure control may result in a reduction in ED prevalence.18 However, the more traditional drugs such as diuretics and beta-blockers often affect erectile function adversely.18 It may be worthwhile replacing them with angiotensin receptor blockers where possible.

Lastly, there is some evidence that regular intercourse may be protective against developing ED.17 A study by Koskimaki et al. showed that sexual intercourse at least once weekly protects against the development of ED.17 They suggest that sexual intercourse may preserve vascular function by maintaining cavernosal reactivity and preventing cavernosal fibrosis.17

Pelvic floor exercises

Urologists and GPs will be familiar with the utilisation of pelvic floor exercises for the management of stress incontinence and following pelvic surgery, vaginal deliveries and obesity. The NICE guidelines include pelvic floor exercises in the initial management of stress incontinence in women.16 However, there is some evidence to suggest they may also improve ED in men.19-21

In a randomised controlled trial by Dorey et al., 55 men with ED for more than six months were randomised to either intensive physiotherapy including lifestyle changes or general advice for six months.19 The control group was offered intervention after three months. The results were encouraging, with a significant improvement in IIEF scores at three months in the intervention groups versus control (17.2 versus 8.4; p=0.004). This improvement was maintained over six months and similar results were obtained in the control group who moved to the intervention arm. However, the drop-out rate of 40 per cent was disappointing, although 59 per cent of these were men with improved or normal erections. The improvement in IIEF score of 8 in the treatment arm is similar to that obtained in some PDE5i studies. These results have been replicated in other studies with complete response or cure rates of 36–55 per cent and improvements of 21–33 per cent.19-21

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CONCLUSION
There is now strong evidence of the association between ED and future cardiovascular events. The presence of ED should trigger our thoughts on modifiable vascular risk factors as this may improve the man's overall general health, especially his cardiovascular health, as well as treating his ED. Although this simple approach may be sufficient in a modest proportion of men, difficulties are commonly encountered when encouraging patients to reduce or stop their health-risky behaviours. However, perhaps the carrot in this approach is also encouraging men to continue attempting all types of legal sexual activities. We certainly need to be pragmatic in our approach to this condition.

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REFERENCES