Sexual dysfunction

Hyperhomocysteinaemia – a further link between erectile and endothelial dysfunction?

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The links between erectile dysfunction (ED), diabetes and cardiovascular disease are now well recognised – so much so that it should be customary to evaluate for the presence of dysglycaemia and atherosclerotic disease in patients presenting with ED. Many authorities have identified that a key underlying link between this triad is that of endothelial dysfunction. The potential pathways by which endothelial dysfunction develops have been under intense scrutiny in recent years and nitric oxide (NO) has been identified as a key mediator in maintaining normal vascular tone and function. Thus, any factors that affect NO availability may in turn adversely affect endothelial function and, ultimately, contribute to any aspect of the clinical triad referred to above. Such an example is that of homocysteine, which limits the availability of NO, potentially through several mechanisms.

Previous studies have identified that hyperhomocysteinaemia is associated with the development of cardiovascular disease in those at greater risk of its development, such as microalbuminuric people with type 1 diabetes. The study summarised on the left demonstrates elevated homocysteine levels in patients with ED and therefore supports the concept that hyperhomocysteinaemia is a risk marker for the development of impotence. It also raises the intriguing question of whether or not intervention with treatment that can lower homocysteine concentrations such as folic acid may have a role in preventing or attenuating the development or degree of ED.

METABOLISM: CLINICAL AND EXPERIMENTAL

Elevated homocysteine a risk factor for erectile dysfunction

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓✓

1 Hyperhomocysteinaemia regulates nitric oxide (NO) synthase. A defect in NO generation is associated with erectile dysfunction (ED).

2 The aim of this study was to investigate the role of homocysteine (Hcys) in NO production.

3 The International Index of Erectile Function questionnaire was administered to 31 people without diabetes (mean age 55.6 ± 8.4 years) and 33 controls (mean age 44.5 ± 4.7 years) to determine erectile function.

4 Individuals with vitamin B_{12} or folate deficiency, diabetes or coronary artery disease were excluded.

5 The ED group had higher fasting plasma glucose, total cholesterol, low-density lipoprotein cholesterol and Hcys levels.

6 Mean Hcys levels correlated negatively with mean score from the International Index of Erectile Function questionnaire ($P < 0.01$) and with the first, fifth and tenth minutes' peak systolic velocity on the penile colour Doppler ultrasound.

7 Logistic regression analysis demonstrated that Hcys levels and age were the main determinants of ED.

8 The authors concluded that hyperhomocysteinaemia is therefore an important risk factor for ED, since arterial and endothelial dysfunction are related to slightly elevated Hcys levels.

Demir T, Comlekci A, Demir O et al (2007) Hyperhomocysteinemia: a novel risk factor for erectile dysfunction. *Metabolism: Clinical and Experimental* **55**: 1564–8

COCHRANE DATABASE OF SYSTEMATIC REVIEWS

PDE-5 inhibitors improve erectile function

Readability	✓✓✓✓
Applicability to practice	✓✓✓
WOW! factor	✓✓✓

1 The aim of this study was to investigate the effect of phosphodiesterase type 5 (PDE-5) inhibitors in the treatment of men with diabetes and ED.

2 Data were extracted from randomised, controlled trials of PDE-5 inhibitors in men with diabetes and ED, which were obtained from Medline, EMBASE and Cochrane Library searches.

3 Individuals from eight trials either received a PDE-5 inhibitor (n = 976) or were assigned to a control group (n = 741).

4 The weighted mean difference (WMD) for frequency of penetration during intercourse was 0.9 (95 % CI: 0.8–1.1) and for maintaining an erection to completion of intercourse the WMD was 1.1 (95 % CI: 1.0–1.2) in favour of the treatment groups.

5 At the end of the study, the WMD for the International Index of Erectile Function was 6.6 (95 % CI: 5.2–7.9) in favour of PDE-5 inhibitors.

6 In response to the question 'did the treatment improve your erections?', the relative risk for answering 'yes' was 3.8 (95 % CI: 3.1–4.5) for the intervention groups compared with controls.

7 Headache and flushing were the most common side effects. Upper respiratory tract infections, 'flu-like symptoms, dyspepsia, myalgia, abnormal vision and back pain were also observed, though less frequently.

8 The authors concluded that PDE-5 inhibitors improve ED in men with diabetes.

Vardi M, Nini A (2007) Phosphodiesterase inhibitors for erectile dysfunction in patients with diabetes mellitus. *Cochrane Database of Systematic Reviews* **24**:CD002187

'ED improves in some men following conventional overlap syndrome treatment, probably as a result of improved respiration during sleep.'

'Metabolic syndrome and a high waist-to-hip ratio were independently significantly associated with ED.'

RESPIRATORY MEDICINE

Impact of long-term conventional treatment for overlap syndrome on ED

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓✓

1 This study aimed to assess the effect of conventional treatment for obstructive sleep apnoea and chronic obstructive pulmonary disease (overlap syndrome) on erectile dysfunction (ED).

2 Men with overlap syndrome and ED (n=48; mean age: 52.8±10 years) were treated with conventional for pulmonary obstruction therapy (continuous positive airway pressure and bronchodilators) for 6 months.

3 The ED intensity score was used to measure erectile function at onset and at the end of therapy. An increase of at least five points was considered an improvement.

4 Erectile function improved in 12 individuals (25%) but a third of them were dissatisfied with the degree of improvement.

5 Age and apnoea or hypopnoea indices were positively related to improvement in ED and negatively associated with ED duration.

6 ED intensity, O_2 saturation at night and BMI were not predictive of ED improvement.

7 The authors concluded that ED improves in some men following conventional overlap syndrome treatment, probably as a result of improved respiration during sleep.

8 Since the treatment only improved ED in a minority of individuals, some of whom were not satisfied with the extent to which it was effective, it seems likely that these people need treatment specific to ED.

Perimenis P, Karkoulias K, Konstantinopoulos A et al (2007) The impact of long-term conventional treatment for overlap syndrome (obstructive sleep apnea and chronic obstructive pulmonary disease) on concurrent erectile dysfunction. *Respiratory Medicine* **10**: 210–6

BJU INTERNATIONAL

Diabetes increases Peyronie's disease severity

Readability	✓✓✓✓
Applicability to practice	✓✓✓
WOW! factor	✓✓✓

1 Penile deformity and blood flow were assessed in 59 men with Peyronie's disease (PD) and diabetes compared with 109 men with PD with no risk factors for diabetes.

2 Individuals were categorised into vascular groups using penile duplex Doppler ultrasonography and the Kelami classification was used to stratify measured penile curvature.

3 Men in the diabetes arm were significantly older and duration of PD was longer than in the control group.

4 The degree of penile deformity was 45.2% and 30.2% in the diabetes and control groups, respectively.

5 Severe penile curvature of >60% was more common in the group with diabetes (27.1% versus 5.5% in the control group), as was the rate of erectile dysfunction.

6 The severity of PD is higher if diabetes is the only risk factor. This is also associated with a worse vascular status.

Kendirci M, Trost L, Sikka SC, Hellstrom WJ (2007) Diabetes mellitus is associated with severe Peyronie's disease. *BJU International* **99**: 383–6

THE JOURNAL OF UROLOGY

Metabolic syndrome is associated with erectile dysfunction

Readability	✓✓✓✓
Applicability to practice	✓✓✓
WOW! factor	✓✓✓

1 This study investigated metabolic syndrome as a risk factor for ED.

2 In total, 2371 men (mean age 46.1 years) who were participating in a health screening project completed the International Index of Erectile Function-5 questionnaire. The 2005 International Diabetes Federation consensus definition was used to identify metabolic syndrome.

3 Moderate to severe ED was detected in 6.9% of individuals, mild ED was present in 59.7% and 33.4% had no ED.

4 A total of 33.8% had metabolic syndrome.

5 Multiple linear regression demonstrated that metabolic syndrome and a high waist-to-hip ratio were independently significantly associated with ED (P=0.01 in both cases).

6 Men over 50 years old had an increase of 48% in severe erectile dysfunction when stratified according to age.

Heidler S, Temml C, Broessner C et al (2007) Is the metabolic syndrome an independent risk factor for erectile dysfunction? *The Journal of Urology* **177**: 651–4

MINERVA ENDOCRINOLOGICA

Tadalafil improves peak systolic velocity

Readability	✓✓✓
Applicability to practice	✓✓✓
WOW! factor	✓✓✓✓

1 Twenty individuals with diabetes and erectile dysfunction (ED) were treated with tadalafil for 3 months.

2 The penile duplex Doppler spectrum analysis was used to measure peak systolic velocity (PSV).

3 Half of the study group were randomly assigned to receive tadalafil 20mg orally on demand and half were administered tadalafil 20mg weekly.

4 Following alprostadil administration, 30% of the on-demand group and 60% of fixed-dose receivers had increased PSV. Of the latter group, 40% were reclassified to a less severe diagnostic category. SIEDY questionnaires identified improvement in sexual activity.

5 There was no change in hormone levels so the authors concluded that treatment probably had a placebo effect on the frequency and quality of sexual intercourse.

La Vignera S et al (2007) Tadalafil and modifications in peak systolic velocity (Doppler spectrum dynamic analysis) in the cavernosal arteries of patients with type 2 diabetes after continuous tadalafil treatment. *Minerva Endocrinologica* **31**: 251–61