

Sexual dysfunction



Don't forget sex and hypo education!

Mike Cummings

Consultant Physician and Honorary Professor, Queen Alexandra Hospital, Portsmouth

Hypoglycaemia is a challenging problem associated with glycaemic management in diabetes, in particular type 1 diabetes. Hypoglycaemic episodes cause unpleasant symptoms that can affect lifestyle at home and in the work place, and there is now evidence of an association between severe hypoglycaemia and cardiovascular disease (Goto et al, 2013).

Participating in sex results in significant energy expenditure (2–6 METs*), thereby increasing the risk of hypoglycaemia. In the current article summarised alongside, Pinhas-Hamiel et al explore the fear of hypoglycaemia in people with type 1 diabetes. Unsurprisingly, hypoglycaemic fear is not uncommon – one-third of people feared a hypoglycaemic event would occur during sex. These individuals had typically experienced a hypoglycaemic episode during or after sexual

activity previously. More than two-thirds of those studied did not undertake any measures to mitigate the increased risk of hypoglycaemia. As a healthcare professional, we recognise the need to educate our patients about hypoglycaemic management and its relationship with exercise. This study highlights the need to specifically address with people with diabetes the subject of glycaemic control in relationship to sexual activity. Often it is a subject avoided by patients and clinicians; however, this article identifies that it is a concern to patients and impacts on patients' psyche (even though minimal action seems to be taken by the individual to avoid this risk), and there is a role for the clinician to play in educating and raising awareness.

Goto A, Arah OA, Goto M et al (2013) Severe hypoglycaemia and cardiovascular disease: systematic review and meta-analysis with bias analysis. *BMJ* **347**: f4533

Wilson PK, Farday PS, Froelicher V (1981) *Cardiac Rehabilitation: Adult Fitness and Exercise Testing* (2nd edition). Lea and Fabiger, Philadelphia, USA

*METs=metabolic equivalent of task. For comparison, walking one mile on the flat in 20 minutes consumes 3-4 METs (Wilson et al, 1981).

Diabetes Metab Res Rev

Sexual lifestyle of young people with T1D

Readability /////
 Applicability to practice ////
 WOW! Factor /////

1 The aim of this study was to assess the sexual lifestyle of young people with T1D, as it has been hypothesised that individuals may have fears or concerns about experiencing hypoglycaemic episodes during sex.

2 The cohort comprised 53 adults (51% male) and the mean±standard deviation age was 27.8±8.2 years. Participants completed the Hypoglycemia Fear Survey-II (HFS-II) and the Sex Practices and Concerns questionnaire.

3 In total, 37 people reported they never, or almost never, had concerns in their sexual lifestyles related to diabetes. None had experienced severe hypoglycaemic events during sex, while 40% had experienced mild events.

4 Fear of hypoglycaemia (FOH) during sex was reported by 35% of participants. Those with FOH tended to have experienced mild hypoglycaemic events in the past, were single and had higher scores on the Worries sub-scale of the HFS-II survey than those who did not report FOH.

5 Asked about how, and if, they ensured higher blood glucose during and after sex, 59% never or almost never measured their glucose before sex, and 37% did not measure after sex.

6 Most felt able to distinguish the signs of hypoglycaemia from sexual excitement, and nearly all said they would tell new partners they had diabetes at least some of the time.

7 Young people should be educated about the level of intensity that is exerted during intercourse and provided with practical tools to prevent hypoglycaemia.

Pinhas-Hamiel O, Tisch E, Levek N et al (2016) Sexual lifestyle among young adults with type 1 diabetes. *Diabetes Metab Res Rev* 6 Jul [Epub ahead of print]

Eur J Endocrinol

Effects of long-term Vardenafil therapy

Readability /////
 Applicability to practice ////
 WOW! Factor /////

1 Phosphodiesterase-5 inhibitors (PDE5i) improve nitric oxide (NO) levels to reduce NO-mediated relaxation in erectile dysfunction (ED).

2 The team sought to determine the effects of long-term, chronic treatment with Vardenafil, in particular whether it improves systemic endothelial function and sexual hormone levels in men with ED and T2D.

3 In a randomised placebo-controlled double-blind clinical trial, 54 men were assigned to Vardenafil and placebo (10 mg twice-daily) in a 50:50 ratio. The treatment phase lasted 24 weeks.

4 Based on the International Index of Erectile Function (IIEF)-15, erectile function improved during treatment ($P<0.001$).

5 Both flow-mediated dilation (FMD) and serum interleukin-6 significantly improved and FMD correlated with serum testosterone levels, which also increased. No associated side effects were reported in the chronic use of Vardenafil.

6 Endothelial parameters were overall improved, and testosterone levels increased in men with T2D and hypogonadism.

Santi D, Granata AR, Guidi A et al (2016) Six months of daily treatment with vardenafil improves parameters of endothelial inflammation and of hypogonadism in male patients with type 2 diabetes and erectile dysfunction: a randomized, double-blind, prospective trial. *Eur J Endocrinol* **174**: 513–22

Sex Med

ED and SMI: Using angiography as a predictor

Readability ////
 Applicability to practice ////
 WOW! Factor ////

1 Erectile dysfunction (ED) is known to correlate with cardiac symptoms, so the authors aimed to evaluate the presence of silent myocardial ischaemia (SMI) in people with diabetes and ED using multidetector computed tomographic–coronary angiography (MDCT-CA) to detect coronary artery stenosis.

2 MDCT-CA is a non-invasive imaging tool with high specificity and sensitivity for the evaluation of coronary artery disease (CAD). Participants' erectile function, erection hardness and maximal penile circumferential change were also measured.

3 Twenty men (mean age=61.45±10.7 years) were enrolled. Prior to this study, participants had no history of cardiac symptoms. Following the MDCT-CA, 13 showed variable signs of coronary artery stenosis and 10 had at least 50% vessel lumen obstruction of the left anterior descending coronary artery.

4 Three men had >90% stenosis, and two required immediate coronary angioplasty with stenting to prevent myocardial infarction.

5 The study was limited by the small sample size and the lack of a control group. Also, CAD should be assessed separately for type 1 and type 2 diabetes as the disease pathologies differs.

6 Even so, the authors conclude that MDCT-CA can be a useful tool to identify SMI in people with diabetes and ED, especially in those of advanced age and/or with severe ED. Age was the single significant predictor for coronary artery stenosis in this group of men.

Abdelhamed A, Hisasue S, Nada EA et al (2016) Relation between erectile dysfunction and silent myocardial ischemia in diabetic patients. *Sex Med* **4**: e127–34

Int J Clin Pract

Testosterone, replacement therapy and all-cause mortality

Readability ////
 Applicability to practice ////
 WOW! Factor ////

1 The authors set out to investigate the impact of testosterone replacement therapy (TRT) on men with T2D on all-cause mortality. Ongoing statin, testosterone and phosphodiesterase 5 inhibitor (PDE5i) treatment was recorded and included in statistical models to determine the impact of the three drugs on mortality.

2 A total of 857 men with T2D from five primary care practices in the English Midlands were initially screened for total testosterone (TT) and free testosterone (FT) during a 2-year period as part of the randomised controlled BLAST study. PDE5i and statins were prescribed to 175 and 662 men respectively, and the primary end-point was all-cause mortality.

3 Cox regression models were used to compare survival in three cohort groups determined by testosterone level and treatment. The analysis was adjusted for age, statin and PDE5i use, BMI, blood pressure and lipids.

4 Mortality in the normal testosterone/untreated group and the low testosterone/treated group was significantly reduced compared to the low testosterone/untreated group.

5 TRT is independently associated with reduced mortality in men with T2D, especially among men over the age of 60 years. The study confirms that low baseline testosterone is associated with all-cause mortality and that daily PDE5i treatment may be beneficial.

Hackett G, Heald AH, Sinclair A et al (2016) Serum testosterone, testosterone replacement therapy and all-cause mortality in men with type 2 diabetes: retrospective consideration of the impact of PDE5 inhibitors and statins. *Int J Clin Pract* **70**: 244–53

Diabetes Res Clin Pract

Interaction between statin and testosterone

Readability ////
 Applicability to practice ////
 WOW! Factor ////

1 Statins are thought to reduce testosterone levels in the body by lowering cholesterol, which is a precursor to testosterone. The authors sought to determine whether this hypothesis was true.

2 A total of 151 Taiwanese men (>40 years of age) with T2D and high cholesterol were enrolled. Biochemical measurements were taken before statin therapy commenced, after 6 months of rosuvastatin (5 mg/day) treatment and then 6 months after statin therapy was discontinued. The authors also enrolled 130 age-matched Taiwanese men with T2D but without hypercholesterolaemia as controls. None of the participants had received statin treatment for more than a year.

3 Serum total- and LDL-cholesterol levels were both high before statin therapy. As expected, after 6 months of treatments, levels significantly decreased before increasing significantly 6 months after discontinuing statin therapy. The level of serum free testosterone also followed this pattern.

4 Each participant also completed a sexual health survey to gauge any changes in sexual function as a result of statin treatment. Results suggest that there was no significant change over the 12-month study period.

5 Rosuvastatin appears to reduce free testosterone levels but did not influence sexual function in men with T2D. However, the authors report that not all men were sexually active during the study, so the effect of statins on sexual health may be underestimate.

Hsieh CJ, Huang B (2016) Rosuvastatin decreases testosterone levels but not sexual function in men with type 2 diabetes. *Diabetes Res Clin Pract* **120**: 81–8

“*Statin lower cholesterol, which is a precursor for testosterone. In this study, rosuvastatin appears to reduce free testosterone levels but did not influence sexual function in men with T2D.*”