

Diabetesity Digest

Diabetesity Digest summarises recent key papers published in the area of coexistent diabetes and obesity – diabetesity. To compile the digest a PubMed search was performed for the 3 months ending March 2012 using a range of search terms relating to type 2 diabetes, obesity and diabetesity. Articles have been chosen on the basis of their potential interest to healthcare professionals involved in the care of people with diabetesity. The articles were rated according to readability, applicability to practice, and originality.



Follow-up screening in women with a history of gestational diabetes is vital for the early treatment of diabetes

David Haslam
GP, Hertfordshire and Chair
of the National Obesity Forum

Gestational diabetes (GD) is well recognised, routinely screened for and managed impeccably in joint antenatal/endocrine clinics. Labour and delivery are closely scrutinised but once the baby has been checked, the future is left to chance. A paper by Buchanan and Page (2011; summarised alongside) defines best practice in people with GD who do not immediately progress to diabetes, highlighting the importance of frequent follow-up, regular blood tests and the fundamental point of not forgetting that this group runs a very high risk of developing type 2 diabetes.

Follow-up ensures that advice and support is ongoing and means that individuals who ultimately develop diabetes receive the early intensive treatment that the UKPDS (UK Prospective Diabetes Study) defines as crucial (Holman et al, 2008).

GD is not the only factor that confers a high risk of diabetes – obesity, family history and ethnicity also do. The Quality and Outcomes Framework obesity register is pointless as it promotes no action. Why not a “diabetes risk” register that prompts annual or 6-monthly blood tests?

Having a history of GD indicates that full blown diabetes may develop; thus it should be possible to ensure screening takes place.

The authors found that GD leads to macrosomia and so the children of mothers with GD are also at risk of developing the condition. The prospect of adding this to an “at risk” register is complex, but raising parental awareness could help to improve infant and childhood nutrition.

The paper also alludes to the highly debated trial of diet and physical activity upon diagnosis of diabetes prior to drug therapy being implemented. The authors argue lucidly that diet and lifestyle can help to prevent diabetes in high-risk individuals and is a key part of treatment alongside drugs once the diagnosis is made. The strong message here, backed by the UKPDS “legacy effect” (Holman et al, 2008), is that early intensive treatment should include pharmacotherapy.

The controversy is whether drug therapy should be used in high-risk individuals prior to a formal diagnosis of diabetes. Buchanan and Page assert that there is little evidence, but XENDOS (Xenical in the Prevention of Diabetes in Obese Subjects; Torgerson et al, 2004), DREAM (Diabetes Reduction Assessment with Ramipril and Rosiglitazone Medication; DREAM Trial Investigators et al, 2006) and even NAVIGATOR (NAVIGATOR Study Group et al, 2010) suggest otherwise, although arguably most of these trials have nothing to do with preventing diabetes, merely treating it at a lower threshold. But that is another argument. ■

DREAM Trial Investigators, Bosch J, Yusuf S et al (2006) Effect of ramipril on the incidence of diabetes. *N Engl J Med* **355**: 1551–62

Holman RR, Paul SK, Bethel MA et al (2008) 10-year follow-up of intensive glucose control in type 2 diabetes. *N Engl J Med* **359**: 1577–89

NAVIGATOR Study Group, Holman RR, Haffner SM et al (2010) Effect of nateglinide on the incidence of diabetes and cardiovascular events. *N Engl J Med* **362**: 1463–76

Torgerson JS, Hauptman J, Boldrin MN, Sjöström L (2004) Xenical in the prevention of diabetes in obese subjects (XENDOS) study: a randomized study of orlistat as an adjunct to lifestyle changes for the prevention of type 2 diabetes in obese patients. *Diabetes Care* **27**: 155–61

Journal of Clinical Endocrinology & Metabolism

Clinical approach to patients with gestational diabetes following delivery

Readability // // // //
Applicability to practice // // // //
Originality // //

1. Gestational diabetes (GD) in relatively young women indicates a defective function of the pancreatic beta-cells. In most cases beta-cell function gradually deteriorates, leading to diabetes.
2. The available evidence suggests that it is possible to delay, or even prevent, T2D by intensive lifestyle changes and medications.
3. The authors state that women should undergo a glucose tolerance test in the postpartum period to detect diabetes or assess their risk of developing the condition. Those who do not have diabetes should receive advice on being at risk of developing it. Family planning should be encouraged to avoid undiagnosed hyperglycaemia in subsequent pregnancies. These women should be monitored for hyperglycaemia, which would indicate that beta-cell function is progressively worsening.
4. These women should be monitored at least once per year and more frequently if dysglycaemia is present.
5. Children whose mothers had GD are more likely to be obese and to develop diabetes.
6. The authors concluded that women who have had GD should be educated, be monitored and be given lifestyle advice to lower their risk of obesity and diabetes.

Buchanan T, Page KA (2011) Approach to the patient with gestational diabetes after delivery. *J Clin Endocrinol Metab* **96**: 3592–8

Obesity Research & Clinical Practice

Dysmetabolic signals in “metabolically healthy” obese people

Readability ✓✓✓
 Applicability to practice ✓✓✓✓
 Originality ✓✓✓

1. Decreased insulin sensitivity, atherogenic dyslipidaemia and hypertension is linked to obesity, but studies have also indicated an obese phenotype described as “metabolically healthy”.
2. The aim of the study was to compare the characteristics of participants that were “metabolically healthy”

obese (MHO), “metabolically healthy” normal weight (MHNW) and obese with insulin resistance in the US National Health and Nutrition Examination Survey, 1999–2004.

3. MHO and MHNW participants were similar with respect to age, as well as fasting glucose and triglyceride levels.
4. MHO participants were found to have a lower plasma level of high-density lipoprotein-cholesterol than normal-weight subjects, making them more prone to coronary artery disease.
5. The authors concluded that MHO people have a variety of simultaneous risk factors that point to the development of coronary artery disease.

Manu P, Ionescu-Tirgoviste C, Tsang J (2011) Dysmetabolic signals in “metabolically healthy” obesity. *Obes Res Clin Pract* 6: e9–e20

Journal of Clinical Endocrinology & Metabolism

Visceral adipose tissue indicates severity of cardiometabolic risk

Readability ✓✓✓✓
 Applicability to practice ✓✓✓✓
 Originality ✓✓✓

1. Visceral adiposity (abdominal obesity) is linked to cardiometabolic risk, but its correlation following the diagnosis of T2D is not clear.
2. The aim of the study was to evaluate the links between visceral adiposity, T2D and cardiometabolic risk.
3. This cross-sectional computed tomography imaging study consisted of data collected from June 2006 to May 2008.
4. The authors categorised participants according to visceral adiposity tertiles, T2D status and gender and adjusted results to take into account age, BMI, region and the specialty of the physician.

“Visceral abdominal adiposity may be an important cardiometabolic risk factor regardless of T2D status.”

5. Markers of insulin resistance, lipids and lipoproteins, inflammatory markers and liver fat increased in both male and female participants with visceral adiposity, irrespective of whether they had T2D.
6. Prevalent cardiovascular disease (CVD) rose in participants with visceral adiposity tertiles, regardless of whether they had T2D. There was a positive correlation between Visceral adiposity and T2D, and a negative correlation between liver attenuation and T2D.
7. The authors found that visceral (but not subcutaneous) abdominal adiposity has an important association with cardiometabolic risk factors and to the widespread nature of CVD.
8. The authors concluded that visceral abdominal adiposity may be an important cardiometabolic risk factor regardless of T2D status.

Smith JD, Borel AN, Nazare JN et al (2012) Visceral adipose tissue indicates the severity of cardiometabolic risk in patients with and without type 2 diabetes: Results from the INSPIRE ME IAA Study. *J Clin Endocrinol Metab* 97: 1517–25

American Journal of Clinical Nutrition

Long-term efficacy and safety of PHEN/TPM CR in overweight and obese

Readability ✓✓✓
 Applicability to practice ✓✓✓✓
 Originality ✓✓✓

1. The controlled release of phentermine and topiramate (PHEN/TPM CR), alongside lifestyle modification, showed important weight loss compared with a placebo in a previous 56-week study on overweight and obese people with disorders relating to their weight.
2. The aim of the study was to evaluate the efficacy and safety of the long-term use of PHEN/TPM CR to treat overweight and obese people with cardiometabolic disease.
3. The authors concluded that combining PHEN/TPM CR with lifestyle modification could provide an appropriate and effective ongoing treatment of obesity that is complicated by cardiometabolic disease.

Garvey WT, Ryan DH, Look M et al (2012) Two-year sustained weight loss and metabolic benefits with controlled-release phentermine/topiramate in obese and overweight adults (SEQUEL): a randomized, placebo-controlled, phase 3 extension study. *Am J Clin Nutr* 95: 297–308

American Journal of Clinical Nutrition

A very-low-calorie diet in obese people with diabetes improves glucose control

Readability ✓✓✓
 Applicability to practice ✓✓✓✓
 Originality ✓✓✓

1. A calorie restriction diet quickly improves glucose control in obese people with T2D. But it is not clear what the early effects of a very-low-calorie diet (VLCD) are on insulin sensitivity and insulin secretion in obese people with T2D.
2. There was a noticeable improvement in metabolic profile of morbidly obese people with T2D after a 7-day VLCD, which the authors suggest was primarily due to the amelioration of beta-cell function.
3. The authors concluded that short-term caloric restriction improved glucose control and beta-cell function in morbidly obese people with T2D – a group of people who are possible candidates for bariatric surgery.

Malandrullo L, Pasqualetti P, Giordani I (2012) Very-low-calorie diet: a quick therapeutic tool to improve b cell function in morbidly obese patients with type 2 diabetes. *Am J Clin Nutr* 95: 609–13