

LETTERS

Gestational diabetes mellitus: why screen and how to diagnose

Dear Editor,

In the Editorial Gestational diabetes mellitus: why screen and how to diagnose published in Hippokratia Vol 14, No 3 (2010) the authors¹ present recent literature about the significance of recognition and glycemia control in women with gestational diabetes mellitus (GDM).

Indeed the International Association of Diabetes and Pregnancy Groups (IADPSG)² proposed new values for 75 gr oral glucose tolerance test (OGTT) plasma glucose concentration of 92 for fasting, 180 one-hour and 153 mg/dl two-hour after glucose load. These values were based on the results of Hyperglycemia and Adverse Pregnancy Outcomes (HAPO) study and differ only minimally from values proposed by ADA³ (95 fasting, 180 one-hour and 155 mg/dl two-hour after 75 gr glucose load).

The most important difference between IADPSG and ADA is that according to IADPSG criteria only one value of glucose above the normal range is sufficient for the diagnosis of gestational diabetes. It is not necessary therefore to perform OGTT in women with fasting plasma glucose above 92 mg/dl OGTT. This strategy is implemented in Diabetes Centre in Hippokratia Hospital in Thessaloniki; in addition we do not perform the 50 glucose load test as a screening test for GDM because, with this test, it is not possible to recognize all women with GDM.

Recently Agarwal et al⁴ determined the impact of IADPSG criteria on GDM diagnosis compared to the ADA criteria and the fasting plasma glucose to predict GDM. The IADPSG criteria increased GDM prevalence nearly threefold. However the cost- effectiveness of this strategy has not been answered yet and it should be determined in the future.

1. Karagiannis T, Bekiari E, Manolopoulos K, Paletas K, Tsapas A. Gestational diabetes mellitus: why screen and how to diagnose. Hippokratia. 2010; 14: 151-154
2. International association of diabetes and pregnancy study groups recommendations on the diagnosis and classification of hyperglycemia in pregnancy. Diabetes Care. 2010; 33: 676-682.
3. American Diabetes Association. Standards of medical care in diabetes- 2010. Diabetes Care. 2010; 33: S11-S61.
4. Agarwal MM, Dhath GS, Shah SM. Gestational diabetes: simplifying the IADPSG diagnostic algorithm using fasting plasma glucose. Diabetes Care 2010. June 2 [Epub ahead of print].

Sampanis Ch, Zografou J

Diabetes Centre, Hippokratia Hospital, Thessaloniki, Greece

Conflict of interest: none declared

Key words: gestational diabetes mellitus

Corresponding author: Sampanis Ch, e-mail: chsambanis@yahoo.gr

Gestational diabetes mellitus: why screen and how to diagnose

Dear Editor,

We appreciate the interest of Sampanis and collaborators in our editorial¹. Gestational diabetes mellitus (GDM) is indeed a significant health issue, associated with increased perinatal morbidity. Diagnosis of GDM has always been an issue of controversy due to the use of different diagnostic criteria and methodology. Hence, the proposal by the International Association of Diabetes and Pregnancy Study Groups (IADPSG) of a uniform set of simple diagnostic criteria, if adopted, could simplify diagnosis and provide a common ground for GDM for healthcare professionals around the world.

The main feature of the newly proposed IADPSG criteria, which clearly differentiates them from previous criteria, like those proposed by the American Diabetes Association (ADA), is the diagnostic strategy rationale. Current ADA diagnostic criteria² are based on the later risk of developing type 2 diabetes in the mother after gestation, as proposed in 1964 by O' Sullivan and Mahan and later modified by Carpenter and Coustan, during a 100 g oral glucose tolerance test (OGTT). Moreover, the ADA criteria could be used with a 75 g OGTT, however "... this test is not as well validated as the 100 g OGTT"². The IADPSG criteria introduce a shift in the diagnostic strategy by suggesting cut-off values that correspond to an odds ratio for adverse pregnancy outcomes of at least 1.75 compared with women with the mean glucose levels during a 75 g OGTT³, as demonstrated in the HAPO study⁴.

Moreover, however minimal the difference between the IADPSG and ADA cut-off values may seem, using the value of 95 mg/dl for fasting plasma glucose (FPG) as an alternative to the 92 mg/dl, could indeed result in a substantial decrease in the percentage of women diagnosed with GDM³. Thus, the IADPSG diagnostic strategy can indeed increase the prevalence of GDM. Today, there is mounting evidence that treating even mild GDM reduces morbidity for both mother and baby⁵. The American Diabetes Association is therefore "...working with U.S. obstetrical organizations to consider

adoption of the IADPSG diagnostic criteria and to discuss the implications of this change²².

When applying the IADPSG criteria on the HAPO cohort, the majority of women diagnosed with GDM were identified by the FPG and the 1-hour measurement of the 75 g OGTT (8.3% and 5.7% of the entire study population, respectively)³. Adding the 2-hour measurement identified another 2.1%. Thus, alternative diagnostic strategies such as measuring FPG alone or omitting the 2-hour blood draw can indeed be appealing. It would thus be interesting to verify their cost-effectiveness in comparison with the unmodified IADPSG diagnostic recommendations in a large prospective multicentre trial.

1. Karagiannis T, Bekiari E, Manolopoulos K, Paletas K, Tsapas A. Gestational diabetes mellitus: why screen and how to diagnose. *Hippokratia*. 2010; 14: 151-154.
2. American Diabetes Association. Diagnosis and classification of diabetes mellitus. *Diabetes Care*. 2010; 33(Suppl 1): S62-S69.
3. International association of diabetes and pregnancy study groups recommendations on the diagnosis and classification of hyperglycemia in pregnancy. *Diabetes Care*. 2010; 33: 676-682.
4. Metzger BE, Lowe LP, Dyer AR, Trimble ER, Chaovarindr U, Coustan DR, et al. Hyperglycemia and adverse pregnancy outcomes. *N Engl J Med*. 2008; 358: 1991-2002.
5. Landon MB, Spong CY, Thom E, Carpenter MW, Ramin SM, Casey B, et al. A multicenter, randomized trial of treatment for mild gestational diabetes. *N Engl J Med*. 2009; 361: 1339-1348.

Karagiannis T¹, Bekiari E¹, Manolopoulos K², Paletas K¹, Tsapas A^{1,3}

¹Metabolic Diseases Unit, Second Medical Department, Aristotle University of Thessaloniki, Greece

²Oxford Centre for Diabetes Endocrinology and Metabolism, Oxford, UK

³The Tseu Medical Institute, Harris Manchester College, University of Oxford, UK

Conflict of interest: none declared

Key words: gestational diabetes mellitus

Corresponding author: Tsapas A, e-mail: atsapas@gmail.com

Childhood obesity in Greece: the emerging role of primary health care

Dear Editor,

The prevalence of overweight and obesity among children and adolescents seems to be rising at particularly alarming rates in many regions of the world. This fact is particularly important in terms of cardiovascular health since childhood obesity tracks into adulthood and is associated with the presence of cardiovascular risk factors and target organ damage. Greece has a predominant place with regard to this issue, since it has been reported to have one of the highest prevalences in childhood obesity with significant rising trends¹⁻⁴.

Childhood obesity has a multifactorial pathogenesis with genetic background, reduced physical activity along with a sedentary status, and poor dietary habits as contributory factors, although the role of each of them in the emergence of obesity remains elusive. However, the available evidence, although not strong enough, suggests that practices such as appropriate dietary behaviour and regular physical activity appear to be protective against weight and fatness gain during childhood and adolescence. These observations are important in the context of developing primary prevention programs against childhood obesity.

In the last years, several cross-sectional studies have assessed obesity status in Greek children with measured data and according to the International Obesity Task Force standards. These studies report childhood obesity rates from 4% to 11%¹⁻⁴. Factors which may account for the observed discrepancies include time period of the study, characteristics and representativeness of the sample examined. It should be noted that the purpose of this letter was not to conduct a systematic review and of-course there are studies not mentioned. However, in most of these studies, overweight and obesity affect about one third of the examined young population. Moreover, overweight/obesity rates seem to be higher among boys compared to girls^{1,2,4} although there are studies not confirming this observation³.

Another interesting observation is that obesity rates are consistently high in peripheral, mainly rural districts⁴. This observation is very important since it implicates primary care physicians in the early recognition and management of this public health issue. In particular, primary health care providers should be: (i) well aware of the epidemiologic dimensions and the implications of this public health issue, (ii) able to recognize children at risk for overweight/obesity, (iii) willing to implement screening and follow-up programs and develop preventive strategies in cooperation with other structures such as family and/or school, (iv) familiar with the provision of basic nutrition and physical activity education, and (v) able to consider sub-specialist referrals timely when co-morbidities persist. It should be realized that the active role of the primary care physicians is of paramount importance in order to curtail the childhood obesity epidemic.

References

1. Tzotzas T, Kapantais E, Tziomalos K, Ioannidis I, Mortoglou A, Bakatselos S, et al. Epidemiological survey for the prevalence of overweight and abdominal obesity in Greek adolescents. *Obesity (Silver Spring)*. 2008; 16: 1718-1722.